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Studies in French Applied Linguistics

Edited by
Dalila Ayoun

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Studies in French Applied Linguistics

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Editors

Jan H. Hulstijn
Department of Second Language Acquisition, University of Amsterdam

Nina Spada
Ontario Institute for Studies in Education, University of Toronto

Volume 21

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Dalila Ayoun
University of Arizona

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In memoriam

Celia Jakubowicz passed away in Paris on January 10, 2008.

Celia arrived in Paris for the first time in 1964, after finishing her degree in psychology in Buenos Aires, and obtaining an Argentinean government scholarship to be trained in experimental psychology at the Institut de psychologie of the French national research institute (CNRS) with the project of creating a similar program in Buenos Aires two years later. She ended up with a position in the CNRS after proposing a research project on the psychological reality of derivational complexity in models of language production. She returned to Buenos Aires to take up her initial project only in 1971, co-founding and later directing the Interdisciplinary Center for Research and Teaching in experimental psychology at the University of Buenos Aires, where she taught and conducted research on language acquisition. The political situation in Argentina put an end to this part of her career, and in 1976, she was fired and fled to Paris, where she took up her position in Paul Fraisse's experimental psychology laboratory at the CNRS, a position she held for the rest of her career.

A major turning point for Celia was meeting Noam Chomsky in 1980; he invited her to MIT, where she was a visiting scholar for three years. Returning to Paris, she launched work integrating an interdisciplinary, theoretically founded approach to language acquisition in children and she began work in this perspective on language pathology (adult aphasia). Her enthusiasm was not limited to her own research, as she embarked on training graduate students to engage in theoretically founded psycholinguistic work (notably in teaching at Paris 8 University).

Celia was instrumental in building bridges between theoretical linguists and experimental psychologists interested in working on language in France. In this context, she began investigating Specific Language Impairment in children in 1995, working closely with clinicians in Paris area hospitals, and stimulating similar work elsewhere not only in France, but also in Europe and Latin America.

Those who crossed paths with Celia in this way will remember her for her incredible generosity: she gave freely of her expertise, time and friendship. She will be sorely missed, by the profession, and by her many friends and colleagues.

Laurie Tuller

Preface

Manier savamment une langue, c'est pratiquer
une espèce de sorcellerie évocatoire.
Baudelaire

This volume is a continuation of *French Applied Linguistics* (John Benjamins, 2007) which tackled the ambitious objective of retracing the history of the French language throughout the centuries starting with pioneers such as J. Ronjat or Abbot Charles-Michel l'Epée all the way to its current state by offering a window into some of the subfields of applied linguistics to which French has contributed.

Applied linguistics being such an imposing field, this first volume could only cover a few areas. Thus, the introductory chapter reviewed the history of the French language from a sociolinguistic perspective. Then, the six chapters of the first part covered what are most commonly considered the core aspects of the second language acquisition of any language: Phonology, semantics/syntax, syntax/morphology, pragmatics, sociolinguistics, and grammatical gender. The seven chapters that composed the second part of the volume aimed at presenting less commonly researched areas of applied linguistics which also stressed the contribution of the French language in various fields such as language ideology and foreign language pedagogy, corpus linguistics, or French Sign Language. A chapter also explored the role of affective variables, attitude and personality on language learning, while another investigated how computational approaches may facilitate lexical creativity. The chapters on creole studies and applied linguistics in West Africa both addressed issues in first and second language acquisition in complex sociolinguistic and political contexts. Finally, the last chapter – "French in Louisiana: A view from the ground" – serves as an epilogue to illustrate the past, present and future of French in a region rich in linguistic history.

The present volume turns to different areas of applied linguistics with the same ambition to showcase French, so to speak, and to again explore lesser known but growing subfields such as forensic linguistics. The five chapters of the first part are dedicated to the first and second language acquisition of French in various settings: First language acquisition by normal children from a generative perspective and by children with Specific Language Impairment; second language acquisition in Canadian immersion settings, from a neurolinguistic approach to phonology and natural language processing and CALL. The six chapters of the second part explore the contribution of French in various subfields of applied linguistics such as an anthropological approach

to literacy issues in Guadeloupean *Kréyòl*, literacy issues in new technologies, phonological and lexical innovations in the *banlieues*, French in North Africa, language planning and policy in Quebec, as well as the emerging field of forensic linguistics from an historical perspective.

My most sincere thanks and appreciation go to the numerous colleagues who served as anonymous external reviewers, providing insightful comments and invaluable suggestions. They are listed in alphabetical order: François-Xavier Alario, Fouzia Benzakour, Robert Blake, Zoe Boughton, Pascual Cantos, Dorothy Chun, Maeve Conrick, Jim Cummins, Joe Dicks, Zsuzanna Fagyal-Le Mentec, Julie Franck, Michael Friesner, Theres Grueter, Marie-Christine Hazaël-Massieux, David Hornsby, Harriet Jisa, Sébastien L'haire, Anthony Lodge, Roy Lyster, Mohammed Miliani, Yael Neumann, William O'Grady, Elin Thordardottir, Cécile Vigouroux, and Flore Zephir.

I would also like to thank my contributors – many of whom were colleagues I did not know prior to working on this project – for their trust, patience, and professionalism throughout this journey. It was a pleasure working with all of them. Last, but not least, I very much appreciated how prompt, professional and reliable Kees Vaes, Martine van Marsbergen and Patricia Leplae were, as usual. Sincere thanks also go to Nina Spada and Jan Hulstijn, the editors for the Language Learning & Language Teaching series, for their careful reading of the first submission and valuable comments. I truly enjoyed editing this volume, and sincerely hope it makes an important contribution to the field of applied linguistics in general, with a particular focus on French.

About the contributors

Farid Aitsiselmi studied languages and linguistics in Algeria and UK, and has lectured at the University of Algiers and the University of York (UK). He has been lecturer in French Studies at the University of Bradford (UK) since 1995 where he teaches French language and linguistics. His research interests include sociolinguistics and language in contemporary France with special reference to the North African migrant population, language planning in Algeria, language and cultural identity. He may be contacted at F.Aitsiselmi@Bradford.ac.uk.

Dalila Ayoun is Associate Professor of French Linguistics and Second Language Acquisition and Teaching in the Department of French and Italian at the University of Arizona in Tucson. Her research focuses on the second language acquisition of morpho-syntax from a generative/minimalist perspective, such as the development of tense/aspect morphology, grammatical gender and agreement. Her most recent publications include the edited volume *French Applied Linguistics* (John Benjamins, 2007); and her collaborative work with M. Rafael Salaberry (University of Texas at Austin) led to a co-edited/co-authored volume, *Tense and Aspect in Romance Languages* (John Benjamins, 2005) as well as an article entitled "The expression of temporality in English as a foreign language by French native speakers" to appear in *Language Learning* (September, 2008). She also co-edits the *Studies in Bilingualism* series published by John Benjamins with Kees de Bot (Rijksuniversiteit Groningen). She may be contacted at ayoun@u.arizona.edu.

Cornelia Hamann is Professor of Applied English Linguistics at the University of Oldenburg. Her research interests focus on the integration of descriptive work on areas of English grammar (adjectives, tenses) into models of formal syntax, semantics and pragmatics and on cross-linguistic acquisition studies using models of comparative syntax. More recently she has also investigated language impairment, bilingual language acquisition and second language acquisition. In Oldenburg she is now engaged in a project on "understanding speech under fluctuating noise in children and adults from an audiological and psycholinguistic point of view (AULIN)" and in a project on English as L3. She may be contacted at cornelia.hamann@uni-oldenburg.de.

Marie-Josée Hamel has been involved in Computer Assisted Language Learning (CALL) teaching, research and development since 1994. She has worked at the Centre for Computational Linguistics, UMIST (U.K.) for ten years and has recently accepted a position as an Associate professor of Applied linguistics in the Department of French at Dalhousie

University, Canada. Her interests are in the re-use of Natural Language Processing (NLP) technologies in CALL and in the contribution of linguistic and second language acquisition theories to CALL. Her CALL applications are dedicated to intermediate-advanced learners of French. She may be contacted at marie.hamel@dal.ca.

Rick Kern is Associate Professor of French and Director of the Berkeley Language Center at the University of California at Berkeley. His research interests include language acquisition, literacy, and relationships between language and technology. He is also Director of the UC Santa Barbara Summer Institute of French and Francophone Studies--a graduate degree program designed for teachers. His book *Literacy and Language Teaching* (Oxford University Press, 2000) deals with the theory and practice of reading and writing in a foreign language. He co-edited a collection of research studies with Mark Warschauer entitled *Network-Based Language Learning: Concepts and Practice*, published by Cambridge University Press. He is currently working on a book entitled *Verbal, Visual, and Virtual: The New Interface of Language, Technology, and Literacy*. He may be contacted at rkern@berkeley.edu.

Douglas Kibbee is Professor of French and Linguistics at the University of Illinois, where he directs the School of Literatures, Cultures and Linguistics. His recent research has focused on the intersection between language policy, the history of the language, and the history of linguistic theory. He is currently working on the history of prescriptivism in the French tradition, and more generally on standardization and the concept of natural language. He may be contacted at dkibbee@ad.uiuc.edu.

Marina Laganaro is Assistant Professor in the Institute of Science of Language and Speech and Language Pathology at University of Neuchâtel, where she teaches Psycholinguistics and Acquired Language Impairments. In her recent research, she seeks convergences between psycholinguistic and neurolinguistic studies on language production. She has carried out research on the cognitive processes involved in phonological encoding in healthy speakers and in brain damaged speakers, on the time course of the processes involved in language production and on the electrocortical correlates of impaired language production in aphasia. She can be contacted at Marina.Laganaro@unine.ch.

Roy Lyster is Professor of Second Language Education in the Department of Integrated Studies Education at McGill University in Canada. He has a PhD in Applied Linguistics as well as a B.Ed. and M.Ed. from the University of Toronto, and an M.A. from the Université de Paris VII. His research focuses primarily on immersion and content-based classrooms, including both observational and experimental studies of teacher-student interaction, form-focused instruction, and corrective feedback. He is president of the Canadian Association of Applied Linguistics and author of *Learning and Teaching Languages Through Content: A Counterbalanced Approach*, published by Benjamins in 2007. He may be contacted at roy.lyster@mcgill.ca.

Kathe Managan is Assistant Professor in the Geography and Anthropology Department at Louisiana State University. Her research focuses on language and media, language choice, code-switching and ideologies of language and identity in the French West Indies and Louisiana. Her publications include an article entitled "Tensions of French Empire: the reciprocal making and remaking of identities in France and its colonies" which appeared in *Identities: Global studies in culture and power* (2006) and "Diglossia reconsidered: language choice and Code-switching in Guadeloupean voluntary organizations," published in *Texas Linguistics Forum* (2004). She may be contacted at kmanagan@lsu.edu

Dawn Marley studied French and Spanish at the University of Nottingham, UK, and taught in France and Spain before lecturing in the UK. Since 1994 she has been at the University of Surrey, where she is Senior Lecturer in French. Her research interests are in the use of and attitudes towards French in the Maghreb; impact of French culture and language planning in the Maghreb; Moroccan women's magazines; identity issues for the Maghrebian community in France; sociolinguistic issues in France; language and cultural identity. She may be contacted at D.Marley@surrey.ac.uk.

Leigh Oakes is Reader in French and Linguistics at Queen Mary, University of London. His research focuses on language planning and questions of language and national identity in Québec, Sweden, France and the European Union. He is the author of *Language and National Identity: Comparing France and Sweden* (John Benjamins, 2001) and co-author of *Language, Citizenship and Identity in Quebec* (Palgrave Macmillan, 2007). He may be contacted at l.oakes@qmul.ac.uk.

Tim Pooley is Professor of Social and Applied Linguistics in the Department of Humanities, Arts and Languages at the London Metropolitan University. His research focuses on sociolinguistic variation and change; minority languages in French-speaking Europe; migration and the use of vernacular French, particularly with regard to pronunciation in the northern French city of Lille, *Chtimi: The urban vernaculars of Northern France* (Multilingual Matters, 1996) and *Language, Dialect and Identity in Lille* (Edwin Mellen, 2004). The study of regionally marked pronunciation has triggered a keen interest in so-called traditional dialects and minority languages (especially Picard and Basque) and the effects of immigration (both historical and contemporary) on vernacular varieties of French.. He may be contacted at t.pooley@londonmet.ac.uk.

Laurice Tuller is Professor of Linguistics and member of the National Institute for Health and Medical Research (INSERM) Unit 930 at François Rabelais University in Tours, where she teaches in the Linguistics Department, in the Cognitive Science graduate program, and in the School of Speech-Language Pathology. Her current research focuses on atypical acquisition of French, and how it informs syntactic theory. Recent publications have reported on studies comparing acquisition in the contexts of SLI, deafness (oral language of the deaf as well as French sign language), and epilepsy. She may contacted at tuller@univ-tours.fr.

PART 1

First and second language acquisition

CHAPTER 1

Evolving perspectives on learning French as a second language through immersion

Roy Lyster
McGill University

Ce chapitre passe en revue la recherche empirique ayant contribué à modeler les perspectives changeantes de l'enseignement immersif depuis la mise en place des programmes d'immersion française à Montréal il y a plus de 40 ans déjà. La recherche montre que les élèves en immersion française atteignent des niveaux élevés d'aptitudes pour la compréhension et des niveaux fonctionnels en production, avec des lacunes sur les plans de la précision de l'expression, de l'expression idiomatique, de la variété lexicale et de l'adéquation sociolinguistique. Ces lacunes seront expliquées en termes de contraintes résultant d'une interaction des propriétés structurales des traits problématiques de la langue seconde tels que les verbes, les pronoms et le genre; de leur prégnance dans le discours en classe, et d'une diversité de facteurs internes et reliés à l'apprenant. S'appuyant sur les thèses mises de l'avant par Lyster (2007) portant sur l'enseignement et l'apprentissage des langues axés sur le contenu, ce chapitre soutient le point de vue selon lequel plusieurs des lacunes dans la compétence en langue seconde chez les élèves en immersion française pourraient être surmontées par un enseignement qui saurait intégrer plus systématiquement langue et contenu.

This chapter reviews empirical research that has helped to shape evolving perspectives of immersion education since the introduction of French immersion programs in Montreal more than 40 years ago. Research confirms that French immersion students attain high levels of comprehension abilities and functional levels of communicative ability in production, with shortcomings in accurate and idiomatic expression, lexical variety, and sociolinguistic appropriateness. Shortcomings will be explained in terms of processing constraints that result from an interaction among the structural properties of problematic target features such as verbs, pronouns, and gender; their degree of salience in classroom discourse; and a range of learner-internal factors. Following an argument developed by Lyster (2007) with respect to teaching and learning languages through content, the specific argument put forth in this chapter is that

many shortcomings in the second language proficiency of French immersion students could be overcome through instruction that is counterbalanced in a way that more systematically integrates language and content.

1. What is immersion?

Immersion is a form of bilingual education that provides students with a sheltered classroom environment in which they receive at least half of their subject-matter instruction through the medium of a language that they are learning as a second, foreign, heritage, or indigenous language. In addition, immersion students receive some instruction through the medium of a shared primary language, which normally has majority status in the community. In a prototypical immersion program, as outlined by Swain and Johnson (1997), students' exposure to the second language tends to be restricted to the classroom where it serves as a medium for subject-matter instruction, the content of which parallels the local curriculum. Immersion teachers are typically bilingual; students enter with similar (and limited) levels of second language proficiency; and the program aims for additive bilingualism. In addition, students in immersion classrooms usually share as their main language of communication a majority language that is used socially, administratively, and academically: socially with peers both inside and outside the school; administratively by the school to communicate with parents and even with students; and academically as a medium of instruction, increasingly so as students advance through higher grade levels.

More recently, Swain and Lapkin (2005) updated these prototypical features to reflect increasing changes in urban demographics whereby: (a) immersion students no longer necessarily share the same first language; and (b) the target language can no longer be accurately referred to as the second language for many students, who increasingly represent culturally diverse and multilingual school populations.

The term 'immersion' was first used in this way by Lambert and Tucker (1972) to describe their study of an "experiment" in bilingual education that began in 1965 on Montreal's south shore. English-speaking parents in St. Lambert, a suburb of Montreal in Quebec, Canada, were concerned that the traditional second language teaching methods that prevailed at the time would not enable their children to develop sufficient levels of proficiency in French to compete for jobs in a province where French was soon to be adopted as the sole official language. Parents had reservations about enrolling their children in schools for native speakers of French, and the latter were reluctant to admit large numbers of English-speaking children. Consequently, parents developed instead what came to be known as an early total immersion program. Lambert and Tucker's (1972) seminal study of this early immersion initiative examined two groups of English-speaking children who were taught exclusively through the medium of French in kindergarten and Grade 1 and then mainly in French (except for two half-hour daily periods of English language arts) in Grades 2, 3, and 4. The widely

disseminated results were positive with respect to the children's language development in both English and French, as well as their academic achievement and affective development. Other immersion programs spread quickly in the Montreal area, then across Canada and were modified in some contexts to include alternative entry points and variable proportions of first and second language instruction (Rebuffot 1993). French immersion programs are now typically classified according to the proportion of instruction through English relative to instruction through French, as well as the grade level at which the program begins.

In total French immersion, 100% of the curriculum is taught through French; the immersion is total for only two or three years, however, because some instruction in English is eventually introduced. In partial French immersion, a minimum of 50% of the curriculum is taught in French for one or more years (Genesee 1987, 2004). With respect to entry points, typical immersion programs tend to be classified according to three types. Early French immersion begins at kindergarten or Grade 1 (age 5 or 6) and normally involves, in the case of total immersion, the teaching of literacy skills first in French, followed by the introduction of instruction in English literacy in Grades 2 or 3. In the case of early partial immersion, literacy training tends to occur simultaneously in both French and English from Grade 1 on. Middle French immersion begins at Grades 4 or 5 (age 9 or 10) and late French immersion begins at Grades 6, 7, or 8 (age 11, 12, or 13). Middle and late immersion programs thus include students who are already schooled in English literacy and have usually been exposed to some instruction in French as a regular subject. In addition, post-secondary immersion programs provide sheltered classes for university students studying a subject such as psychology in French (Burger & Chrétien 2001; Burger, Wesche & Migneron 1997).

Good reasons abound in support of teaching additional languages through content rather than through traditional methods. In a nutshell, Snow, Met and Genesee (1989) argued that, whereas language development and cognitive development go hand-in-hand for young children, traditional methods tend to separate language development from general cognitive development. Typically, traditional methods isolate the target language from any substantive content except for the mechanical workings of the language itself, whereas content-based instruction aims to integrate language and cognitive development. Content-based instruction provides not only the cognitive basis for language learning, however, but also the requisite motivational basis for purposeful communication. Lightbown and Spada (2006) referred to content-based and immersion programs as the "two for one" approach, because learners in these programs learn subject matter and the target language at the same time, thus significantly increasing their exposure to the target language. More instructional time in a second or foreign language is otherwise difficult to allocate in a school curriculum already full to capacity.

2. Outcomes of immersion

Early evaluation studies of French immersion programs (Genesee 1987; Lambert & Tucker 1972; Swain & Lapkin 1982) yielded consistent and positive results with respect to first language development and academic achievement; these results have recently been substantiated by Turnbull, Lapkin and Hart (2001). The academic achievement of French immersion students in subjects they study in French is equivalent to that of non-immersion students studying the same subjects in English, and their English development ranges from equivalent to superior to that of non-immersion students. Similarly, Genesee (1992) found that students with learner characteristics that are disadvantageous with respect to academic and linguistic abilities demonstrate the same levels of first language development and academic achievement as similarly disadvantaged students in non-immersion programs (see Genesee [2006] for an overview of this research).

Research has clearly demonstrated that French immersion students, regardless of program type, develop much higher levels of proficiency in French than do non-immersion students studying French as a regular subject (i.e., for one period per school day). In comparison to non-immersion students, immersion students develop: (a) almost nativelike comprehension skills as measured by tests of listening and reading comprehension; and (b) high levels of fluency and confidence in using French, with production skills considered non-nativelike in terms of grammatical accuracy, lexical variety, and sociolinguistic appropriateness.

Harley, Cummins, Swain and Allen (1990) conducted a large-scale study of the French proficiency of immersion students, operationalizing proficiency in terms of grammatical, sociolinguistic, and discourse traits. In comparison to native speakers of French of the same age (i.e., 11–12 years old), immersion students performed as well on measures of discourse competence, but "were clearly less proficient on most grammar variables, and especially on verbs in the oral grammar test" (p. 16). They also performed significantly differently on all sociolinguistic measures. Specifically, immersion students used significantly fewer instances of singular *vous* and conditional verb forms to express politeness. With respect to strategic competence, prior research had confirmed that immersion students were highly successful at using communication strategies enabling them to get their message across through recourse to their first language and the use of gestures, general all-purpose terms, or circumlocutions (Harley 1984).

With respect to lexical variety, Harley (1992) documented a tendency for immersion students to use a restricted vocabulary limited to domains experienced in school, and to overuse simple high-coverage verbs at the expense of morphologically or syntactically complex verbs, such as pronominal and derived verbs. Allen, Swain, Harley and Cummins (1990) found generally that immersion students' first language significantly influenced their second language lexical proficiency. Other studies of the interlanguage

development of immersion students revealed non-targetlike uses of grammatical and sociolinguistic features that include, but are not limited to, the following:
- prepositions (Harley et al. 1990)
- object pronouns (Harley 1980)
- word order (Selinker, Swain & Dumas 1975)
- grammatical gender (Harley 1979, 1998; Lyster 2004a)
- features of the verb system such as the use of imperfective aspect, conditionals, and third-person agreement rules (Harley 1986)
- productive use of derivational morphology (Harley & King 1989)
- use of verbs with syntactic frames incongruent with the learner's first language (Harley 1992)
- singular *vous* and mitigating conditionals (Harley et al. 1990; Lyster 1994; Swain & Lapkin 1990)
- vernacular features and other informal variants (Mougeon & Rehner 2001; Rehner & Mougeon 1999)

What emerges from these studies is that French immersion students are second language speakers who are relatively fluent and effective communicators, but non-targetlike in terms of grammatical structure, and non-idiomatic in their lexical choices and pragmatic expression – in comparison to native speakers of the same age. Day and Shapson (1996) suggested, however, that "we may want to have different standards in certain areas of communicative competence than those attained by native-speakers of the language" (p. 98). They argued that immersion students have "no strong social incentive to develop further toward native-speaker norms" (p. 95) because of their success in communicating with one another and with the teacher.

Immersion students tend indeed to learn an academic register of the target language, without acquiring colloquial lexical variants that might otherwise facilitate more authentic communication among peers (Auger 2002; Tarone & Swain 1995). Tarone and Swain (1995) described immersion classrooms as diglossic settings in which the second language represents the superordinate or formal language style while the students' first language represents the subordinate or vernacular language style. As the need to use a vernacular becomes increasingly important to pre-adolescents and adolescents for communicating among themselves, they use their first language to do so because they are familiar with its vernacular variants. The second language remains the language of academic discourse and not for social interaction among peers. The influence of peers in French immersion classrooms is so strong that Caldas (2006, 2007) reported that children being raised bilingually (French/English) in Louisiana, with one or even two francophone parents at home, develop English accents and adopt English word order in their use of French as a result of their participation in French immersion. Not surprisingly, when French immersion students have the opportunity to interact with native speakers of French of the same age, for example on a school

exchange, they often encounter difficulties in making themselves understood (MacFarlane 2001; Warden, Lapkin, Swain & Hart 1995).

Social-psychological studies comparing immersion and non-immersion students demonstrated that immersion students develop additive bilingualism, as opposed to subtractive bilingualism; that is, their perceptions of their cultural identity and their sense of ethnic group membership are as positive as those of non-immersion students (Genesee 1987). These studies also revealed that, in comparison to non-immersion students, immersion students perceive less social distance between themselves and native speakers of French, and develop more positive attitudes towards French and its native speakers. However, this trend is short-lived, being more consistently documented with younger than with older students, and early in students' participation in the program but diminishing with each grade level.

Although many French immersion students in the Canadian context remain geographically remote from the target community, this is not the case in Montreal and Ottawa where studies have been able to compare immersion and non-immersion students with respect to second language use outside the classroom. In comparison to non-immersion students, immersion students in Montreal reported that they were: (a) more comfortable and confident when using French with native speakers; (b) more likely to respond in French when addressed in French; and (c) less likely to avoid situations in which French was spoken. However, immersion students were not more likely than non-immersion students to actively seek opportunities for exposure to French by watching television, listening to the radio, or reading books in French (Genesee 1987). Wesche (1993) found a similar type of "reactive use" of the immersion language among immersion graduates in the Ottawa area.

The French learned by students in French immersion has been criticized by some for lacking cultural relevance and social utility (e.g., Bibeau 1982; Singh 1986). Calvé (1986) argued that immersion education results in a linguistic code used more as a communication tool than as a language imbued with social relevance and steeped in cultural values. Lyster (1987) also questioned the social value of French immersion students' tendency for "speaking immersion" – a classroom code generally understood by classmates and their teacher – but argued that it was the result of ill-defined pedagogical strategies and inappropriate instructional materials designed for native speakers of the target language, rather than for second language learners. Also questioning the appropriateness of instructional materials used in French immersion classrooms, Auger (2002: 83; see also Nadasdi, Mougeon & Rehner 2005) reported anecdotally that immersion graduates living and working in the bilingual city of Montreal felt "frustration at trying to use, in real-life settings, the language that they had spent so many years learning in school," and, even with respect to receptive skills, "difficulty understanding what coworkers would say to them".

Genesee (1994: 5) described the productive skills of immersion students as "linguistically truncated, albeit functionally effective", but also stressed that immersion students' second language proficiency does not limit their academic development:

"The documented effectiveness of the immersion programs indicates that an approach in which second language instruction is integrated with academic instruction is an effective way to teach the language skills needed for educational purposes" (Genesee 1987: 176).

But would it also be possible for French immersion students to develop a wider range of skills to enable them to use French for social purposes, with some degree of communicative effectiveness, as well as for educational purposes? Such would be more in keeping with the overall objectives of Canadian and other immersion programs which, in addition to ensuring normal first language development and academic achievement, aim to develop functional competence in both speaking and writing the target language, as well as an understanding and appreciation of target language speakers and their culture (Genesee 1987; Met 1994; Rebuffot 1993).

The perspective adopted here and outlined in more detail in Lyster (2007) is that instructional practices designed to foster continued second language growth through immersion were initially formulated rather tentatively, and thus underlie the attested shortcomings that characterize French immersion students' proficiency in French. Specifically, initial conceptualizations of immersion pedagogy underestimated the extent to which the target language needed to be attended to, whereas there is now a growing consensus that second language learning and academic achievement are inextricably linked and thus share equal status in terms of educational objectives (Allen et al. 1990; Lyster 2007; Met 1994). If second language learning were not a primary goal of immersion programs, then it would be easier for children who already speak a majority language to engage with the school curriculum primarily through that language. To justify the extra effort required of all stakeholders associated with programs promoting curricular instruction in more than one language, including teachers and students alike, learning the additional language needs to be a primary objective.

3. Incidental focus on form

In their observation study of French immersion classrooms, Swain and Carroll (1987: 191) noted an important paradox: "Although one goal of immersion is to learn language through learning content, a general observation about the classes is that form and function are kept surprisingly distinct". They found that it was relatively rare for teachers: (a) to refer during content-based lessons to what had been presented in a grammar lesson; and (b) to set up content-based activities specifically to focus on form related to meaning. The observed tendency for French immersion teachers to avoid language issues during subject-matter instruction and instead to wait for French language arts classes to address language structure in relatively traditional ways may be the result of equivocal messages about the nature of language instruction in immersion.

'Incidental' is a word that was initially attributed to the process of both teaching and learning language through content (e.g., Genesee 1987; Snow 1987; Swain &

Lapkin 1982; more recently, see Long 2007), usually with a disclaimer, however, that 'incidental' is neither tantamount to 'haphazard' (Snow 1987), nor at odds with systematicity (Genesee 1987). Yet, it remains unclear how an incidental approach to language instruction can, at the same time, be systematic. Incidental learning is generally defined as learning without the intent to learn (or the learning of one thing when the learner's primary objective is to do something else; see Schmidt 1994). Incidental language instruction is encapsulated by Long's (1991) notion of "focus on form" in which teachers, while teaching content other than language itself (e.g., biology, mathematics, geography), "overtly draw students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning" (p. 46). This section aims to illustrate that much incidental attention to language is too brief and likely too perfunctory to convey sufficient information about certain grammatical subsystems and thus, in those cases, can be considered neither systematic nor apt to make the most of content-based instruction as a means for teaching language.

Incidental attention drawn to language during subject-matter instruction is insufficient because, without having their attention drawn more systematically to the target language, the cognitive predispositions of predominantly English-speaking learners of French interact with classroom input in ways that restrict the incidental assimilation of specific target features and grammatical subsystems. This section illustrates how content-based instruction, either on its own or in conjunction with incidental reference to language, falls short of facilitating entry into three important grammatical subsystems in French: the verbal system, pronominal reference, and gender attribution.

There exists at least one systematic proposal for identifying problematic features of any target language taught primarily through subject-matter instruction. Harley (1993) identified the following classes of target features as problem areas that require explicit attention in content-based classrooms:

- features that differ in non-obvious or unexpected ways from the first language;
- features that are irregular, infrequent, or otherwise lacking in perceptual salience in the second language input;
- features that do not carry a heavy communicative load.

In this view, the persistent difficulties experienced by French immersion students in their acquisition of various aspects of the verbal system, pronominal reference, and gender attribution result from an interaction among: (a) the incongruence of these subsystems with students' first language; (b) their lack of prominence in the discourse of subject-matter instruction, and (c) their redundancy in communicative interaction. With respect to redundancy, for example, Ellis (1986: 95) argued that "it is not efficient to operate a system in which two forms have total identity of function", and that "unless alternative forms can be justified by allocating them to different functions, redundant forms will be eliminated from the interlanguage". From the perspective of second language learners of French, therefore, imperfective verb forms might appear redundant relative to perfective verb forms, plural second-person pronouns might appear

redundant relative to singular forms, and feminine determiners might appear redundant relative to masculine forms. Important to appreciate is that some features require instruction more than others and, in fact, many target features do not necessarily require any instructional emphasis at all because they can be easily acquired through exposure to content-based instruction. For example, phonologically salient and high-frequency lexical items with syntactic patterns congruent with a learner's first language are known to be acquired with relative ease through rich exposure to content instruction (Harley 1994). That not all target features are equally easy or difficult to acquire results from a complex interaction of their structural properties and occurrence in classroom input with a learner's own developing system of linguistic representations and cognitive processing (Long 1996). To identify problem areas, some degree of interlanguage analysis is necessary, as was the case for the features outlined forthwith.

3.1 Verbs

Imagine a Grade 6 class of students listening to their teacher initiate the following discussion in their second language about life in eighteenth-century Antilles:

> How do you think these plantations … are going … to change … life in the Antilles? […] These people are going to sell their sugar, rum, molasses, brown sugar. They are going to make money. With the money, they are going to buy clothes, furniture, horses, carriages … all they want and they are going to bring them back to the Antilles (Swain 1996: 533).

Even though this is a history lesson about events that took place more than 200 years ago, the teacher uses the immediate future tense to convey her message. Swain (1996: 533) described the teacher's choice of tense as

> superb from a content teaching point of view… Its use has brought the distant past into the lives of the children, got them involved, and undoubtedly helped them to understand the social and economic principle that this historical unit was intended to demonstrate. However, as a language lesson modeling past tense usage, it was less than a success.

Because the verb system is a "centrally important area of the structure of a language which is likely to be a major hurdle for learners of any age" (Harley 1986: 59), leaving it to chance, as opportunities arise (or not) during content-based instruction, is likely to have detrimental effects on second language development. Early French immersion students are indeed known to have trouble with verbs even after several years in the program. In the context of French immersion, research has documented difficulties that students experience in using the verb system to express aspectual distinctions, hypothetical modality, and directional motion.

One of most persistent problems for learners of French as a second language is the distinction between perfective and imperfective past tenses (*passé composé* and

imparfait, respectively; see Ayoun 2001, 2004, 2005; Izquierdo 2007). The functional distinctions between these two tenses are especially challenging for anglophone learners of French, because the form/meaning mappings of these tenses are not clear-cut across French and English. As Spada, Lightbown and White (2005) argued, target features in which there is a misleading similarity between the first and second language for expressing the same meaning are prime targets for explicit instruction, because such features are those that second language learners "are most likely to have long term difficulty acquiring through communicative interaction" (p. 201). Research has indeed shown that even advanced immersion students continue to use perfective and imperfective tenses in non-nativelike ways, over-using the *passé composé* with action verbs and under-using the *imparfait* to refer to habitual past actions (Harley 1992). In addition to the challenging effects of lexical aspect and first language influence on their acquisition of tense-aspect marking in their second language, immersion students are confronted with temporal distinctions that are difficult in some contexts for learners to notice in oral input. For example, whereas the written forms of *j'ai mangé* and *je mangeais* are clearly distinguishable, their oral forms in some spoken varieties of French are not.

With respect to modality, research has shown that French immersion students' ability to understand the hypothetical meaning of conditionals far exceeds their ability to correctly produce conditionals (e.g., Harley & Swain 1984). The causes of students' shortcomings in production are at least three-fold. First, the conditional in French is derivative and dependent on verbal inflections that are morphologically more complex than the English conditional, which consists of the modal verb 'would' followed by a simple verb stem. Second, learners can easily avoid the conditional and still express hypothetical meaning without causing much misunderstanding. For example, when the need arises to express the notion of uncertain possibility in the future, learners who are unable to produce conditionals can resort to simpler means of expression, by opting for the *futur simple* or even the *futur proche* in conjunction with invariable adverbs such as *probablement* and *peut-être* to add modal value (Harley 1992). A third factor is low frequency in classroom discourse.

With respect to the range of verb tenses in teacher talk, Harley, Allen, Cummins and Swain (1987) reported the findings of more than 28 hours of observations of 19 French immersion teachers in the province of Ontario in the 1980s. They found that 75% of all verbs used were restricted to the present tense or imperative forms, whereas only 15% were in the past tense, 6% were in the future tense, and 3% were in the conditional mood. Table 1 (from Lyster 2007: 33) compares these results with those of Izquierdo (2007) who found in his analysis of six French immersion teachers observed for 28 hours in Montreal schools in the 1990s that the percentage distribution of verbs they used was identical to Harley et al.'s (1987) findings. This comparison confirms that the range of grammatical forms available in content-based input is limited, even over time and across geographic settings, and goes a long way in explaining gaps in students' second language development, especially their limited use of conditional forms and their inaccurate use of past tense forms.

Table 1. Percentage distribution of verb tenses used by immersion teachers

	Ontario	**Québec**
Present/imperative	75	74
Past	15	14
Future	6	8
Conditional	3	3
Other	1	1
Total	100%	100%

Note: Ontario: 28.5 hrs; 19 teachers; Grades 3/6
Québec: 28 hrs; 6 teachers; Grades 4–6

Another challenging feature of verbs for French immersion students concerns lexical choices and the syntactic frames of verbs that express motion and directionality, as documented by Harley (1992) and Harley and King (1989). Whereas English verbs of motion tend to combine motion with manner, French verbs of motion combine motion with direction. Prepositions are thus commonly used in English to express directionality (e.g., He came *down* the stairs) while in French, the notion of direction is contained in the verb (*Il a descendu l'escalier*). Influenced by English, French immersion students, in comparison to native speakers, use substantially fewer high-frequency directional motion verbs, such as *arriver* 'arrive', *descendre* 'go down', *monter* 'go up', *partir* 'leave', *passer* 'go by', *redescendre* 'go back down', *rentrer* 'go back home/go in', and *sortir* 'go out'. The result is not necessarily erroneous syntax but does reveal clear differences from native norms. Immersion students show a clear preference for verbs whose syntactic frames are more similar to verbs in English, using most frequently the high-coverage verbs *aller* 'go' and *venir* 'come', but with prepositions that parallel English usage, resulting in phrases like *elle est allée dans la maison* instead of the more native-like *elle est rentrée* (Harley & King 1989).

3.2 Pronouns

Personal pronouns are an essential part of any language. First- and second-person pronouns serve respectively to identify the speaker and listener(s) in any given speech situation, whereas third-person pronouns provide efficient and cohesive ways of referring to anyone or anything not involved as speaker or listener. In French, in addition to making these distinctions in person, most personal pronouns make distinctions in number, some make distinctions in gender, and others imply differences in status. At an early stage, from exposure alone, French immersion students are able to sort out basic subject pronouns, learning initially at least one subject pronoun for each person (Harley 1980). Third-person subject pronouns, however, present a learning problem, in both number and gender, while third-person object pronouns present an even

greater challenge. With respect to second-person pronouns in French, the choice of appropriate forms – even though at first glance this finding might seem surprising – continues to be a significant source of confusion for students. The development of an accurate system of second-person reference is not a straightforward process for young anglophone learners of French in early immersion classrooms (Lyster & Rebuffot 2002; Swain & Lapkin 1990) nor for older learners of French (see Dewaele 2007).

Lyster and Rebuffot's (2002) discourse analysis of classroom input showed that, in addition to serving as a second-person pronoun of address to mark singular and familiar reference, *tu* indicates indefinite reference and even plural reference in discourse contexts where a teacher's need to express intimacy or solidarity with young children competes with the need to express plurality. Although infrequent in the linguistic environment, a teacher's use of *tu* forms with seemingly plural referents seems to provide sufficient positive evidence to young learners that *tu* can serve as an all-encompassing second-person pronoun. In the absence of negative evidence, young learners are induced to over-generalize the functions of *tu* because it corresponds precisely with their cognitive predisposition for selectively attending to only one second-person pronoun that is equivalent to *you*. This kind of split, where a single form in the first language is manifest as two or more in the target language, is often considered a prime source of difficulty for language learners who, for the sake of economy, may adopt one form at the expense of the other (Ellis 1986). Moreover, interlanguage forms that develop as a result of both first language influence and ambiguous input are especially recalcitrant in homogeneous classrooms where learners share the same first language (Lightbown 1992). The result is "sociolectal reduction" whereby the social connotations associated with *vous* are lost but the notional meaning underlying second-person pronominal reference is still evoked, "since the speaker is left with at least one variant to express whatever notional meaning the formal and informal variants convey" (Mougeon & Beniak 1991: 223).

Swain and Carroll (1987) found that immersion teachers' use of singular *vous* as a politeness marker was almost completely absent from classroom discourse, whereas plural *vous* was indeed available in the input and used equally often as singular *tu*. The absence of singular *vous* in the teachers' input helps to explain its absence from immersion students' sociolinguistic repertoire (Swain & Lapkin 1990). Once more these descriptive findings of immersion teacher input in Ontario schools in the 1980s were substantiated by a follow-up study in Montreal schools in the 1990s. Table 2 (from Lyster 2007: 35) presents a comparison of Barret's (2000) findings in Montreal and those of Swain and Carroll (1987) in Ontario with respect to singular, plural, and generic uses of *tu* and *vous* by immersion teachers. The almost identical distributions across time and space suggest yet again functional constraints as well as inflexibility in the use of classroom language, even when it is for subject-matter instruction.

Table 2. Percentage distribution of *tu* and *vous* used by immersion teachers

	Ontario	Québec
Tu-singular	46.0	52.0
Tu-plural	3.7	2.4
Tu-generic	3.0	1.2
Vous-singular	0.9	0.3
Vous-plural	44.5	43.8
Vous-generic	1.9	0.3
Total	100%	100%

Note: Ontario: 15 hrs; 10 teachers; Grade 6
Québec: 6.5 hrs; 6 teachers; Grades 4–6

Moreover, attention drawn only incidentally to sociostylistic variation has proven insufficient for developing sociolinguistic competence and pragmatic awareness in classroom settings (see Kasper 2001; Schmidt 1993; Warga 2007). Incidental teacher remarks specifically about second-person reference are not only insufficient to help students clarify and consolidate their already precarious knowledge of this important distinction, but may even be misleading. For example, a teacher observed by Salomone (1992a: 34) remarked incidentally to her students: "*Que voyez-vous? Que vois-tu?* On peut dire les deux." *Tu* and *vous*, however, are not interchangeable forms, being instead constrained by both grammatical and social contexts.

3.3 Gender

A puzzling and extreme example of the difference between first and second language acquisition is evident in the seemingly effortless and flawless acquisition of grammatical gender by native speakers of French on the one hand, and the notoriously difficult and often incomplete acquisition of this same grammatical subsystem by many second language learners of French on the other. Karmiloff-Smith (1979: 167) reported that, by the age of 3–4 years old, French-speaking children develop "a very powerful, implicit system" for accurate gender attribution. In contrast, Tucker, Lambert and Rigault (1977: 11) remarked that "the necessity to master grammatical gender may be the single most frustrating and difficult part of the study of French as a second language." Even after many years of classroom exposure to French, immersion students fall short of using grammatical gender with much accuracy (e.g., Harley 1979, 1998). Lyster (2006) reported that immersion students were about three times more likely to accurately assign masculine gender than to accurately assign feminine gender. Carroll (1989: 575) observed that "English-speaking children in immersion programs have problems producing gender markers not only in spontaneous production but also in

controlled experimental situations. They do not appear to have anything resembling native competence".

Grammatical gender markers are not salient in classroom discourse, in spite of their frequency, nor do they convey, in the case of inanimate nouns, any semantic distinctions (see Ayoun 2007). Moreover, grammatical gender does not exist in English. Carroll (1989) proposed that native speakers of French acquire and process determiners and nouns as co-indexed chunks, whereas anglophone learners of French acquire and process determiners and nouns as distinct syntactic words and independent phonological units. Influenced by the many French grammarians who claim grammatical gender is arbitrary and unsystematic in the case of inanimate nouns (e.g., Bérard & Lavenne 1991; Bosquart 1998; Jacob & Laurin 1994), teachers encourage students to learn gender attribution on an item-by-item basis, and often do so through incidental reminders. When asked by students why the French word *planche* is feminine, a teacher observed by Salomone (1992b: 101–102) responded, "There isn't any explanation. It's feminine and it's *une.* There's no trick. You just have to learn it like that". Again, however, this incidental remark conveys misleading information, because there exists considerable evidence that gender attribution is largely rule-driven and based on word-internal structural properties. That is, contrary to assertions put forth in most French grammar books, Tucker et al. (1977) found that grammatical gender entails a rule-governed subsystem, in which "distinctive characteristics of a noun's ending and its grammatical gender are systematically related" (p. 64). Lyster (2006) corroborated this finding in his analysis of nearly 10,000 nouns in *Le Robert Junior Illustré.* Operationalizing noun endings as orthographic representations of rhymes, which consist of either a vowel sound (i.e., a nucleus) in the case vocalic endings or a vowel-plus-consonant blend (i.e., a nucleus and a coda) in the case of consonantal endings, Lyster classified noun endings as reliably masculine, reliably feminine, or ambiguous, by considering as reliable predictors of grammatical gender any noun ending that predicted the gender of least 90% of all nouns in the corpus with that ending. Results revealed that 81% of all feminine nouns and 80% of all masculine nouns in the corpus proved to be rule governed, having endings whose orthographic representations systematically predict their gender. Gender attribution in French is a good example of a grammatical subsystem in need of a systematically derived pedagogical grammar to counter the unhelpful information available in traditional grammars. Moreover, gender attribution is a quintessential example of a grammatical subsystem that cannot be learned incidentally by second language learners through exposure to content-based instruction.

4. Form-focused instruction

Immersion education exemplifies instructional settings where focus on meaningful content leads to the development of overall communicative ability, but with linguistic gaps in terms of accuracy. A great deal of research into the effects of form-focused

instruction, therefore, has been undertaken in the context of immersion classrooms (for reviews see Lyster 2004b, 2007; Swain 2000). Form-focused instruction refers to:

> any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly. This can include the direct teaching of language (e.g., through grammatical rules) and/or reactions to learners' errors (e.g., corrective feedback). (Spada 1997: 73)

According to Ellis (2001: 12), current research conceptualizes form-focused instruction "as a set of psycholinguistically motivated pedagogic options". Form-focused instructional options are generally considered most effective when implemented in communicative contexts, to ensure that learners will be able to transfer what they learn in the classroom to communicative interaction outside the classroom. Nonetheless, the extent to which form-focused instruction must be integrated into communicative activities is still open to debate (e.g., Ellis 2002; Lightbown 1998; Spada & Lightbown 2008). Also open to further inquiry are the differential effects of form-focused instructional options that vary in degrees of explicitness, as well as the types of language features that can most benefit from form-focused instruction (see Doughty & Williams 1998; Ellis 2001; Lightbown & Spada 2006; Long & Robinson 1998; Norris & Ortega 2000; Spada 1997).

The effects of form-focused instruction have been assessed in a set of immersion classroom intervention studies targeting some of the grammatical subsystems identified previously as sources of ongoing difficulty in French (i.e., verbs, pronouns, gender). The studies were conducted by Harley (1989, 1998), Day and Shapson (1991), Lyster (1994, 2004a), and Wright (1996) across various grade levels (2, 4, 5, 6, 7, 8) in urban schools in or near the cities of Vancouver, Toronto, and Montreal. The six studies spanned a period of 15 years from 1989 to 2004, and involved over 1,200 students in 52 French immersion classrooms. Each study involved an intervention with a quasi-experimental design, enabling comparisons of at least two different groups of students: an experimental group exposed to a special form-focused instructional treatment and a comparison group exposed to only its regular immersion program. The instructional treatments in these studies drew, in varying degrees, on elements from cognitive theory to emphasize: (a) noticing and language awareness activities to enable learners to restructure interlanguage representations; and (b) practice activities to enable learners to proceduralize more target-like representations. Pre-tests were given to all students in both experimental and comparison groups just prior to the pedagogical treatments, and then the form-focused instruction was administered only to students in the experimental groups for roughly 10 to 12 hours distributed over an average of 5 to 6 weeks. At the end of the instructional period, immediate post-tests were administered to all students. Then, several weeks later, delayed post-tests were administered to all students to assess the extent to which they maintained over time what they had learned.

Harley (1989) conducted a study in Grade 6 to determine the effects of form-focused instruction on students' use of perfective and imperfective past tenses in French. Students began by reading a traditional legend about were-wolves, which had been

enhanced in the sense that past tense forms occurred frequently and the functional distinctions between the two tenses were made salient by the narrative. Then students were asked to identify the two different past tenses in the text and, based on the narrative, to infer the different functions of each tense. In yet another activity, students were asked to compare several pairs of pictures, the first depicting a completed action and the second depicting an incomplete action, labelled appropriately (e.g., *Le pilote déployait son parachute* vs. *Le pilote a déployé son parachute*). Students were then asked to create and illustrate their own sentences to contrast completed and incomplete actions, labelling them appropriately. A pivotal activity involved the creation of childhood albums, which required students to describe various childhood memories, both orally and in writing along with authentic photographs, depicting either specific and completed actions or ongoing and incomplete actions in the past. Games were played as well, creating opportunities for students to practice using the imperfective past tense in appropriate contexts. For example, one student mimed an action to the whole class while another was out of the classroom. The student returning to the classroom was then asked by classmates to guess what the other student was miming (i.e., *Qu'est-ce qu'il faisait quand tu as frappé à la porte?* 'what was he doing when you knocked on the door'), thus creating an obligatory context for use of the *imparfait* (e.g., *est-ce qu'il se brossait les dents?* 'was he brushing his teeth', etc.).

Day and Shapson (1991) conducted an intervention study with students in Grade 7 to test the effects of form-focused instruction on the use of the conditional mood in French. The thematic context of the treatment materials involved the planning of an imaginary space colony. The context was presented to students first via a headline appearing in a newspaper from the future: "The problem of over-population is getting worse! Some courageous pioneers are going to have to leave to establish a colony in space." Students were asked to play the role of ecologists invited by CANADESPACE to design a space station that would recreate a natural environment where 1000 space pioneers would be able to settle. This provided students with contexts for using the conditional to express possible yet uncertain outcomes in the future. In groups of four, students had to make a model of their plan and then present an oral report to the class to describe and justify their plan. They then had to prepare a written report explaining each part of the colony and its importance, as well as a newspaper article describing what life would be like for the space pioneers. Another important feature of the unit was that every lesson began with a language game or exercise that served to reinforce the functions of the conditional. In one game, to practice using (and not using) conditionals as politeness markers, students created then role-played situations in which requests were made first by an "authoritarian" person, then by a courteous person. In another game, the teacher gave competing teams 10 minutes to generate as many hypothetical outcomes as possible to complete a set of clauses expressing a condition of the type "If I had a million dollars…." The teacher then chose one of the clauses at random and asked teams to complete it in as many ways as possible in 30 seconds. In yet another game, students had to choose the correct hypothetical outcome in a series

of experiments, which they could feasibly try out at home, and then discuss reasons for their choice.

Wright (1996) conducted a classroom intervention study with her Grade 4/5 immersion students to assess the effects of instruction on their use of verbs of motion in French (*amener*, *attraper*, *descendre*, *s'enfuir*, *entrer*, *filer*, *grimper*, *monter*, *passer*, *poursuivre*, *sortir*, *traverser*). The teacher read aloud to students a series of short books each replete with target verbs. After each book, the teacher explicitly drew students' attention to the target verbs by means of a chart and initiated discussion of their precise meanings and possible occurrence with prepositions. The teacher also pointed out to students their tendency to use a high-coverage verb plus a prepositional phrase rather than one of the target verbs. After writing on the blackboard what students typically say (e.g., *Il va en bas de la colline*), the teacher elicited from students the more target-like use of '*Il descend la colline*'. In addition to various follow-up exercises and in order to create a more meaningful context for students to notice the target verbs, a game was played during several physical education lessons in which students adopted the roles of predators and prey. Explanations of the role of the animals and the rules of the game were replete with target verbs, which were subsequently put to use during the students' discussion of their strategies for survival.

Lyster (1994) examined the effect of form-focused instruction on the sociolinguistic competence of immersion students in Grade 8, focusing specifically on their use of second-person pronouns in formal and informal contexts. The instructional materials consisted of noticing activities that required students to classify utterances as either formal or informal. The awareness tasks then required them to contrast the language items that actually make utterances either formal or informal. Students were first asked to notice these contrasts in English. Various ways of greeting and leave-taking, as well as introducing people, were then presented in French, and students were asked to identify, with justification, the level of formality of each utterance. In addition, students compared formal and informal versions of letters and invitations to identify stylistically appropriate target language features. Activities were also designed around dialogues extracted from a novel that required students to notice and then explain differences in second-person pronominal reference. In addition, students were asked to reflect on the way they themselves use second-person pronouns with their current and past immersion teachers, and to imagine, if they were francophone, how they would address their friends' parents and other teachers in the school. Practice activities were implemented that required students to give directions using appropriate pronouns in various role plays. For example, students played a game in pairs using a map of Quebec City in which they exchanged status roles in a range of formal and informal settings. Each student began with five tokens, and had to give to his or her partner directions appropriate to the context. If a student used *tu* in a formal context or *vous* in an informal context, and his or her partner caught the error, the student had to concede a token.

The prospect of providing young second language learners of French with opportunities to induce rules to help them predict the grammatical gender of large groups of

nouns with similar endings motivated two quasi-experimental studies. In Harley's (1998) study with Grade 2 immersion students, noticing activities required students to attend to the co-occurrence of nouns with gender-specific articles on identification labels displayed around the classroom. Several listening activities were designed to provide students with opportunities to listen for articles and noun endings. For example, in games such as 'Simon Says' students stood up or touched their toes when they heard nouns with masculine endings and squatted or touched their head when they heard feminine endings. Students were read a Halloween story and, on the second reading, were asked to listen for and identify masculine and feminine words. Similarly, while listening to a recorded song, they were asked to listen for words with a particular ending. Crossword puzzles and word searches provided further opportunities for students to notice target nouns with characteristic masculine or feminine endings. Awareness activities required students each to create their own gender-specific dictionary, to which they added new target vocabulary from each week's activities. They also completed various exercises requiring them to match rhyming words to which they then assigned gender-specific determiners. A game of 'Concentration' was created so that students had to match pictures of nouns that had same-sounding endings. For further practice in associating nouns with grammatical gender, the game 'I Spy' was played so that the student giving the clues had to say whether the word was masculine or feminine. In addition, opportunities for production practice occurred during songs, riddles, and games. For example, to play 'My Aunt's Suitcase' each student in turn added an item to a memorized list of things packed in the aunt's suitcase; items could be all masculine, all feminine, or all with a certain ending. To win at 'Bingo' students had to name the objects, using correct gender, in the winning row or column they had filled. In a board game called 'The Race', a student landing on a square had to choose a picture card and name the object along with the correct gender-specific article.

Also focusing on grammatical gender, Lyster (2004a) conducted a classroom study with students in Grade 5. The form-focused instructional activities were embedded in the children's regular curriculum materials, which integrated language arts, history, and science into monthly dossiers. To accompany the dossier for the month of February, the research team created a student workbook that contained simplified versions of texts found in the regular curriculum materials, in which noticing activities were embedded for the purpose of drawing students' attention to noun endings as predictors of grammatical gender. The endings of target nouns had been highlighted in bold and students were asked to fill in the missing definite or indefinite article before each noun. Students then had to classify target nouns according to their endings and to indicate whether nouns with these endings were masculine or feminine. This format was repeated with texts about the founding of Quebec City, Montreal, and Trois-Rivières, and yet again in a True/False exercise about the founding of all three colonies. Students were then given a list of new nouns, which had not appeared in any previous exercises, and were asked to indicate the grammatical gender of each, by adding the right article, based on what they had noticed in previous activities, and then to suggest rules for

determining the gender of these nouns. Similar exercises ensued, so there was considerable repetitiveness inherent in these activities although they were always related to the students' subject-matter instruction. In addition, students were also exposed to songs and rhyming verses to draw their attention to noun endings and the role they play in gender attribution. To help students create their own rhyming verses, a set of laminated posters, one for each targeted noun ending and each listing many high-frequency nouns with that particular ending, had been placed around each classroom to serve as a quick reference for students throughout the instructional unit. Teachers were provided with scores of riddles on flash cards, eliciting target words either from the students' curriculum or other high-frequency lexical items, to use at any time throughout the treatment as a whole-class or small-group activity. For example, the riddle "*Je divise la propriété de deux voisins. Que suis-je?*" ('I divide the property of two neighbors. What am I?') elicited the response *"une clôture"* ('a fence'), which needed to include the correct determiner in order to be accepted. In addition, the teachers provided feedback to further increase their students' awareness of gender attribution in their oral production.

In terms of learning outcomes, these six classroom experiments yielded different results, as summarized below:

- In Harley's (1989) study targeting two forms of the past tense, immediate posttest results revealed benefits on a cloze test and an oral task for the experimental group, but no significant differences on written production. No significant differences were found between the groups on any of the measures on a delayed post-test three months later.
- In Day and Shapson's (1991) study targeting the conditional mood, the experimental group demonstrated significant gains at the time of immediate post-testing on a cloze test and a written composition, but not in oral production. Students maintained the significant gains on the composition and cloze test at the time of delayed post-testing 11 weeks later, but again showed no gains in oral production.
- In Wright's (1996) study targeting verbs of motion, students exposed to the form-focused instruction improved significantly in their use of the target verbs in both oral and written production, relative to comparison classes, in both the short- and long-term.
- In Lyster's (1994) study targeting second-person pronouns, test results showed significant improvement, both in the short and long-term, in students' ability to accurately use second-person pronouns in formal contexts in both written and oral production tasks. Their overall awareness of sociolinguistic appropriateness, as demonstrated by their performance on multiple-choice tests, also improved significantly over time.
- Harley's (1998) study targeting the acquisition of grammatical gender by immersion students in Grade 2 revealed significant long-term progress for students exposed to form-focused instruction, as demonstrated by three of the four measures (two listening tasks and an oral picture description task). The only measure that

did not reveal significant improvement was an oral task requiring students to identify the gender of low-frequency unfamiliar nouns.

– As a result of form-focused instruction targeting grammatical gender at the Grade 5 level, the treatment groups in Lyster's (2004a) study demonstrated significant long-term improvement at the time of delayed post-testing on both written measures and one of two oral measures; they had nonetheless shown short-term improvement on the other oral measure at the time of immediate post-testing.

To summarize, the instructional treatment targeting two forms of the past tense in Harley's (1989) study yielded short-term improvement on two of the three measures, but no long-term significant improvement on any measures. Form-focused instruction on the conditional mood in Day and Shapson's (1991) study yielded short- and long-term significant improvement in written production, but none in oral production. In contrast, the studies targeting verbs of motion (Wright 1996), second-person pronouns (Lyster 1994), and grammatical gender (Harley 1998; Lyster 2004a) generally yielded more positive short- and long-term results. How can these variable learning outcomes be best explained? One likely explanation is that the selected target features, which stem from such different linguistic domains, resulted in variable outcomes. That is, the functional distinctions expressed by perfective and imperfective past tenses, as well as the hypothetical meanings expressed by the conditional mood, are arguably more complex than the lexical focus on verbs of motion or the ostensibly binary distinctions apparent in grammatical gender and second-person pronouns. However, the appropriate choice of second-person pronouns is not simply binary when we factor in the complexity of social variables that learners need to take into account and the effects of pronoun choice on morphosyntax within and across sentences. Similarly, although gender attribution might seem on the surface to entail simple binary choices, it involves multiple computations in production that affect morphosyntax within and across sentences and that result from quick and discriminating access to numerous associative patterns stored in long-term memory. Notwithstanding the probability that target forms from different linguistic domains are more or less amenable to form-focused instruction (see Schwartz 1993; Spada 1997; Williams & Evans 1998), an argument is made in the next section that the different learning outcomes yielded by these studies are the result of different emphases in the instructional treatments.

5. Counterbalanced instruction

Lyster (2004a, 2007) argued that the differences in learning outcomes across the six immersion classroom studies described in the preceding section were affected by the importance attributed to noticing and awareness activities, as well as by the extent to which practice activities were more controlled than communicative. For example, in the two studies targeting verb tenses, the emphasis on negotiation for meaning along

with intrinsically motivating content-based activities arguably did not push students to notice and to use the target verb forms more accurately. That is, the main thematic activities in these studies – the creation of childhood albums and the design of futuristic space colonies – may not have created contexts that were sufficiently different from other immersion activities. By focusing students on meaningful interaction and motivating content, the instructional units may not have drawn learners' attention to linguistic accuracy any more than is typically the case and, moreover, fell short of pushing students to actually use the target forms in oral production. Day and Shapson (1991), for example, observed a tendency during oral tasks for students to use the present tense as they interacted together in groups, avoiding the conditional and thereby decreasing their use of conditionals in a meaningful context. As Ellis (2000: 213) argued, "it cannot be assumed that achieving communicative effectiveness in the performance of a task will set up the interactive conditions that promote second language acquisition". In achieving fluency by ignoring accuracy or by concentrating on a narrow repertoire of language, learners do not necessarily extend and refine their interlanguage system (Bygate 1999; Ellis 2000).

In addition, the instructional treatment in Day and Shapson's study arguably overemphasized communicative production practice at the expense of noticing and awareness activities. In contrast, of considerable importance in the treatments targeting verbs of motion, second-person pronouns and gender were the noticing tasks accentuating the salience of target forms through typographical enhancement and increased frequency, followed by awareness tasks that drew students' attention to contrasts between French and English (Lyster 1994), contrasts between interlanguage and target language forms (Wright 1996), and word-internal structural patterns (Harley 1998; Lyster 2004a). Moreover, the production activities in these four studies were limited to role-plays, games, riddles, rhymes, and songs, giving more emphasis to controlled practice than to communicative practice. The games and riddles in Harley's (1998) and Lyster's (2004a) studies, for example, required students to produce target nouns and their gender-specific articles as lexicalized chunks.

Production practice that was more form-focused than meaning-focused was likely more effective across these six studies because of the selected areas of difficulty, all of which were well-known sources of persistent error. Continued opportunities for the same type of meaning-oriented interaction so characteristic of immersion classroom discourse is unlikely to change students' use of easily accessible and recalcitrant interlanguage forms (Ranta & Lyster 2007).

In contrast, controlled production activities with role plays and games, in tandem with greater emphasis on noticing and awareness tasks designed to draw attention to the formal properties of target forms, led to more robust change. Arguably, the significant improvement resulted from form-focused activities that distinguished themselves from other instructional activities going on at the same time in other parts of the immersion curriculum and, thus, required a shift in attention from meaning to form.

With respect to language features that have reached a developmental plateau, therefore, the effectiveness of instructional interventions may depend on the extent to which they are *different* from the classroom's overall communicative orientation, as long as the principles of transfer-appropriate learning are not violated. As posited by the theory of transfer-appropriate learning, "the expression of previous learning will be successful to the extent that the learners' psychological state existing at the time of learning matches that required at the time of expression" (Segalowitz 1997: 105; see also Lightbown 2008). In other words, the kind of cognitive processing that occurs while performing learning tasks should ideally resemble the kind of processing involved during communicative language use. Not predicted to yield similarly positive results, therefore, are sudden injections of decontextualized grammar instruction, because of its non-integrated approach which engenders and sustains a disjunction between the processing required for encoding at the time of learning and the processing required for retrieval during communication.

Drawing on the observation that instructional intervention that differs from a classroom's regular instructional routine can effectively alter the use of recalcitrant interlanguage forms, Lyster and Mori (2006: 294) proposed the *counterbalance hypothesis*:

> Instructional activities and interactional feedback that act as a counterbalance to the predominant communicative orientation of a given classroom setting will be more facilitative of interlanguage restructuring than instructional activities and interactional feedback that are congruent with the predominant communicative orientation.

The counterbalance hypothesis predicts that interlanguage restructuring is triggered by instructional interventions that orient learners in the opposite direction to which their target language learning environment has accustomed them. The counterbalance hypothesis is predicated on Skehan's (1998: 171–172) argument for pushing learners who are either form-oriented or meaning-oriented in the opposite direction in order to strike a balance between the two orientations:

> In the case of analytic learners, the intention is to build in a greater concern for fluency and the capacity to express meanings in real time without becoming excessively concerned with a focus on form. … In the case of memory-oriented learners, the intention is to set limits to the natural tendency to prioritize communicative outcome above all else.

Lyster and Mori (2006) extended Skehan's argument beyond the level of individual learners to account for groups of learners whose learning styles and expectations have been shaped to a large extent by the overall communicative orientation of their classroom setting. In the case of learners in immersion classrooms, the destabilization of interlanguage forms is hypothesized to result from instruction that requires them to vary their attentional focus between the content to which they usually attend in classroom discourse and target language features that are not otherwise attended to. The effort extended to shift

attention between form and meaning in this way, and to maintain a recursive interplay, is expected to strengthen connections in memory and, thus, to facilitate access to newly analyzed or reanalyzed representations during online production.

The counterbalance hypothesis was proposed by Lyster and Mori (2006) to explain the results of their comparative study of feedback patterns in French and Japanese immersion classrooms. Specifically, they examined the use by immersion teachers of three different types of corrective feedback:

- recasts (implicit reformulations of learners' erroneous utterances)
- prompts (signals that push learners to self-repair without providing any reformulation)
- explicit correction (provision of the correct form along with a clear indication that what the student had said was wrong)

In addition, Lyster and Mori examined the extent to which and the ways in which students responded to these different types of feedback, with a view to revealing contextual variables that might incite students to repeat recasts more in one classroom setting than in another. Their study followed descriptive classroom studies revealing discrepancies in the extent to which recasts were repeated. Specifically, infrequent repair had been observed following recasts in French immersion classrooms in Canada (Lyster & Ranta 1997), English immersion classrooms in Korea (Lee 2006), adult ESL classrooms in Canada (Panova & Lyster 2002), and EFL classrooms in Hong Kong secondary schools (Tsang 2004). In contrast, more frequent repair was observed following recasts in Japanese immersion classrooms in the US (Mori 2002), adult ESL classrooms in New Zealand (Ellis, Basturkmen & Loewen 2001), and adult EFL conversation classes in Korea (Sheen 2004).

Lyster and Mori attributed the effectiveness of recasts at eliciting immediate repair in the Japanese immersion classrooms to instructional features with an analytic orientation, detected by their use of the Communicative Orientation of Language Teaching observation scheme (Spada & Fröhlich 1995). That is, students in Japanese immersion classrooms occasionally engaged in choral repetition and activities that emphasized speaking as an isolated skill practiced through repetition and reading aloud – activities which likely served to prime students for repeating their teachers' recasts (see also Ellis & Sheen 2006; Nicholas, Lightbown & Spada 2001). These analytic features revealed a form-focused orientation that Lyster and Mori argued, from the perspective of anglophone learners of Japanese, resulted from specific characteristics of the target language – a typologically different, non-cognate foreign language—that served to focus the attention of both teachers and students more on form than would a typologically similar, cognate second language such as French. Other factors that may also have contributed to a form-focused orientation in Japanese immersion classrooms were the teachers' beliefs and behavior as shaped by their professional training and cultural background.

Lyster and Mori concluded that the extent to which classroom learners benefit positively from different types of feedback depends on the extent to which the feedback is

different from (i.e., counterbalances) their classroom's overriding communicative orientation. In form-oriented classrooms, for example, learners with regular opportunities for focused production practice and an emphasis on accuracy are already primed to notice the corrective function of recasts – that is, to notice the gap between their non-target output and the teacher's recast and to follow up with a repair move. In these classrooms, recasts have the potential to play unequivocally their double role as both corrective and pragmatic moves (cf. Lyster 1998), as they draw attention to form on the one hand and confirm the veracity of the learner's utterance on the other. As discourse moves that are well suited to meaningful interaction, recasts enable learners in form-oriented classrooms to reorient their attentional resources towards meaning in ways that avert an overemphasis on form at the expense of meaning. This is important because, while learners who bias their attentional resources toward linguistic form benefit from their ability to detect formal distinctions, their attention to form may jeopardize their ability to process other equally important aspects of the input (Tomlin & Villa 1994).

In more meaning-oriented classrooms, however, when students' attention is focused on meaning via recasting, they remain focused on meaning, not form, because they expect the teacher's immediate response to confirm or disconfirm the veracity of their utterances (Lyster 2002). In these settings, prompts – as interactional moves aiming overtly to draw learners' attention to their non-target output – enable teachers to direct students' attention to form and momentarily away from meaning. In meaning-oriented classrooms that do not usually provide opportunities for controlled production practice with an emphasis on accuracy, learners may detect the overtly corrective function of prompts more easily than the covert signals they need to infer from recasts, and they will benefit from processing the target language through the production of modified output in the form of self-repair. In the absence of opportunities for isolated production practice, prompts enable learners to engage productively in opportunities for elicited practice during meaningful interaction.

Counterbalanced instruction systematically integrates both content-based and form-focused instructional options, as outlined in Table 3 and further expounded in Lyster (2007). Counterbalanced instruction integrates content-based and form-focused instructional options by interweaving balanced opportunities for input, production, and negotiation. In terms of classroom input, teachers need to cover a range of instructional options, from instruction designed to make content-based input comprehensible by means of various techniques that facilitate comprehension, to instruction designed to make language features more salient. In terms of target language production, teachers need again to create a range of opportunities, which vary from content-based tasks designed to promote the use of the target language for academic purposes, to practice activities designed to promote the proceduralization of target language forms that tend otherwise to be avoided, misused, or unnoticed. In terms of classroom interaction, teachers and students need to negotiate language across the curriculum, as teachers exploit a range of interactional techniques that vary from the use of implicit feedback in the form of recasts that scaffold interaction in ways that

Table 3. Instructional options to counterbalance

Content-Based Options	Form-Focused Options
	Input
– Techniques that teachers employ to make subject matter comprehensible to second language learners	– Noticing and awareness activities designed to make input features salient and to facilitate their intake in declarative form
	Production
– Content-based tasks to enable students to use the second language as a cognitive tool for learning	– Production practice activities designed to facilitate the proceduralization of target forms that tend otherwise to be avoided, misused, or unnoticed.
	Negotiation
– Negotiation replete with questions and implicit feedback such as recasts to scaffold verbal exchanges with students in ways that facilitate their participation and appropriation of the targeted content	– Negotiation replete with prompts that push students beyond their use of recalcitrant interlanguage forms by retrieving more accurate target forms from their own linguistic resources

facilitate students' participation, to feedback in the form of prompts and other signals that push learners beyond their use of recalcitrant interlanguage forms.

Early studies investigating the integration of a communicative component into otherwise form-oriented language classes showed positive effects for counterbalancing instruction in this way (e.g., Montgomery & Eisenstein 1985; Savignon 1972; Spada 1987), whereas implementing a form-focused component in classes with an overall orientation that is already strongly form-focused has proven less effective (e.g., Fazio 2001). In immersion classrooms, form-focused interventions have generally proven effective at improving target language accuracy, but especially so in cases where the activities differed from other activities more typical of content-based instruction. That is, effective interventions required an intentional and systematic focus on language that countered the more typical expectation that content-based instruction should only draw learners' attention to language incidentally. As Lightbown (2008: 40) argued,

> practice that is always predictable is likely to be less effective in reaching students with different learning styles and preferences. […] In his extensive work with teacher education, Fanselow (1987, 1992) has urged teachers to 'try the opposite', observing that, over time, teachers tend to include *less* rather than more variety in their instructional activities. Varying the types of processing that the learning activities require may increase both the depth and the transferability of learning (Lyster & Mori 2006).

By orchestrating a diverse range of opportunities for processing and negotiating language across the curriculum, teachers can trigger the requisite shifts in learner attention

that are predicted by the counterbalance hypothesis to ensure continued second language growth. Counterbalanced instruction provides an alternative to the observed tendency for immersion teachers to resort either to traditional decontextualized grammar instruction on the one hand, or to content instruction with only incidental mention of language on the other. Counterbalanced instruction encompasses a range of instructional options that together confront some of the challenges inherent in teaching language through content, so that learners will be in a better position to reap the benefits of learning French as a second language through immersion and other content-based approaches.

6. Directions for future research

As the social and linguistic demographics of today's schools continue to evolve at remarkable speed, reflecting similar changes around the globe, one can predict a continued need to develop more effective second language programs to meet the changing needs of local communities. Immersion and other content-based programs have the requisite flexibility to meet the needs and wishes of local communities, with variations in grade-level entry point, target languages, and academic subjects associated with each target language. In Montreal, for instance, where the first early total immersion program began in 1965, as many as 43 programmatic variations have since been identified (Rebuffot 1998). An example of programmatic variation is *double immersion*, which uses, in addition to English, two non-native languages for curricular instruction, such as the French-Hebrew immersion program for English-speaking children in Montreal (Genesee 1998). As the need for more effective second language programs continues to evolve and as efforts increase to integrate more content into second language classrooms, program implementation will benefit from concurrent programs of research designed to explore curricular innovation and to provide ongoing assessments of program effectiveness and learning outcomes.

Internationally, immersion programs have been adapted increasingly to meet local educational needs for teaching various languages (Johnson & Swain 1997; Christian & Genesee 2001). For example, Basque-medium schools in the Basque Country were originally created as a language maintenance program for native speakers of Basque, but are now regarded "as both total immersion programs for native Spanish-speaking students and first language maintenance programs for native Basque speakers" (Cenoz 1998: 177). Catalan immersion programs in Catalonia were designed for native speakers of Spanish but, for a school to be designated as an immersion school, as many as 30% of its students can have Catalan as their family language (Artigal 1997). In some cases, therefore, use of the term 'immersion' depends on which students in any given classroom one is referring to. For example, in the case of Wales, Baker (1993: 15) writes: "the kaleidoscopic variety of bilingual educational practice in Wales makes the production of a simple typology inherently dangerous. … A Welsh-medium school

usually contains a mixture of first language Welsh pupils, relatively fluent second language Welsh speakers, plus those whose out-of-school language is English (i.e., 'immersion' pupils)" (see Hickey [2001] for a similar description of Irish-medium education in Ireland). Even in St. Lambert, Quebec, where the first Canadian French immersion program began in 1965 with homogenous groups of English-speaking children, the student population has drastically changed: 38% of its elementary students now claim French as their home language; only 53% claim English and 9% claim another language (Hobbs & Nasso-Maselli 2005). These contexts are propitious for research exploring the dynamicity of social identity construction in multilingual schools as well as the extent to which peers can be used effectively as language learning resources in linguistically diverse classrooms.

Much research in applied linguistics will continue to explore the corollary upshot of immersion education, investigating how learners can effectively and systematically engage with language in classrooms that emphasize content-driven input, purposeful tasks, and meaning-focused interaction. Counterbalanced instruction, as outlined here, provides a tentative framework for systematically addressing the integration of language and content, and does so in a way that extends the scope of form-focused instruction by encompassing instructional practices that range from form-focused interventions at one end of the spectrum to content-based interventions at the other. In other words, there is a need to continue exploring effective ways of integrating more focus on language in meaning-based classrooms, as well as exploring ways of integrating more content-based instruction as a means of enriching classroom discourse in traditional language classrooms. Given their predominant focus on meaning, immersion and other content-based classrooms provide a rich context for reflecting on and experimenting with innovative ways of second language teaching and learning.

Although immersion and other content-based programs have far-reaching potential to innovate, they have not yet necessarily reached their full potential. As for any educational initiative, immersion and content-based programs need to continue to evolve in ways that (a) respond to the needs of changing student populations and their communities; (b) incorporate relevant research findings about effective instructional practices; and (c) adopt instructional practices that situate teachers in a more interactive relationship with students and knowledge than do transmission models of teaching. Agreeing with Swain (1988) that not all content teaching is necessarily good language teaching, Handscombe (1990: 185) argued further that "the best content teaching is also the best language teaching". To attain such exemplary levels of instructional practice where the best content teaching and the best language teaching coalesce, immersion approaches have much to gain from social-constructivist approaches to education (e.g., Day & Shapson 1996; Laplante 1997), which seek to minimize transmission models of instruction and attribute considerable importance to language as both a cognitive and social tool in all learning. A timely topic for future research is the dynamic relationship among the many shared linguistic resources that immersion students have at their disposal as they use language, not only as a communicative tool, but

as a cognitive and social tool for interacting with teachers, with each another, and with content knowledge itself.

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CHAPTER 2

Language production from a neurolinguistic perspective

Marina Laganaro
Hôpitaux Universitaires de Genève & Université de Neuchâtel

Ce chapitre présente une introduction aux études neurolinguistiques. Il se propose en particulier d'illustrer comment on peut aborder des questions sur les représentations et les processus impliqués dans la production du langage à travers l'analyse du comportement linguistique de personnes cérebrolésées ainsi que la façon dont ces données divergent ou convergent avec les résultats empiriques psycholinguistiques. Après un aperçu historique et méthodologique des études neurolinguistiques seront présentées des études comportementales et électrophysiologiques portant sur les représentations impliquées dans l'encodage de la forme phonologique des mots et sur le cours temporel des processus d'encodage des mots.

The chapter illustrates how questions about language processing and representations can be addressed through the study of people who suffered brain damage. It introduces an overview of the neurolinguistic literature on language production and discusses the convergences and divergences of neurolinguistic results with psycholinguistic data. It then focuses on phonological encoding and presents behavioral and electrophysiological studies on the questions of which information is represented vs. computed during phonological encoding and on the timecourse of phonological encoding during the language production processing.

1. Introduction

The encoding of sentences or words to be produced is a very rapid and highly automatic activity spreading through several processing stages, from conceptual preparation to articulation. The system's performance is quite impressive when one considers that the production of a sentence involves the retrieval of several kinds of linguistic information – semantic, syntactic, phonological and phonetic – in an extremely short period of time, since we produce from 2 to 5 words per second (Sullivan & Riffel 1999). However, this high performance language production system can drastically break down after a brain

lesion. Impaired language production following brain damage can be quite spectacular, and the range of impaired language production behaviors vary from completely suppressed production (mutism) to the production of sentences including many phonologically and/or semantically distorted words (semantic or phonological jargon).

Several disciplines investigate language production from a cognitive point of view with different methodological approaches. The study of language production in brain-damaged speakers represents an ideal intersection between these different approaches. Indeed, the investigation of the normal language production system (psycholinguistic), of its impairments after acquired brain damage (neurolinguistic), and of its cerebral correlates (neuroimaging) are all implied in the understanding of the linguistic behavior after brain damage. At the same time, the analysis of linguistic behavior in brain damaged speakers may represent a valuable contribution to the understanding of the language production system.

This chapter aims at illustrating how questions about language processing and representations can be addressed through the study of brain damaged speakers. It first introduces the field with an historical and methodological overview in order to familiarize the readers with the assumptions underlying the neurolinguistic investigations of language production. It then focuses on phonological encoding and reviews behavioral studies analyzing the questions of which phonological information is represented as opposed to computed and on the relative time-course of some processes implied in language production. The convergences and divergences of neurolinguistic data with psycholinguistic results as well as the contribution of the neuroimaging techniques to the study of language production will also be discussed.

2. The beginnings of neurolinguistics

The nineteenth century saw the initiation of a scientific understanding of the relationship between language and the brain, and the beginning of neurolinguistics, that is, the study of correlations between linguistic structures and processes and their functional-anatomical basis. Neurolinguistic studies emerged through the clinical observation of the linguistic behavior of brain damaged patients and the post-mortem analysis of their brain lesion. The first scientific observation dates back to 1861, when the French physician Paul Broca described (in the Parisian Anthropological Society and in the Anatomical Society) the examination of the brain of a patient who had lost his language skills 20 years earlier. The patient was described as having good language comprehension, but being unable to produce anything beyond "tan, tan":

> *Il était alors parfaitement valide et intelligent, et ne différait d'un homme sain que par la perte du langage articulé. Il allait et venait dans l'hospice où il était connu sous le nom de Tan. Il comprenait tout ce qu'on lui disait; il avait même l'oreille très fine; mais, quelle que fût la question qu'on lui adressât, il répondait toujours: tan,*

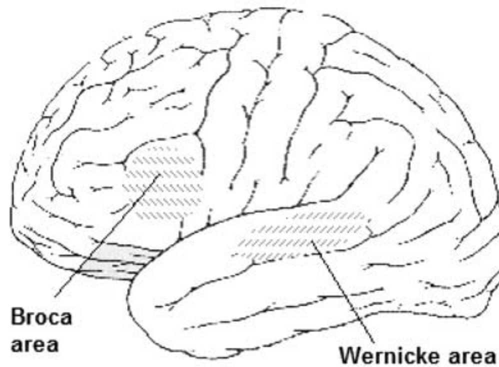

Figure 1. Broca (left inferior frontal gyrus) and Wernicke (left superior temporal gyrus) areas

> *tan, en y joignant des gestes très variés au moyen desquels il réussissait à exprimer la plupart de ses idées* […] (Broca 1861*:* 43).[1]

The post-mortem analysis of his brain revealed a lesion in the left frontal lobe, which led Broca to conclude that "articulated speech" was represented in the left inferior frontal lobe (see Figure 1).

The first scientific observation has been historically attributed to Paul Broca, although the observation of loss of speech due to a lesion in the left hemisphere had already been reported before Broca's description (Bouillaud 1825; Dax 1836/1863). For example, Bouillaud, a French physician, published in 1825 several clinical cases constituting evidence for localization of language in the left frontal lobe, but, for several reasons, the scientific community did not acknowledge these descriptions.

Broca initially called the lost language skills observed in his patient "aphemia". Some years later the French physician, Armand Trousseau, Broca's contemporary, criticized this choice on etymological bases and proposed the term "aphasia" instead.

> (..) *M. Broca, en 1861, a cru devoir designer sous le nom d'aphémie, mais aphémie en grec signifiant 'infamie', le terme était évidemment impropre. M. Crysaphis, Grec d'origine et helléniste fort distingué, a pensé que le mot aphasie était préférable en*

1. 'He was then perfectly healthy and intelligent, and differed from a sane man only in the loss of articulated speech. He came and went in the hospice where he was known under the name of Tan. He understood all that was said to him; he even had very fine hearing; but, regardless of the question addressed to him, he always responded: tan, tan, in conjunction with greatly varied gestures by means of which he succeeded in expressing most of his ideas'. Translation by Christopher D. Green (http://psychclassics.yorku.ca/Broca/aphemie-e.htm).

faisant dériver de α privatif et de φασις, parole. (…) Ils s'accordent tous pour répudier de la manière la plus formelle aphémie.[2] (Trousseau 1877/1969: 193)

Aphasia is the term which remained following these etymological discussions. It describes a condition of language impairments (production and/or comprehension) due to acquired brain damage.

The investigation of the relationship between language and brain regions rapidly converged towards a model of the localization of different linguistic processes. The German physician Carl Wernicke related impaired language comprehension to brain lesion in the left temporal lobe (Wernicke 1874). Wernicke and Lichtheim then described a model of aphasia in which different brain areas are responsible for language production, language comprehension and conceptual elaboration – the so-called Wernicke-Lichtheim model (Lichtheim 1885). The model proposed that auditory word processing was localized in the temporal brain region (Wernicke's area, see Figure 1), while word production processes were localized in a frontal region (Broca's area).

This model (see Figure 2) represented the first, although simplified, attempt to describe the cortical localization of different language processes as well as their associations. Impaired language comprehension was explained by a lesion in the auditory input center, localized in the Wernicke's area, while damage to the verbal motor center (Broca's area) was related to impaired language production. Moreover, the Wernicke-Lichtheim model made the assumption that the different brain regions responsible for different language processes are inter-connected. The model proposed a connection between the comprehension and the production brain areas, as well as an association between each of these loci and a locus of conceptual representation.

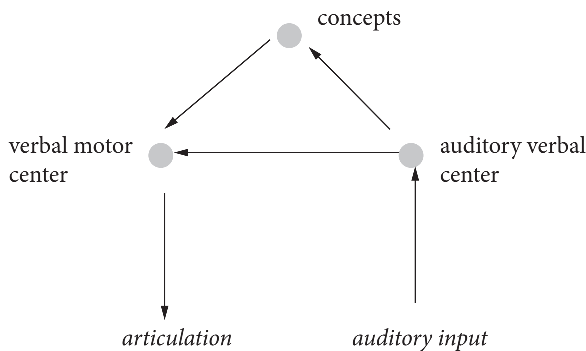

Figure 2. Wernicke-Lichtheim model (Lichtheim 1885)

2. "(…) in 1861 Mr Broca thought the term aphemia was appropriate, but aphemia means in greek "infamy", the term being of course incorrect. Mr Crysaphis, a Greek distinguished Hellenist, proposed the that the term aphasia was more appropriate, because it derives from privative α and speech φασις. (…) They therefore agree to reject the term aphemia.

Importantly, Wernicke and Lichtheim also proposed the hypothesis of impaired repetition following a lesion in the association between these two brain regions. This prediction has been confirmed with the observation of the so-called conduction aphasia syndrome: brain-damaged patients who could understand what they hear, but who presented a disproportionate difficulty to repeat it.

Neurolinguistic or neuropsychology of language has born out of these clinical observations of the relationship between linguistic behavior and brain lesions. However, neuropsychology (including neuropsychology of language) started to exist as a recognized discipline only with the first teaching (Lashley at Harvard in 1937 according to Bruce 1985), and with the publication by H. Hécaen and colleagues in 1963 of the first specialized review *Neuropsychologia*.

The end of the 20th century also coincided with the emergence of new methodological approaches in the study of the relationship between cognitive behavior and its functional-anatomical basis. The methodological approach of neurolinguistic studies integrated the meticulous experimental methods of cognitive psychology and psycholinguistics and adopted new neuroimaging techniques. These new methodologies had as a consequence a shift in the questions to be asked in neurolinguistic research and in the way this field can inform normal language processing. Thus, although cerebral localization of language functions still constituted a main focus of neurolinguistic investigations, a new issue concerned the study of representations and processes implied in language production and comprehension. Indeed, the investigation of the linguistic behavior of speakers with focal brain damage started to be informative not only about language production and comprehension under pathological conditions, but also about the organization of conceptual and linguistic structures under normal conditions.

The implication of neurolinguistic studies for the comprehension of language processing in healthy speakers proceeded from two core assumptions, which we need to describe here in order to introduce the reasoning underlying the studies presented in the following sections. The first theoretical and methodological assumption is called modularity (Fodor 1986). Modularity refers to the theory of cognitive organization claiming that at least some cognitive processes (e.g., language) are specific and operate as independent and autonomous ("encapsulated") systems, with very few exchanges with other cognitive systems. The second underlying statement is the so-called "transparence assumption" (Caramazza 1986). Caramazza argued that pathological behaviors following a focal cerebral lesion can be interpreted as the result of a normal system with impaired sub-systems of representations or processes. Both assumptions have been largely discussed in the 1980s and are still being debated. We will come back to this debate with regards to language production in section 3.

An important argument for modularity and a spectacular demonstration of how impaired behavior can inform normal language organization comes from the observation of selective impairments and of double dissociations. Selective impairments refer to the observations of brain damaged speakers who have lost the ability to process a unique kind of linguistic information while all other processes remain relatively or

completely unimpaired. A double dissociation refers to the observation of at least two brain injured speakers presenting an exactly "mirror pattern", that is, impaired process A and unimpaired process B in one case, and the opposite pattern in the other case. For example, the observations by Paul Broca and Carl Wernicke described in the previous section represent a double dissociation between language production and language comprehension. These kinds of reports represent an elegant illustration that some linguistic functions can be selectively damaged by a brain lesion, thus suggesting that they are represented and processed independently from other functions. As a consequence, the study of selective impairment and double dissociations provided valuable information on which linguistic information is represented and processed by the brain independently of other types of information or processes.

In the following section, we will illustrate some examples of double dissociations described in the field of speech production, before analyzing in more details recent neurolinguistic studies on phonological encoding.

3. Illustration of double dissociations in the language production system

Double dissociations have been reported in many cognitive domains and on many aspects of language processing. The dissociations reported in reading and writing processes are the most often quoted and spectacular (Beauvois & Dérouesné 1979; Dérouesné & Beauvois 1979; Marshall & Newcombe 1973). We will limit ourselves to the dissociations reported in the field of word production, starting with the dissociation between phonological and semantic processes, and focusing on more fine-grained dissociated processes.

A double dissociation commonly observed in brain-damaged speakers concerns semantic and phonological errors in spontaneous and elicited production. Selective difficulties in accessing phonological information of words in the presence of preserved semantics have been described in several aphasic patients (Hillis, Boatman, Hart & Gordon 1999; Caramazza, Papagno & Ruml 2000). In these reports, the patient's output always resulted in the production of phonologically distorted words, called phonological paraphasias (for example, [tʀaʀubɛ] for [tabuʀɛ] ('stool'), [poʀoʃ] for [pwaʀ] ('pear'), or, in connected speech, sentences like: "*alors, ce sont deux [gomɛ̃)] en train [detade] le [ʃaʒ] et en train de se [kʀoze]...*").[3]

Cases with selective damage to conceptual information and preserved phonological code have also been described (Warrington 1975; Hillis, Rapp, Romani & Caramazza 1990). These brain damaged speakers systematically produced well-formed erroneous words with a semantic relationship to the target word, called semantic paraphasias. For example, they produced "table" instead of "stool", or "apple" instead of "pear", or in connected speech, semantically unintelligible but phonologically well-formed sentences

3. All the examples without explicit references are taken from personal observations.

like: "*nos chevaux brûlant dans la table bramé pour dorer leur apparence romanesque*" ('our horses burning in the table to golden their romantic appearance').

These descriptions illustrate that semantic and phonological processes in speech production may be damaged selectively. They are taken as an indication of separate encoding processes of semantic and phonological information. These observations thus converge with psycholinguistic speech production models which propose separate and consecutive encoding stages for syntactic-semantic and phonological information (Levelt 1989; Levelt, Roelofs & Meyer 1999), as illustrated in figure 3.

According to this psycholinguistic model, the lemma – semantic and syntactic information – and lexeme – phonological information – are represented and retrieved independently. Moreover, encoding of the semantic-syntactic properties and its phonological form are done successively in time; namely, the phonological form can be encoded only once the semantic and syntactic information have been entirely retrieved. We will come back to this issue in section 5.

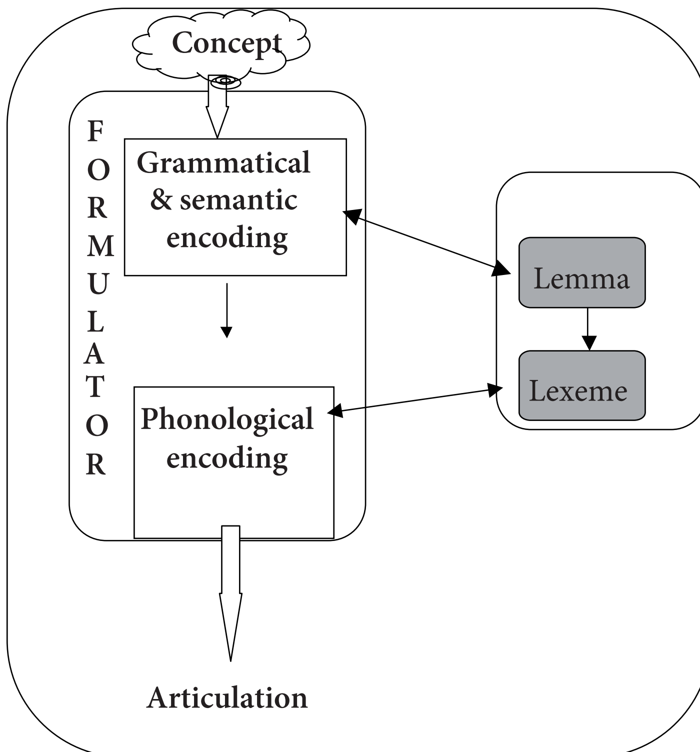

Figure 3. Serial speech production model (adapted from Levelt 1989)

Furthermore, the description of double dissociations between semantic and phonological impairments led the supporters of connectionist models, initially opposed to a separation between semantic and phonological processes (e.g., Dell 1988; Dell, Schwartz, Martin, Saffran & Gagnon 1997), to introduce different lexico-semantic and lexico-phonological connection weights in their models. These adjustments made the connectionist models also compatible with separate semantic and phonological processes and with selective impairment of semantic or phonological encoding (Foygel & Dell 2000).

Several specific dissociations in the linguistic behavior after brain damage have been reported inside semantic, syntactic or phonological processes. There is a large literature describing dissociations and double dissociations in the field of semantic knowledge leading to the description of categorical organization of the lexical semantic network (Caramazza & Hillis 1991). For example, selective impairments and double dissociations have been reported in the processing of living and non-living semantic categories as well as in the processing of proper versus common names (Cipolotti 2000; Miceli, Capasso, Daniele, Esposito, Magarelli & Tomaiuolo 2000; Pavão Martins & Farrajota 2007; Warrington & Shallice 1984).

Double dissociations have also been described between syntactic categories. For example, McCarthy and Warrington (1985) reported an aphasic speaker who displayed impaired verb production in naming actions, but who had preserved the ability to produce object names (nouns). The opposite has been reported by Zingeser and Berndt (1988) who described an aphasic speaker who was less impaired in producing verbs than nouns in a picture naming task. Taken together, these contrasting observations have shown that the production of verbs and nouns can be independently disrupted by brain damage. This dissociation has attracted the attention of many researchers and has been confirmed by several reports. However, the interpretation of the dissociation between verbs and nouns in terms of localisation and of linguistic and cognitive processes is still debated (see Druks 2002 for a review).

Dissociation between processing of open- and closed-class words in agrammatic aphasic patients was reported by Biassou, Obler, Nesopoulous, Dordain and Harris (1997). They analyzed the reading accuracy of open- and closed-class words embedded in real sentences in three French speaking aphasic patients. Despite the fact that open- and closed-class words were matched on length, lexical frequency and syllabic structure (e.g., *divan – durant; plateau – plutôt)*, the patients produced a higher proportion of phonological errors on closed-class than on open-class words. The same implications as for the previously described dissociations may apply to these syntactic categories, which seem to be treated by different brain nets.

Finally, dissociations and double dissociation have also been reported at the level of phonological encoding. Dissociation has been often reported in segmental substitution between consonant and vowels errors, with aphasic speakers producing more errors on consonants, even when the relative frequency was considered. These patterns may have been interpreted as a predominance of consonant errors, until Caramazza, Chialant, Carpasso and Miceli (2000) described a double dissociation between the

encoding of vowels and consonants. They reported on two Italian aphasic patients, AS and IFA, who presented impaired phonological encoding and produced a high number of phoneme substitution errors. The two subjects were tested on the same material and, whereas AS substituted about 30% of the vowels (e.g.: /*salire*/ 'to climb' yielded /*solire*/) and produced very few consonant substitutions, IFA produced about 30% of errors on consonants (e.g.: /*salire*/ produced /*savite*/) and almost no vowel substitutions. The two cases presented a mirror pattern, which claimed for separate processing of consonant and vowels during encoding and separate brain areas underlying them.

In sum, we have illustrated how neurolinguistic reports of selective impairments can contribute to the comprehension of which linguistic information and processes are represented as separately stored units and how they provide a valuable contribution to the description of models of normal language production. In the next two sections, we will focus on the contribution of neurolinguistics to the study of word form encoding by analyzing some convergences and divergences between psycholinguistic and neurolinguistic results.

4. The neurolinguistic investigation of phonological encoding and its convergences and divergences with psycholinguistic research

A valuable methodological approach in neurolinguistic studies, besides double dissociations, has been the in-depth analysis of language production errors in brain-damaged speakers. Indeed, the development of psycholinguistics and models of normal speech production also originated from the analysis of errors ("slips-of-the-tongue") produced by healthy (non-aphasic) speakers (Fromkin 1973; Garrett 1975; Levelt 1989). In fact, every speaker produces phonological errors such as "*le chour est faud*" instead of *le four est chaud* ('the oven is hot'), or "*des substances qui faliçitent* (instead of *facilitent*) *la réaction chimique*" ('substances which facilitate chemical reaction') (examples taken from Rossi & Peter-Defare 1998: 132–152). This kind of errors indicates that phonemes may be switched between words or inside a word during the encoding of word form. The corollary of such an observation is that the phonological form of the words to be produced is not encoded holistically, but that individual phonological units are retrieved and assembled during the encoding process. The analysis of errors opened a window into understanding how information is processed in the planning of speech production.

This same reasoning was applied to the investigation of aphasic phonological paraphasias. However, compared to error rate in normal speakers – every speaker produces about 1,6 slip-of-the-tongue every 1000 words (see Rossi & Peter-Defare 1995, 1998) – aphasic speakers produce a higher proportion of errors, sometimes up to one error per word. While normal slips-of-the-tongue consist of about 70% of phonological errors (Rossi & Peter-Defare 1998), some aphasic speakers produce exclusively phonological errors (as already reported in section 2 about double dissociations).

Thus, the question is how the analysis of aphasic errors may inform the normal processes of word production and whether the same processes implied in the production of normal slips-of-the-tongue are responsible for aphasic errors. It is legitimate to ask this question, if one considers that some phonological paraphasias are very far away from normal slips-of-the-tongue. Indeed, phonological slips-of-the-tongue transform most of the time a single phoneme or switch between two phonemes, but seldom an entire syllable. Phonological paraphasias sometimes also involve single phoneme errors, like in phoneme substitutions ([kubɛl] instead of *poubelle*; [papitõ] for *papillon*) and in phoneme shifts or exchanges ([valabo] for *lavabo*; [kaʀvat] for *cravate*), but often larger transformations are observed, leading to "distant" phonological errors such as [taladak] for *cadenas* 'lock', or [kablo] for *marteau* 'hammer'. These distant phonological errors, also called neologisms when they have limited phonological overlap with the target word (Valdois, Joannette, Nespoulous & Poncet 1988), have led some researchers to claim that aphasic errors cannot inform on how the normal speech production system works.

There are actually two contrasting positions with regards to the potential of neurolinguistic data to inform the development of psycholinguistic models of speech production. At one end of the spectrum is the extreme position that the observation of normal behavior is the only reliable source of information for models of speech processing: "we feel it as a bridge too far to expect a patient's behavior to confirm our theory" (Levelt et al. 1999: 68). In this view, language processes in a damaged brain are due to a completely new and different organization than in a healthy brain and cannot inform normal functioning. There is thus no way to consider a common underlying process responsible for slips-of-the-tongue and for aphasic errors. This means, for example, that only errors produced by aphasic speakers that are similar to slips-of-the-tongue (single phoneme transformations) can be explained by the same processes as in normal speakers.

According to serial models (Levelt et al. 1999), the segmental content (phonemes) and the suprasegmental word structure (frame) are activated independently. The segmental representation encoded at this level is totally or partially underspecified. In a following encoding stage, phonemes are associated to word frame (assembling processing) (Shattuck-Hufnagel 1979). This phonological word-form is then kept in a buffer, just the time necessary for addressing the corresponding phonetic plans. Phoneme substitution and phoneme movement errors are thought to occur either because part of the encoded phonological (segmental) information trace is mis-placed during the assembling of segmental and suprasegmental information procedure, or because it is lost before the stage of phonetic encoding. In this kind of proposal, only phonological paraphasias with a close phonological relationship to the target word (single phoneme transformations) have the same origin of error as phonological slips-of-the-tongue, both being generated during post-lexical phonological encoding. This means that the phonological form has been correctly retrieved from the lexicon, but that errors during assembling or buffering processes occur on single phonemes. A different origin of

error generation is attributed to more severe phonological transformations (neologism), which are observed in aphasic output. The aphasic errors with few phonological overlap with the target word form are thought to originate at earlier encoding processes, during the retrieval of the word form (Butterworth 1992; Goldrick & Rapp 2007; Kohn & Smith 1994). For instance, the production of highly distorted forms (neologisms) can emerge when partial information of the word form cannot be retrieved and a phonological code is generated by default (Butterworth 1992).

An opposite view considers that impaired linguistic behaviors after brain damage provides valuable information on the functioning of the normal language system. This integration of psycholinguistic and neurolinguistic data has been developed in the framework of interactive activation models (Dell et al., Schwartz, Martin, Saffran & Gagnon 1997; Foygel & Dell 2000; Schwartz, Wilshire, Gagnon & Polansky 2004). In this view, the same error mechanisms underlie normal and impaired speech production and the divergences between normal and pathological errors are accounted for by quantitative, not qualitative, differences. This idea of a quantitative difference between normal and pathological errors has already been proposed by Sigmund Freud (1891: 13) in his pre-analytical written work on aphasia, albeit with a functional interpretation (see also Buckingham 1999):

> […] the paraphasia observed in aphasic patients does not differ from the incorrect use and the distortion of words which the healthy person can observe in himself in states of fatigue or divided attention or under the influence of disturbing affects […].

In interactive activation models, all phonological errors are generated by mis-selection of phonemes. The mis-selection is due either to impaired connection weights between lexical and phonological nodes (Foygel & Dell 2000), or to impaired connection weights or decay rates throughout the whole production system (Dell et al. 1997). In this proposal, the distance of the phonological error with the target word is linked to the severity of the impairment rather than to different underlying processes generating the errors.

In the perspective of cognitive studies of language production, acknowledging a common origin for both normal slips-of-the-tongue and paraphasias enables neurolinguistic studies to inform the normal functioning of the language production system.

In the following section, we will show how the analysis of aphasic errors can inform psycholinguistic models of normal speech production and how neurolinguistic results may converge with psycholinguistic results. We will more specifically illustrate two issues of phonological encoding: the encoding of lexical stress and the representation of syllables.

4.1 Lexical stress: representation versus computation

The authors of a prominent psycholinguistic model of phonological encoding (Levelt et al. 1999) assume that lexical stress is assigned by default during the production processes in languages with a fixed stress pattern such as French. However, it is less clear how stress is assigned during phonological encoding for stress-assigning languages such as Italian or English. For example, how do speakers encode during speech production English words like *pérfect* and *perféct* or Italian words like *ancóra* ('more/ still'), and *áncora* ('anchor') which only differ in lexical stress? Default lexical stress encoding would only attribute a single stress pattern – the regular or most frequent pattern – thus, in these languages, some information about lexical stress might be stored along with other suprasegmental phonological information.

The question as to which lexical entries have stored stress and which words receive stress assignment by phonological rules may depend on language properties, particularly on the relative frequency of the different metrical patterns. Levelt et al. (1999) assumed that only the language's less frequent (irregular) stress pattern is stored and retrieved during phonological encoding, while the most frequent metrical pattern is assigned by default. This means, for example, that metrical information is represented in the mental lexicon for polysyllabic English words that do not have main stress on the first syllable (e.g., *perféct*), or for Italian words that do not have a penultimate stressed syllable (e.g., *áncora*).

Psycholinguistic data in favor of the representation of lexical stress for irregularly stressed words comes from a few stress misplacement errors in slips-of-the-tongue such as *se ti váccini* instead of *se ti vaccíni* 'if you get vaccinated' (Magno Caldognetto, Tonelli & Panzeri 1997: 330). However, these errors are very rare in normal slips-of-the-tongue (Cutler 1980; Magno Caldognetto et al. 1997).

As errors collected in neurolinguistic studies may provide a larger amount of phonological error data, analyzing aphasic speakers who produce stress errors constitutes an important source of investigation for the question of the representation of lexical stress. Two neurolinguistic studies have reported Italian speaking aphasic patients producing a high proportion of lexical stress errors. Cappa, Nespor, Ielasi and Miozzo (1997) described a patient who produced primarily lexical stress errors in naming and reading, while Laganaro, Vacheresse and Frauenfelder (2002) reported on an aphasic patient (MS) who produced lexical stress errors in all the tasks that involved phonological encoding of single words (spontaneous production, naming, reading and repetition). For example, in a picture naming task, MS said [e'lika] instead of ['elika] (*elica* 'propeller') [si'garo] instead of ['sigaro] (*sigaro* 'cigar'), and he made the same kind of errors in reading aloud single words, even when he was asked to repeat correctly pronounced words. Only a few stress errors were observed on regular words (Italian words with the penultimate stressed syllable), while most stress mis-assignment errors occurred on irregular words. This dissociation observed between regularly and irregularly stressed words suggests that regular and irregular stress is not encoded in the

same way. Regular lexical stress may be assigned by default, whereas irregular stress is stored along with other phonological information and has to be retrieved. A difficulty in retrieving this stored information seems to be the origin of the linguistic behavior observed in the brain-damaged speakers described above. The errors observed in the aphasic patients are therefore in line with Levelt et al.'s (1999) theory and represent an argument in favor of the representation of irregular stress. The observed pattern of errors seems to suggest that the predominant lexical stress is assigned by default during phonological encoding when the stored information is not available.

However, when the same aphasic speaker (MS) who produced stress placement errors on irregularly stressed words was asked to read pseudo-words (i.e., legal phonological forms that are not represented in the speakers' mind), he produced 23% of pseudo-words with an irregular stress position (stress on the antepenultimate syllable). The rate of production of un-stored phonological forms with an irregular stress position was very similar to the pattern of pseudo-words production in healthy subjects reported by Colombo's (1992) psycholinguistic study, in which Italian-speaking participants produced about 20% of the pseudo-words with an irregular stress pattern. Together, the results of the brain damaged speaker and the psycholinguistic observation challenge the suggestion of the Levelt et al's model. The observation that an aphasic speaker with an impaired lexical stress assignment did not exclusively apply the default stress to new phonological forms raises the hypothesis that other processes besides retrieval and default assignment are involved in the encoding of stress patterns. The discussion about which kind of implicit knowledge or phonological rules may underlie these results goes beyond the purpose of this chapter (see Arduino & Burani 2004; Colombo 1992; Laganaro et al. 2002).

4.2 The study of syllabic representation in speech production

The syllable is a very ancient and intuitive notion that every speaker can easily identify because of its acoustic-physiological and functional properties (see Labrune 2005). The syllable also represents a fundamental unit in many phonological theories. However, no clear empirical evidence confirms its psychological reality or its role in speech production although psycholinguistic and neurolinguistic research have sought to assess the role of syllables in speech production for the last 20 years. There are two possible ways to envisage syllabic encoding during speech production. First, the syllables may be represented in the brain implying that syllabic representations are retrieved from a store during word form encoding in the same way words or phonemes are retrieved. Alternatively, syllables may be computed on-line through phonological rules suggesting that syllables are not stored in the brain, but result instead from the application of phonological rules during phonological encoding.

The so-called "syllabic position constraint" in phonological slips-of-the-tongue represented the first empirical evidence for the role of syllables in speech production (Shattuck-Hufnagel 1979, 1992). The "syllabic position constraint" refers to the

observation that consonants tend to interact with other consonants from homologous syllable positions (particularly, onset phonemes interact with other onsets) when healthy speakers produce phonological slips-of-the-tongue (e.g., "*faut-il calaniser*" instead of *faut-il canaliser* or "*Hetmul Kohl*" instead of Helmut Kohl; examples taken from Rossi & Peter-Defare 1998: 132–152). The syllabic position constraint indicates that abstract syllabic positions (in terms of abstract CV structures) are conserved when segments move in slips-of-the-tongue. It does not prove that phonological surface syllables (structure and segmental content) are stored units. Indeed, the proportion of whole syllable errors (for example, the production of a syllable exchange like in *chocolat* produced [Solako]) is very low in phonological slips-of-the-tongue: 3% of the slips-of-the-tongue involve syllables in the French corpora by Rossi and Peter-Defare (1998), while 76% of the errors involve phonemes. The rarity of whole syllable errors represents rather an argument against the representation of whole (surface) phonological syllables, since stored units are supposed to be sometimes mis-selected or misplaced.

In the 1990s, the question of how syllables are encoded was investigated via syllable priming paradigms with psycholinguists trying to speed up the production of words through the presentation of the first syllable of the word (in comparison to syllables that did not phonologically overlap with the word). These studies led to controversial findings because although some authors reported positive syllable priming effects (Ferrand, Segui & Grainger 1995, 1996; Ferrand, Segui & Humphreys 1997), other researchers were unable to replicate these findings using the same methods and materials (Perret, Bonin & Méot 2006; Schiller 2000; Schiller, Costa & Colomé 2002).

Thus, an alternative line of investigation has tackled the issue of the representation of syllables through the study of syllable frequency effects. The underlying assumption was that stored linguistic information follows a frequency organization principle, predicting that highly frequent units would be made available more easily. This frequency effect stems from studies on word frequency by Oldfield and Wingfield (1965) which demonstated that representations that are used more often are easier to activate and retrieve than representations that are used less often. However, the generalization of this principle to other stored linguistic units is more controversial. The following reasoning underlies the studies on syllable frequency effect.

If syllables are represented in a syllable store (called "mental syllabary" in Levelt et al. 1999), their retrieval during the encoding processes should be easier (i.e., faster) for more frequent syllables than for less frequent ones. This hypothesis was first explored by Levelt and Wheeldon (1994) who observed a syllable frequency effect in production latencies. However, other psycholinguistic studies failed to replicate these results until very recently, when psycholinguistic and neurolinguistic researchers reported the same effect at the same time. Psycholinguistic studies demonstrated shorter production latencies for high frequency than for low frequency syllables in several languages, namely, Spanish (Carreiras & Perea 2004), Dutch (Cholin, Levelt & Schiller 2006), and French (Laganaro & Alario 2006).

At the same time, neurolinguistic studies provided evidence for a syllable frequency effect in brain damaged speakers (Aichert & Ziegler 2004; Laganaro 2005; Stenneken, Hofman & Jacobs 2005) with different methodologies. In Aichert and Ziegler (2004), brain damaged German speakers were more impaired in repeating words composed of low frequency syllables than words composed of high frequency syllables. The same results were observed using a similar methodology with French-speaking aphasic speakers (Laganaro 2008).

A syllable frequency effect was also reported in the analysis of phonological paraphasias. Stenneken et al. (2005) analyzed the distribution of syllables in the neologisms produced by a German aphasic speaker. The syllables forming the neologisms were of higher frequency than the normal German syllable frequency distribution, indicating that the aphasic patient was producing a high proportion of frequent syllables. In the error analysis carried out by Laganaro (2005) on several patients, each syllable containing a segmental error was compared to the frequency of the target syllable. A syllable frequency effect was described in three patients, in which the produced syllables were of higher frequency than the target syllables. For example, the patients produced errors like [alybɛt] for "*allumette*" [alymɛt] ('matches'), where the syllable [bɛt] was of higher frequency than [mɛt] (although interestingly the phoneme /b/ is less frequent than /m/).

In sum, the study of syllable representation through the manipulation of syllable frequency led to convergent psycholinguistic and neurolinguistic evidence. In healthy speakers, the effect has been shown in production latencies; in aphasic speakers, the effect has been demonstrated on production accuracy and on errors. Psycholinguistic and neurolinguistic results show that high frequency syllables are produced faster in normal encoding and are more resistant to disruption after brain damage than low frequency syllables. Taken together, these observations favor the view that syllables are represented in the brain and have to be retrieved during speech production. Here again, neurolinguistic data allow investigation through in depth error analyses, where psycholinguistic research with healthy speakers has recourse to sophisticated experimental designs.

5. Analyzing the time course of phonological encoding in healthy and brain damaged speakers

Over the past two decades, there has been an increase in the use of neuroimaging techniques to study brain responses to the processing of linguistic information. Neuroimaging techniques, such as fMRI (functional magnetic resonance imaging) and PET (positron emission tomography), allow one to investigate the anatomical correlates of specific linguistic processes with a high spatial resolution. By contrast, EEG (electroencephalography) and MEG (magnetoencephalography) studies ensure an estimation of the time-course involved in cognitive processing and allow high temporal

resolution. In some linguistic domains, understanding the time-course of the different processes is more important than understanding the precise localization of processing. This is because timing of linguistic behaviors directly informs psycholinguistic theories on language production and comprehension. While the early EEG and MEG studies sought to analyze the time course of language perception and comprehension, recent developments have also addressed language production and its disruption after brain damage. Here we will illustrate how the question of the relative time-course of the different encoding processes involved in speech production has been investigated using neuroimaging techniques.

We have already mentioned that actual psycholinguistic models postulate the existence of several levels of processes and representations between the conceptual preparation of the message and its articulation (see figure 3). Different accounts have been proposed regarding the relative independence of these levels and the way activation flows between the levels. For example, the authors of discrete models of speech production (Levelt 1989; Levelt et al. 1999) claim that the retrieval of semantic information and the retrieval of the word-form are accomplished independently and occur successively in time. According to this perspective, phonological encoding starts only once semantic encoding has been completed. Conversely, interactive activation models (Dell 1986; Stemberger 1985) postulate that semantic and phonological levels interact and their encoding proceeds in parallel. For example, lexical and phonological nodes receive activation from all activated semantic nodes and phonological activation feeds back to the semantic level before selection is made.

Discrete and interactive models make clearly different predictions concerning the time course of the encoding processes. Serial processing models predict that lemma selection precedes phonological encoding, while interactive processing models predict that these encoding processes proceed in parallel or overlap. As shown in the previous sections, neurolinguistic evidence supports independent encoding of the lexical-semantic and phonological properties. For example, we have described the double dissociations between the availability of semantic and phonological information in brain damaged speakers (section 2). Dissociations between access to grammatical and phonological information have also been reported. For instance, the French speaking aphasic patient described by Henaff-Gonon, Bruckert and Michel (1989) was able to spontaneously produce the correct gender-marked article of nouns, although he was unable to produce the word. This observation indicates that the retrieval of the grammatical feature of a word can proceed independently of the retrieval of its phonological form. Does it also imply that encoding of these two independent processes proceeds serially from one to the other, or do independent processes proceed in parallel? This question has been addressed with electrophysiological studies.

ERP (evoked response potentials) methodology allows researchers to track the time course of electrophysiological changes linked to a cognitive process, with very high temporal resolution. Because of the difficulty in tapping directly into the different encoding processes during the production of words or sentences, the paradigms used

in these studies with healthy subjects were based on metalinguistic judgment tasks. In this kind of tasks, participants have to decide, for example, whether the word corresponding to a picture presented on screen starts with or contains a target phoneme. The word is not produced overtly, but at least an abstract phonological code has to be generated internally in order to carry out the judgment (the reader is referred to Schiller 2005 for a critical review of internal monitoring). For example, Van Turennout, Hagoort and Brown (1997, 1999) used a covert naming task in which subjects had to decide whether the word corresponding to a picture was of feminine or masculine gender (syntactic decision), and whether it started with a target phoneme (phonological decision). Moreover, for purposes of the ERP recordings, the gender decision determined whether the left or the right hand had to press the button, while the phonological decision determined whether the button had to be pressed or not and vice-versa (the so-called go/no go paradigm). The electrophysiological results, based on the Lateralized Readiness Potential (which appears as soon as the primary motor cortex is activated when a decision about response hand has been made) supported the serial encoding theory, since the syntactic information appeared to be available 40ms earlier than phonological information. Other ERP studies using similar paradigms analyzed the relative time course of encoding conceptual/semantic and phonological information (Jescheniak, Schriefers, Garrett & Friederici 2002; Rodriguez-Fornells, Schmitt, Kutas & Münte 2002; Schmitt, Münte & Kutas 2000), or of semantic and syntactic processes (Schmitt, Schiltz, Zaake, Kutas & Münte 2001).

Based on these findings and on the relative time-windows of the different processes identified in these kind of studies, Indefrey and Levelt (2004) carried out a meta-analysis in order to estimate the time course of word production during picture naming (see Figure 4). Following this estimation, the encoding of the semantic and syntactic properties (lemma) precedes the encoding of the phonological form, which fits in the framework of serial encoding models.

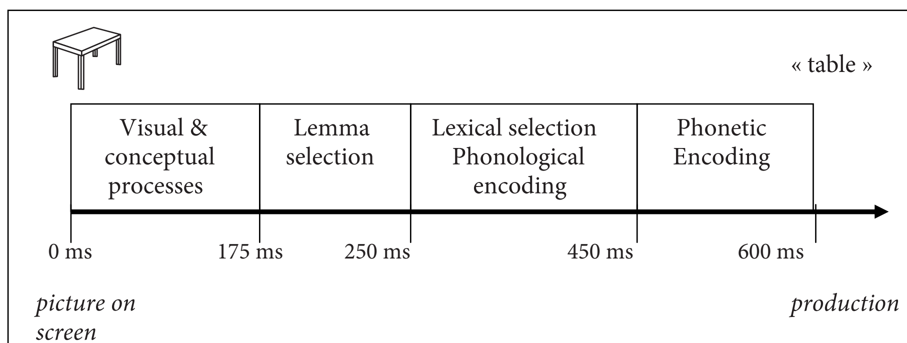

Figure 4. Estimated time course of word production during picture naming by Indefrey and Levelt (2004)

In contrast to the proposition of serial processing, other ERP studies have suggested parallel or overlapping encoding of semantic and phonological information (Abdel Rahman & Sommer 2003) and of syntactic and phonological information (Camen, Morand, Schwitter, Schnider & Laganaro 2007).

Abdel Rahman and Sommers (2003) used a semantic and a phonological monitoring task with a similar paradigm as described in the study conducted by Van Tourrenout et al. (1997, 1999). In the semantic condition, the authors manipulated the duration of semantic processing by increasing the difficulty of semantic judgment from pictures. Models proposing serial encoding of semantic and phonological information predict that the duration of semantic processing should affect the beginning of phonological encoding. The duration of processing for the easy versus hard semantic decision did not affect the beginning of phonological processing, showing that phonological encoding can start before the previous encoding stage has been completed. Similarly, Camen et al. (2007) used a gender and phonological decision task during silent picture naming as in previous go/no go paradigms (Van Turennout, Hagoort & Brown 1997, 1999) but different ERP analysis (see Murray, Brunet & Michel 2008). They found no clear timing difference between gender and first phoneme monitoring, but rather an overlap between syntactic and phonological encoding. In that study, the gender and first phoneme decision fell within the same time window, namely, at about 270ms, while monitoring the onset of the second syllable in the word generated a later effect at about 450 ms. The lack of timing difference between gender and first phoneme suggested that lemma retrieval and phonological encoding may proceed in parallel or overlap. The later effect for processing of the second syllable supports the idea that segmental encoding continues incrementally from word onset to the following phonemes. Taken together, ERP studies with healthy adults provide evidence for either serial encoding or parallel encoding of semantic-syntactic and phonological encoding.

What about the time course of word encoding in brain-damaged speakers with impaired language production? It might be reasonable to suspect that impaired word production would display some kind of divergent pattern in the time-window corresponding to the impaired encoding processing (for example semantic or phonological).

A MEG study by Cornelissen, Laine, Tarkiainen, Jarvensivu, Martin and Salmelin (2003) carried out with 3 aphasic patients analyzed the time course of picture naming before and after a therapy period. The authors reported therapy-linked changes starting at about 300 ms after picture presentation. The three patients in that study suffered from impaired lexical-phonological encoding and changes between 300 and 700 ms during picture naming were interpreted as reflecting recovery in word form retrieval and encoding.

We have recently analyzed the question of the time course of the different word encoding processes in a picture naming task through the study of ERP abnormalities in aphasic participants with impaired semantic or phonological encodings (Laganaro, Morand & Schnider 2008; Laganaro, Morand, Schwitter, Zimmermann & Schnider 2008). If semantic encoding precedes phonological encoding, as suggested by serial models and

as estimated by the meta-analysis of ERP studies by Indefrey and Levelt (2004), aphasic patients with impaired semantic processes should display abnormal ERP patterns in earlier time-windows than the ones with impaired phonological encoding. This is exactly the pattern observed in that study. Aphasic participants with impaired lexical-semantic processes and who produced semantic errors with preserved phonology (like "chair" for "table" or "apple" instead of "pear", see section 2) had ERP abnormalities in an early time-window (between 150 and 300 ms after picture onset). The aphasic speakers with impaired phonological encoding (producing phonological errors, see section 2) had deviant ERP patterns starting at about 300 ms until about 450 ms. Thus, the analysis of ERP patterns in aphasic speakers supports the view of specific encoding time-windows for semantic and phonological processes, with semantic processing preceding phonological encoding. These results concur with the findings of serial processing in healthy adult participants. However, these results do not rule out that different processes may overlap to some extent as revealed with other ERP studies in healthy participants.

6. Conclusion

In this chapter, different neurolinguistic methodologies were presented illustrating how the study of brain-damaged speakers can provide valuable data about the processes and representations implied in normal language production. The chapter was intended as a non-exhaustive review of neurolinguistic data on single word production, with a focus on phonological encoding. It was also aimed at demonstrating how the data from different kinds of studies (psycholinguistic, neurolinguistic and neuroimaging) can be integrated to validate models of speech production. Besides the word production processes tackled in this chapter, neurolinguistic studies have also focused on other linguistic levels, like syntactic, morphological or semantic processes, as well as on different modalities, like language comprehension and written language, and on different populations, like bilingual and polyglots, young or elderly speakers. If neurolinguistic investigations in some of these directions are quite recent, other aspects of language processes after brain damage have given rise to much research interest since the beginnings of neurolinguistics; for instance, interest in bilingual aphasia has started at the very beginning of neurolinguistics (Ribot 1882; Pitres 1895) and still represents a widely explored topic of research. For a general overview of neurolinguistic research, the reader is referred to Stemmer and Whitaker (1998, 2008).

7. Directions for future research

All the above mentioned directions of neurolinguistic studies, including different language processes and modalities as well as different populations, are currently being investigated by different research groups around the world. The use of more sophisticated neurolinguistic methodologies such as neuroimaging, as compared to very early clinical observations, has allowed for an important advancement in the understanding of normal and impaired language processing. As in most fields, progression of research solves some questions, but also points out new unsolved questions. The fact that the study of the relationship between language and the brain lies at the intersection between several disciplines and is able to inform the cognitive processes of language in several domains and populations allows current and future research to develop in several directions.

The growth of brain-damaged population due to stroke and the incidence of post-stroke aphasia (about 30%, see Engelter, Gostynski, Pap, Frei, Born, Ajdacic-Gross & Lyrer 2006; Pedersen, Jorgensen, Nakayama, Raaschou & Olsen 1995) is certainly a driving force promoting neurolinguistic studies. The clinical management of aphasic patients implies the development of knowledge in the domains of cortical substrate and cognitive processes of language and its breakdown and recovery after brain damage. Moreover, the variability of brain-damaged population, including different ages, from childhood to the old age, and different linguistic contexts, favors the investigation of the relationship between language and the brain across the lifespan as well as the organization and processes of language in bilingual and polyglot populations.

The growing interest in neuroscience research also favors an increase in neurolinguistic investigations. In future developments, neuroimaging studies will probably become the leading methodologies in the advancement of neurolinguistic research. This will include the investigation of brain areas involved in the different linguistic processes as well as the study of the time-course and interactions between linguistic levels and processes. With regard to the topic developed in the present chapter, the localization of different linguistic representations and processes underlying language production, their time-course and especially how the encoding processes follow during planning and programming of language production and how they are modified across the life-span (both in development and with aging) and after brain lesions or during recovery from aphasia are questions that will need to be addressed in future research.

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CHAPTER 3

Natural language processing tools in CALL

Marie-Josée Hamel
Dalhousie University

Dans ce chapitre, nous nous proposons d'examiner la contribution du Traitement Automatique du Langage (TAL) en Apprentissage des Langues Assisté par Ordinateur (ALAO) avec une perspective sur l'enseignement du français. Le chapitre comporte deux sections principales. Dans la première, nous traitons de Tuteurs Intelligents (TI) puis, nous nous concentrons sur les TIs dédiés à l'apprentissage de la langue. On verra que dans ces systèmes d'Apprentissage des Langues Intelligemment Assisté par Ordinateur (ALIAO), les techniques de TAL occupent une place centrale, notamment celle de 'parsing'. Notre deuxième section est consacrée à la description d'un système d'ALIAO nommé FreeText, qui vise des apprenants du français langue seconde de niveau intermédiaire à avancé. Il s'agit d'un riche environnement d'ALAO qui comprend un ensemble d'outils de TAL, lesquels ont été adaptés pour permettre de fournir aux apprenants un diagnostic 'astucieux' de leur intrant langagier. Nous concluons ce chapitre en discutant des avantages, dans le contexte de l'apprentissage d'une langue, du contact des apprenants avec les outils de TAL tels ceux développés dans FreeText.

This chapter examines the contribution of Natural Language Processing (NLP) in Computer-Assisted Language Learning (CALL), in the perspective of French language instruction. It is divided into two main sections. The first presents an overview on Intelligent Tutoring Systems (ITS) and then describes a specific type of ITS, the Intelligent Language Tutor (ILT), where Natural Language Processing techniques, namely parsing, are core. The second main section focuses on one such ILT system called FreeText which is dedicated to intermediate-advanced learners of French as a second language. It is an enhanced CALL environment comprising a set of NLP tools, which have been adapted to provide FSL learners with a 'smart' diagnosis of their language input. The chapter concludes with a look at the overall benefit, within a language learning context, of learners' exposure to the use of NLP tools, such as those found in FreeText.

1. Intelligent Tutoring Systems

When Artificial Intelligence (AI) lends its techniques to CALL systems, the latter are referred to as ICALL systems (Dodigovic 2005; Hamburger, Schoelles & Reeder 1999; Matthews 1992). AI contributions to the development of ICALL systems are important and come mainly from studies of knowledge – knowledge acquisition, knowledge communication, knowledge models, knowledge misunderstanding, expert knowledge, and so on (Frasson & Gauthier 1990). Knowledge is indeed seen as "one of the central characteristics of intelligence" (Last 1989: 114). By integrating techniques that are borrowed from AI into CALL systems, the goal is to enhance the overall flexibility of such systems so they can further adapt to the learning routines and individual needs of learners (Demaizière & Dubuisson 1992). Since the notion of intelligence is closely related to the notion of knowledge, ICALL systems are said to be knowledge-based applications. There are different kinds of system applications, different kinds of knowledge and different ways of representing knowledge in system applications. ICALL systems belong to a more general type of system applications referred to as Intelligent Tutoring Systems (ITSs) which can be defined as "[c]omputer programs for learning that employ artificial intelligence techniques" (Levy 1997: 58). ICALL systems share the overall architecture and core modules of ITSs.

1.1 General characteristics and overall architecture of the ITS

ITSs are communications systems. Their overall *goal* is to recreate an instructional situation; the *object* being the communication of a knowledge domain in which the machine, as the *sender,* is the expert in the domain and a human, as the *recipient,* is the learner of the same domain. The transmission of knowledge between a machine and a human is made possible through the use of an interface, which consists of a *channel* of communication between both, as illustrated in figure 1:

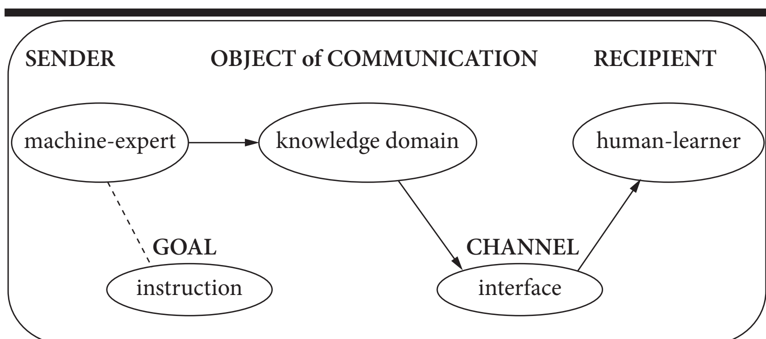

Figure 1. ITSs are communications systems

One of the main characteristics of ITSs, as for any human-teacher, is that they are competent in the subject matter they teach (Mendelsohn & Dillenbourg 1993). Therefore, equipped with the appropriate reasoning capacity on problems particular to a specific domain, ITSs should be able to resolve any problems that human-learners put forward (op. cit.).

ITSs are modular systems. The information linked to the representations of the different types of knowledge they encompass is stored separately, typically within four main modules, which are core components of ITSs. The four modules include: the Expert Module, the Learner Module, the Tutor Module and the Interface Module. Each of these four modules has a significant and distinct role to play within ITSs. Together, they contribute to make ITSs true knowledge communication systems. A four-module model is ideal as modules, in general, are unequally developed in such systems, sometimes having no clear boundaries between them.

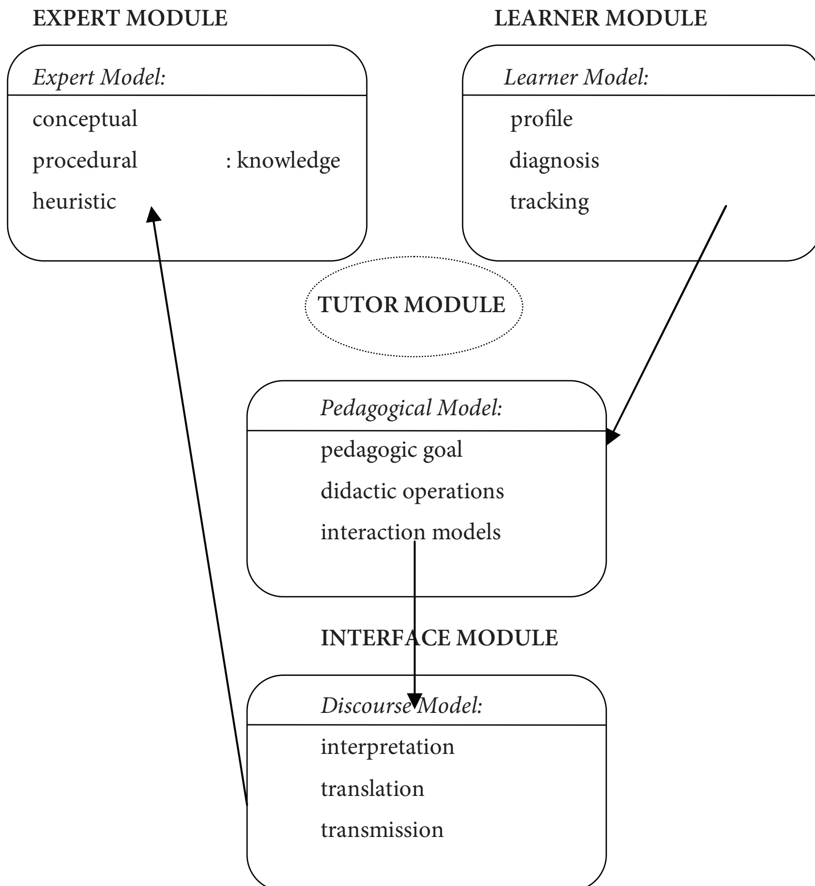

Figure 2. Overall architecture of the ITS

Finally, ITSs are meant to be highly dynamic in that they are constantly being updated by new information. This information is first provided by the user of the system (a learner in this context), and then passed on (through the IM) for evaluation (within the EM), for diagnosis (through the LM), and for feedback (through the TM). Communication takes place to, from, and between modules.

ITSs have an overall architecture which can present itself as shown in Figure 2 (above).

These four ITS modules are individually described in the following sections.

1.2 The Expert Module (EM)

Knowledge has two important characteristics: "(a) it is modified and extended by experience, and (b) it is linked in a number of ways with previously acquired knowledge" (Last 1989: 117). It is therefore the objective of the EM "to transfer the skill, knowledge and experience of a human expert onto a computer system in such a way that the computer can emulate the behavior of the human expert – and also explain how it comes to its conclusions" (op. cit.: 118). In an attempt to do so, the EM will typically be provided with a knowledge database, describing all the elements belonging to the domain and "an appropriate reasoning system" (Lian 1992: 68). It will also describe how these elements behave within the given domain. Together, both the knowledge database and the reasoning system will ideally consist of "a representation of the knowledge to be communicated" (Wenger 1987: 14). It is essentially a model of the human-expert. Indeed, the EM is also referred to as the "Domain Model" (Mendelsohn & Dillenbourg 1993) or the "Ideal Student Model" (Yazdani 1987). Three types of knowledge are described within the EM:

1. Conceptual knowledge, which "includes the data, the concepts, and the relations between concepts of the domain' (Woolf 1988: 10);
2. Procedural knowledge, which "includes the reasoning used by the system to solve problems in the domain" (op. cit.), and;
3. Heuristic knowledge, which "includes actions taken by an expert to make measurements or perform transformations in the domain" (op. cit.).

Several representation modes are used to describe these types of knowledge: semantic networks, production systems, schemata (data structures), first order logic, finite state automata, and so on. Some representation modes are more appropriate for the description of conceptual knowledge, such as database structures and semantic networks. Others are better suited for the description of procedural knowledge, such as finite state automata.

In an instructional situation, questions and tasks are set not for the expert to answer, but for the learner. This then means that the machine-expert must imitate the way a human learner would find solutions to problems (answers to questions, perform tasks, etc.) in order for the system to reason about the solutions themselves, as well as

the process(es) used to reach these solutions. In other words, the EM should mirror the way a learner thinks when s/he finds solutions, as well as record its own thinking processes. The EM thus fulfils "a double function" (Wenger 1987: 15): it becomes a "source", as well as a "standard". It is capable of generating explanations, responses, tasks, questions, and so on. The EM is also an evaluation standard for student work because it can generate "solutions to problems in the same context as the student does" (op. cit.). There is thus an implication that the EM should be "sensitive to solution paths so that intermediate steps can be compared" (op. cit.). More importantly, there is the suggestion that "multiple possible solution paths" can be produced (op. cit.). This second aspect of the EM's function is indeed at the heart of intelligent systems based upon instruction. It makes the EM "an explicit representation of the teaching goal" (op. cit.).

The mode chosen for the representation of the knowledge domain in the EM therefore raises important cognitive implications, as it will bear on the actual learning process and the learners' understanding of the knowledge domain. The EM mode of representation, from this perspective, should be "transparent" and have a "psychological plausibility" (Wenger 1987: 16), thus giving it a better "communicability" (op. cit.).

Finally, the EM must be capable of handling the different types of potential answers that might be provided by the learner. Such types could include incorrect answers or answers which fall outside the knowledge domain, while the EM is attempting to compare them to its own possible solutions. In order to overcome these barriers, the EM needs the participation of another important ITS module: the Learner Module.

1.3 The Learner Module

"No intelligent communication can take place without a certain understanding of the recipient" (Wenger 1987: 16). The general idea behind any tutoring system is that it adapts its reactions to the learner behavior, while choosing, for instance, the right feedback for the error of a learner. It could also adjust the difficulty of an exercise according to the numbers of errors made during a lesson (Mendelsohn & Dillenbourg 1993). In traditional tutoring systems, this whole process of gathering information about learner behavior is fairly rigid and limited; answers are controlled and very few quantitative parameters are allowed. In contrast, the ITS seeks to define a model of student behavior which is more exhaustive. This model is located within, what is referred to as the Learner Module (LM).

The LM gathers all types of information about the learner that will support both his/her learning process, as well as his/her understanding. Information about the learning profile, learning style, preferences of the learner, and also information extracted from his/her input to the system, will eventually provide sufficient information to build up a representation of the different states of the learner knowledge on the expert domain – that is to say, a portrait of his/her actual knowledge at any given moment. This portrait is enriched at each step of the learning process. It aims to be as

authentic as possible, as it will be used to construct a diagnosis, which will help the system to make pedagogical decisions (op. cit.).

The different states of knowledge of the learner consist of "variants of the expertise" (Wenger 1987: 345). States of knowledge are represented in relation to scope, incorrect knowledge and viewpoint. For instance, viewpoint – a notion introduced by Wenger (1987) – refers to the interpretative context that is specific to a situation, a domain and a background. The capacity of an ITS to actually adopt multiple viewpoints is essential, since it ultimately leads to the optimization of the diagnosis and the didactic steps. Also essential is an instructional tool, as well as an instructional target. Learning is indeed a dynamic process, "a succession of transitions between knowledge states" (op. cit.: 361).

Being able to gather enough information about the different states of learner knowledge, which will meet all of the aspects mentioned above, is not an easy task for a machine. The task is difficult because the machine remains limited in what it can collect, interpret and eventually model/represent. The more accurate and broad the scope of information, the more chance the entire system will have of adapting to learner needs. And, as with the EM, several modes of representation can be used to describe learner knowledge in the LM. One way of doing so would be to build up sets of primitive/universal principles/meta-rules that can be used to describe both correct and incorrect knowledge. With this approach, only one mode of knowledge representation, an exclusive model, is being developed. It will serve both modules, the EM and the LM. Another approach would be to collect information on "liable errors for a particular domain and a particular group of students" (op. cit.: 17). Within this second approach, two models are developed separately: one describing the correct knowledge in the EM and another, parallel, describing the incorrect knowledge in the LM. Central to both approaches is the notion of diagnosis.

1.3.1 *Diagnosis*

The interpretation of correct and incorrect knowledge in ITSs is the result of what is referred to as the diagnosis process, or simply, the diagnosis. Diagnosis is core within the LM. Its end purpose is to make decisions of a pedagogical nature, which will guide the learner in his/her learning progression. Diagnosis is therefore defined from didactic premises.

Input provided by the learner, typically answering questions or queries, must be dealt with. In an ITS, this activity is usually performed at two levels. Firstly, learner input is compared to the models provided by the expert system, located within the EM. Secondly, the results emerging from this comparison are sent over to the LM to be compiled and then generated into a diagnosis. The aim of this process is precisely to interpret the machine results by analyzing them and eventually linking them to pedagogical actions (cf. Tutor Module).

Diagnosis typically performs three distinct tasks: 1) it will make inferences about learner input; 2) it will attempt to produce an interpretation of learner input and 3) it will draw a classification of his/her error types.

The role of the diagnosis model is "to test the viability of the implicit expectations in the teaching plans" (Ohlsson 1987: 233), which "implies that the diagnosis component depends on the system teaching strategies" (op. cit.). Diagnosis thus consists mainly of a pedagogic activity, since it is "aiming at collecting information about the student on his actions" (Wenger 1987: 367) as it becomes "a process of reasoning about reasoning" (op. cit.: 393).

Two types of analyses can be performed on the results (i.e., the learner input) collected: an analysis based on construals and/or an analysis based on errors. While the first type of analysis is looking for what the learner knows; the second is looking for what s/he does not know. Derived from these analyses are two diagnosis models: one, which is referred to as the "overlay model", and the other, which is called the "buggy model".

1.3.1.1 *The overlay model*

In an ITS, the state of a learner's knowledge is generally represented as a sub-set of the EM knowledge (Mendelsohn & Dillenbourg 1993). The "overlay paradigm" consists of a model in which the LM is formulated through a comparison of the learner performance and the results the expert would have presented under similar circumstances. Such a model is applicable each time the expertise is represented by production rules (op. cit.)

Wenger (1987: 346) notes that "[o]verlays provide a simple mechanism to determine candidate areas for pedagogical actions". With that purpose in mind, the model is constantly being updated so that pedagogical actions adapt to the learner. The process of updating the overlay model relies on many sources of information. Firstly, it depends on implicit information that arises from the comparison of learner behavior and expert decisions, where the acquisition of this information depends on the capacity of the developer to link a given behavior to a well-defined set of effective realization. Secondly, the overlay model relies on structural information. This information belongs to the network of dependencies and relative complexity, related to the competencies involved where the network sets the limits within which the learning process must be centered. Thirdly, it counts on explicit information that can be obtained from the direct questioning of the learner (test or questionnaire); the prerequisites being supposed, inferred or stored within a preceding session for the initialization of the model (Mendelsohn & Dillenbourg 1993).

Those expert systems that do not expressly represent imperfect knowledge are referred to as strict overlay systems. According to Wenger (1987: 347), "under the strict overlay paradigm, variations in knowledge states correspond to incompleteness not to incorrectness". On the other hand, overlays "can be applied to models containing 'buggy elements'; this is an approach called 'extended overlay'" (op. cit).

1.3.1.2. *The buggy model*

The buggy model, also referred to as the "bug catalogue" (Yazdani 1987: 195), is a well-known approach to diagnosis modeling (Clancey 1987: 60) in the literature on ITSs and has been extensively used in ITSs (Nerbonne 2003). The buggy model works on the assumption that there are characteristic, incorrect constructions that students will produce when learning specific language skills (Bailin 1995; Sanders 1991). Therefore, the fundamental idea behind the buggy model is to build up another knowledge domain, based on the most frequent errors produced by learners. This is then used as an alternative to the knowledge domain of the EM to which it is constantly compared. Once the learners' errors have been compiled and reformulated as mal-rules (bugs), "error analysis routines" (Bailin 1995) can be implemented. These routines aim to support the diagnosis. Each time a learner provides an input, the data are sent to the EM to be handled. If it turns out that the input does not match any rule of the expert knowledge domain, the unmatched input is sent to the LM. A match is then attempted again, but this time with a mal-rule belonging to the learner knowledge domain. If a match is found, a repair strategy associated to the mal-rule (stored in the Tutor Module) can be sent over to the learner via the User Interface.

The more extensively this learner knowledge domain is described, the more chance there are that matches will occur on this level and diagnosis will be generated. In other words, the larger the catalogue/library of bugs/mal-rules, the more the diagnosis becomes accurate. Depending on the subject domain, some bugs are easier to capture than others. Bugs that seem to be relying on knowledge of the external world (bugs which fall outside the expert knowledge domain) are much more difficult to capture and formalize. The buggy model is thus well-suited for restricted subject domain. It is also suited for programs which make use of catalogues of errors and have proved the feasibility and relevance of using such an approach for error diagnosis in their LM component.

Diagnosis, whether performed using an overlay or a buggy approach, is a crucial component of ITSs. As previously mentioned, it allows pedagogical actions to be realized, as it anticipates what actions can be performed and when. However, it is only once the standards for evaluation are being set up, that we can see the application of the "establishment of measures that can compare knowledge" (Wenger 1987: 15). If "the expert model can be said to constitute an explicit representation of the teaching goal" (op. cit.), this will only be true once an overall teaching goal has been specified. It is precisely within the Tutor Module that this is done.

1.4 The Tutor Module

The Tutor Model (TM) – also called the "Pedagogic Module" (Mendelsohn & Dillenbourg 1993), the "Tutoring Knowledge" (Yazdani 1987) or simply "Didactics" (Wenger 1987) – deals with the why, how, and when the expert is going to react to the learner's various inputs. The aim of the TM is therefore to imitate the tutor-learner interaction, while selecting the appropriate tasks for the learner, giving him/her

feedback and help, as well as performing other kinds of pedagogical activities. Examples include giving explanations and advice, or administering tests to measure the learner performance. In contrast with diagnostic activities, pedagogical activities are meant to have a direct impact on the learner; simply put, there are interactions. Nonetheless, this does not mean that all pedagogical activities will be 'visible' to the learner and will be explicitly 'announced'. Some of them can remain implicit or hidden.

Two interaction models are dominant within ITSs (Mendelsohn & Dillenbourg 1993): 1) the socratic method, which consists of asking the learner questions in order to make him/her progress in his/her knowledge about a given domain, while tracking his/her errors; 2) the path-finder approach, which consists of giving interactive help to a learner who is engaged in a particular problem-solving situation by using a command language.

For interactions to be achieved as realistically and as efficiently as possible, the TM will have to be based on "strategies used to teach the domain knowledge" (Yadzani 1987: 195). These strategies and their associated pedagogical activities originate from pedagogical views on the overall learning process such as the view that the learner can explore a knowledge domain at his/her own pace and will gain from his/her own errors. This learner-centered/driven approach for the TM of ITSs is a progression from traditional tutoring systems, where learning was controlled in order to keep error rates to a minimum. This was consistent with the belief that for the learning process to take place, the learner must be kept on the right track. With ITSs, a greater autonomy is given to the learner, resulting in actions remaining under the learner's control. Hence, no information concerning the pedagogical actions/activities can be pre-defined. Instead, this information will be obtained from both the EM and the LM and derived from principles which will translate as tutorial interactions. These principles present characteristic aspects of what Wenger 1987 refers to as a "didactic operation", that is "a unit of decision in a didactic process" (op. cit.). Each didactic operation consists of:

1. A *plan of action* (op. cit.: 397). This plan corresponds to the subject domain curriculum and is presented in small sequences of sub-topics/actions for which diagnosis expectations are specified;
2. A *strategic context* (op. cit.: 398). Since there are pedagogical goals behind any instructional activities, the methods used to reach these goals are strategically determined. One approach is to use the contexts created by the learner as opportunities to achieve these goals. Another more straightforward approach is to follow the contexts as imposed by the given plan. A hybrid approach would be able to use the two previous types of contexts: student-driven and plan-based.
3. A *decision base* (op. cit.: 400). In a didactic operation, some constraints and sources are required in order to ensure the effectiveness of the decisions made during interactions. These will be based on a didactic base and a domain base, as well as the content of the intervention.
4. A *target level*, which is the "level of the subject matter at which an operation seeks immediate modification: behavioral, epistemic and individual target levels" (op. cit.: 408).

Typically, a syllabus, acting as a blue print, will dictate the entire didactic process. It is fundamental in that it "schemes transition states within the constraints imposed by the individual level and by the limited communication channel" (Wenger 1987: 413). It has the "task of creating a pedagogical bridge between a model of communicable knowledge and a model of the student" (op. cit.).

To enable diagnosis, information between the machine and the learner must circulate and this is typically done through verbal and non-verbal types of interactions. Within ITSs, these interactions are typically handled by the interface module.

1.5 The Interface Module

The Interface Module (IM) – also referred to as the "User Interface" (Yazdani 1987) – is responsible for translating, interpreting and transmitting the flow of information to and from the external world. The IM consists of the actual channel of communication between the expert-system and the learner. Because of its privileged relation with the interaction mode, as defined within the TM, the IM is in close relation with the latter, namely regarding its pedagogical plan and the way in which it is constructed.

The quality of the interface is fundamental so that the messages between the learner and the system do not end up as exchanges based only on coded messages (Mendelsohn & Dillenbourg 1993). When the interaction mode is based on natural language processing, a discourse model, kept up by the interface, will ensure that all ambiguities that could occur in the natural language discourse are resolved. These ambiguities could include anaphora, ellipsis, lexical categories, and so on. This is achieved by taking into account the information stored previously and/or through the questioning of the learner, for instance, to clarify his/her discourse. However, as we will see below, realistic (i.e., natural, coherent and consistent) dialogue-based interactions are difficult to achieve because of the inherent complexity of natural language and the unpredictability of the learner's input. Therefore, the shift toward graphic-based interactions is having major implications for the role of IM. Indeed, the interface is more sophisticated and, because both the expert-system and the learner rely heavily on it for their dialogue, its role within the ITS is growing. It is indeed starting to "assume tasks of increasing pedagogical significance" (Wenger 1987: 418).

Hence, the graphical conception (presentation screens, sound effects, video and animation, etc.) of the interface is often perceived as a crucial component in the design of an ITS (Mendelsohn & Dillenbourg 1993). The quality of the interaction with the learner can be enhanced by a realistic and organized presentation of the information (op. cit.). The ITS in fact often allows the learner to use the interface as a way of constructing the external representations necessary to the resolution of a problem (op. cit.).

Let us now consider the particular case of Intelligent Language Tutors.

2. Intelligent Language Tutors

What characterizes Intelligent Language Tutors (ILT) as a type of ITS, is the fact that they use natural languages as their knowledge domain. Natural languages are special (compared to artificial/programming languages, for instance) in that they are highly sensitive to contexts and therefore prone to ambiguous interpretations. Ambiguity is generally something that a human being can deal with easily, or can resolve by making use of resources such as context and his/her own experience. Context and experience are resources that are difficult to encapsulate in a computer. This difficulty then makes such a knowledge domain particularly challenging to describe electronically. It is commonly described via natural language processing (NLP) techniques. Furthermore, on top of the ambiguity rests the fact that ILT users are typically language learners. They are therefore prone to make linguistic mistakes. Such errors would have to be handled through the use of NLP techniques. First, let us try to define NLP, consider what it does, and explore what it can eventually offer CALL.

2.1 Natural Language Processing (NLP)

One of the central themes of language engineering, NLP is an automated activity involving the processing/treatment of natural language that can typically be pursued in two directions: natural language comprehension and natural language production. In natural language comprehension, the automated activity consists of the analysis of one or several natural languages. In natural language production, the automated activity consists of the generation of one or several natural languages. The natural language(s) being analyzed or generated can be written or spoken. The automatic analysis of written languages is referred to as parsing, while the automatic analysis of spoken languages is referred to as speech recognition. The automatic generation of written languages is simply referred to as generation, while the automatic generation of spoken languages is referred to as speech synthesis.

In all four cases – parsing, speech recognition, speech generation and speech synthesis – various linguistic approaches and techniques are used to either analyze or generate the natural language(s) involved. In general, the processing will typically address one or more linguistic levels: phonetics, phonology, morphology, syntax, semantics and/or pragmatics. The phonetic and phonology levels, for instance, are involved in speech recognition and speech synthesis processing. On the other hand, the morphology and syntax levels – sometimes the semantic and rarely the pragmatic levels – are involved in parsing and generation processing. Probabilistic approaches and techniques might also be used to process natural language. These rely heavily on statistics, emerging from large collected natural language corpora, to support either the analysis or the generation of written or spoken natural language segments. They can be used alone or in combination with linguistic approaches and techniques.

Common applications derived from NLP technology, hence NLP-based applications, include machine translation systems, information-retrieval systems (message understanding), spelling/grammar checkers, writing assistants, speech pronunciation aids, talk-writers, and so on. Among these applications, Intelligent Language Tutors, on account of the central role taken by NLP in such systems, are often referred to as NLP-based CALL systems or ICALL systems. Parsing is the technology that has been primarily investigated for these systems (Holland, Maisano, Alderks & Martin 1993). Let us take a look at how parsing generally works.

2.2 Parsing

As previously stated, parsing consists of the automatic analysis of written texts. This analysis is typically carried out in several steps. The *segmentation* of the text is the first step or level of analysis. It involves breaking down the entire text into smaller units or 'word tokens'. These units are typically delimited within the text by the use of blanks, punctuation and truncation signs. The next level of analysis is the *tagging* of words found in the text. This is a process whereby each word token, through a dictionary look-up, is assigned one or several (if there is categorical ambiguity) part-of-speech tags, generally using morpho-syntactic categories (noun: masc./plu.; verb: 3 p./s.; etc.). Once word categories are identified, the *building up* process can take place, which is the next step or level of analysis, and the core of the parsing activity. It consists of grouping 'affinity' words together in bigger units (i.e., syntagms) to eventually reconstruct the overall structure of one or several (if there is structural ambiguity) sentences.

Parsers are usually classified according to two analysis dimensions: the orientation of the analysis and the processing mode for the alternatives (Wehrli 1997). The first dimension has to do with the strategy used for the representation of the input sentence. One way to proceed while building up is to start from the initial symbol of the grammar (often referred to as 'S' for sentence) and to construct a representation from the top (the initial symbol) to the bottom (the terminal symbols, i.e., the words of the sentence) of the structure. This is referred to as top-down processing (op. cit.). Alternatively, the building up process can start from the terminal symbols of the grammar and attempt to combine these symbols into higher constituents (i.e., syntagms) until the top of the structure (i.e., the initial symbol) is reached. This is referred to as bottom-up processing (op. cit.).

The second dimension has to do with the processing of the alternatives. If the parser is facing a configuration where more than one grammar rule can apply, a first strategy consists of pursuing one of the alternatives, while keeping note of the other ones. This way, they can be considered later on if the chosen alternative leads to a dead-end or if one is interested in all possible derivations of the input sentence. This mode is referred to as *sequential processing* of the alternatives with *backtracking*. Another strategy consists of pursuing all the alternatives together, at the same time. This mode is referred to as *parallel processing* of the alternatives (op. cit.). There are thus two types

of strategies for the representation of the sentence: a top-down and bottom-up approach. Furthermore, there are two types of strategies for the processing of the alternatives: a sequential with backtracking and parallel approach. The strategies can also be mixed (op. cit.).

During the tagging process, the parser consults a dictionary in order to assign part-of-speech attributes to words; however, during the building up process, the parser consults a grammar in order to assign syntagmatic structures to some word configurations. Parsers' grammars have been described by means of (meta-)rules, principles, relations, and so on, through formal linguistic models such as Government-Binding (Chomsky 1981), Generalized Phrase Structure Grammar (Gazdar, Klein, Pullum & Sag 1982), Lexical Functional Grammar (Bresnan 1982), and so on. Grammars based on rules are specific as they will typically describe finite sets of structures applying to the description of given (sub-)languages. Grammars based on meta-rules or principles are more generic as they will describe linguistic facts that can be applied to the description of larger sets of structures within a language (and across languages). As we will see below, the use of rule-based or principle-based parsing has its pros and its cons in ILTs.

Once reconstructed or 'parsed' output results are displayed, they often take the shape of bracketed marked-up sentences and/or tree structure representations. Wehrli (1997) compares the parser to a "transducer", that is, a mechanism capable of converting a chain of symbols (the input sentence) into another chain of symbols (the representation(s) of this sentence). The notion of well-formedness is central in any parsing activity (Whitelock & Kilby 1995: 23). A sentence is considered well-formed or 'grammatical', if it can be assigned a structure. It is considered ill-formed or 'deviant/agrammatical', if it cannot be assigned a structure. Some parsers will typically not display any output if they cannot provide an analysis. Others will provide partial analyses for those recognizable parts of a given sentence.

Parsers produce output results which "can be used in a range of ways, depending upon the purpose of the system" (Holland et al. 1993: 30). The first and most straightforward use of these results is to provide a diagnosis on whether parsed sentences are grammatical or not. Holland et al. (1993) refer to this as the "evaluation function" (op. cit.) of parsers, which is commonly found in ILTs.

2.3 Parsers in ILTs

Within the context of ILTs, parsers which are built to efficiently analyze all grammatical structures of a language must also be able to handle potentially ill-formed ones. And indeed, through parsing, most ILTs incorporate "an error handling facility" (Sams 1995); a facility which enables error detection, identification, evaluation and even sometimes correction (error diagnosis facility). Typically, diagnosis is triggered when the parser encounters problems while analyzing a learner input. Problems are varied and found at all parsing process levels. At the segmentation level, a word agglutination

or a missing punctuation sign, for instance, might lead to the assignment of the wrong word token or even prevent the analysis from being pursued. At the tagging level, a spelling mistake in a word, the use of a wrong suffix for a word, for instance, might create problems assigning a part-of-speech tag or again, prevent the analysis from being pursued. At the building up level, the use of a wrong word order, a missing word, a wrong subject-verb agreement can create problems reconstructing the structure of the sentence, leading then to a failed or partial analysis. Problems related to structural ambiguity can also arise when competing analyses are found by the parser and a decision has to be made as to which is the best candidate to display. When such problems occur, error diagnosis is typically performed with an overlay or a buggy approach. Sometimes a mixture of both is used. The approach taken will depend on linguistic and pedagogical considerations, as well as computational restrictions.

In the early 1990s, Matthews (1993) advocated the use of a principle-based approach to parsing. In his work, he considers rule-based parsers as non-economical because they rely on a grammatical approach, which demands a "'large number of rules to describe a language'" (op. cit.: 16) with the consequence that "the larger the grammar, the slower the performance" (op. cit.: 17). The author also points out that rule-based parsers are language-specific and thus less flexible, and less re-usable. On the other hand, principle-based parsing and, in turn, principle-based parsers, are seen by the author as a good alternative as they offer a more abstract, yet generic level of representation to describe a language. Consequently, they have a smaller/lighter grammar, which allows, through the description of parametric variations, for the description of more than one language. This claim is supported by Weinberg, Garman, Martin and Merlo (1995) who demonstrate the compactness, efficiency and portability of principle-based parsers in machine-translation systems. Matthews (1993) also claims that rule-based parsing is problematic because it demands yet more rules to be inferred (learner errors to be anticipated) and described (as error rules in a learner grammar). The difficulty lies in the fact that errors, which would not have been anticipated in the LM, would fail to be diagnosed. Principle-based parsing offers, on the other hand, a good alternative to the diagnosis of ill-formed input. No further principles have to be described, as only taxonomy of violation principles is to be provided. Constraint relaxation techniques (op. cit.: 19) are used to enable the production of parsed output (the analysis will not fail on the basis of a principle violated) with the advantage that "even if a string fails a number of principles at least some structure will be assigned" (ibid.). Constraint relaxation is a well-known parsing technique for the handling of ill-formed input (Vandeventer Faltin 2003) which is often compatible with an overlay approach to diagnosis (although not exclusive to this approach). As stated, it involves letting the parser pursue its analysis until the end, despite the encounter of grammar principle/rule violations. As a result, the parser allows ill-formed structures to be attached. When such violations occur, they are flagged along the parse chart. This information collected is stored elsewhere (typically within the LM) to be interpreted (i.e., diagnosed) and a feedback on local errors is to be displayed to the learner. As we

will see in the next section, this is the approach to error diagnosis found in the 'smart' CALL program FreeText, through the use of the principle-based parser FIPS.

NLP, namely parsing, has its drawbacks in CALL. As well described by Holland et al. (1993): parsing is hard and of limited scope. However, claims have been made that parsing technology in CALL is worth pursuing since "there is a place for formed-focused instruction in communicative language theory" (Holland 1995: 313) and that "NLP is the leader in this domain" (op. cit.). From this perspective, the motivation in parser-based systems becomes "to select those aspects of syntax that are problematic for the learners and can be reliably illuminated by parsing" (op. cit.). There exists the intention of using these systems "to supplement, not to supplant, communicative instruction" (op. cit.). The evaluation function of the parser clearly dominates within ILTs. However, its translation, information retrieval and dialogue functions are slowly finding their place within some ILTs (cf. Gamper & Knapp 2002; Hamel 2003). The information retrieval function of the parser, in particular, which comprises the concept of message understanding, has the potential of rendering more interactive and more authentic the overall language learning experience in such systems.

Holland, Kaplan and Sams (1995) and, more recently, Heift and Schulze (2007) discuss in depth the role of NLP in ILTs/ICALL systems. Within these two monographs, descriptions of 'known' and less known systems can be found for many languages, such as German, Japanese and Arabic. Those dealing with French remain scarce. FreeText, which is described next, involves French and could be considered one of the largest ILT initiatives to date.

3. FREETEXT[1]

FreeText is an NLP-based 'smart' CALL environment dedicated to intermediate-advanced learners of French. We discuss the initial motivation behind the project, and then present its didactic concept and contents. Additionally, we look at the adaptation of the NLP reused in FreeText for diagnosis purposes and finally, describe FreeText's interface.

3.1 Reusing existing NLP tools

FreeText emerged through its predecessor: project SAFRAN (Hamel 1998, 2003). The initial motivation behind the program was to reuse existing NLP tools and then adapt

1. FreeText was a large EU funded project which took place between 2001 and 2004. It involved a consortium of four main partners: the University of Manchester Institute of Science and Technology (lead by Dr. M.-J. Hamel); the *Université de Genève* (lead by Dr. C. Walther-Green); the *Université Catholique de Louvain La Neuve* (lead by Dr. S. Granger), Softissimo.com (the industrial partner, lead by T. Offenberg).

them for language learning and teaching purposes. These tools would eventually be integrated into a true ICALL environment; avoiding the building, from scratch, of new NLP tools. The hypothesis was that it would be a more effective way to reach a fully functional ILT system. Past experience had indeed shown promising results with NLP tools built from scratch in such systems, yet limited, namely in terms of scope, the robustness and the reliability of the analysis of the learner language input (Nerbonne 2003; Tschichold 1999). The main goal of the project was to handle a non-controlled language, that is, 'free' input from the learner, hence the name FreeText.

Reusing existing NLP tools created the need to find mature NLP tools that were being successfully used within other types of language engineering applications (e.g., translation, read-aloud systems). This also meant finding NLP tools with a wide linguistic coverage (not describing a sub-language or a micro-grammar), flexible NLP tools that could be adapted for other purposes and modular NLP tools that could be integrated into another type of environment.

Suitable candidates were found in the NLP tool suite for French being developed since the early nineties at the LATL (*Laboratoire d'Analyse et de Traitement du Langage)* by Eric Wehrli and his team. The suite consisted of: the French parser FIPS (French Interactive Parsing System) (Werhli 1997); the speech synthesizer FIPSvox (Gaudinat & Wehrli 1997); and the sentence generator GBGen (Etchegoyhen & Wehrle 1998). The project SAFRAN (op. cit.) mainly explored the use of speech synthesis for pronunciation purposes with FIPSvox being integrated into a CALL prototype, named SAFexo, for French pronunciation. It also explored the possibility of reusing the sentence generator GBGen (op. cit.) in dialogue-like CALL contexts (Hamel & Vandeventer 2000; Vandeventer & Hamel 2000).

Interestingly, the grammatical coverage of the parser FIPS was also measured against a corpus of 1 500 sentences. These sentences were extracted from a FSL grammar textbook. Such a corpus was collected for the wide variety of syntactic structures it represented and for the fact that it suitably matched the grammatical content typically being taught at the intermediate-advanced level. Results showed that 89% of the grammatical structures were being successfully analyzed by the parser FIPS; the remaining 11% of unsuccessful parses mainly being related to missing lexical descriptions (for some words in the dictionary), as well as a few missing syntactic descriptions (such as second predication for instance) (Hamel 2003: 208–215). FIPS was also measured against a small learner corpus of 7 000 words, the BULG corpus (Hamel 1996). Results showed that over 99% of the words in the learner corpus, despite the errors it contained, were tagged accurately (op. cit.: 221). As for the parsing activity itself, it turned out that FIPS never failed an analysis on the basis that a structure was unrecognized (which contained an ill-formed input), but rather provided a partial analysis for all recognized (i.e., well-formed) sub-structures ('chunks') within a sentence. Already, this proves to be a useful form of diagnosis, giving insight into the type of structures being (un-)successfully produced by learners. The output also presented a first idea of where errors occurred in the parse trees. Our corpus analyses thus prove FIPS to be robust. Within the course of the next project, FreeText, FIPS was to be reused for error

diagnosis purposes – as well as empirical data from a larger learner corpus, the corpus FRIDA (Granger, Vandeventer & Hamel 2001; Granger 2003), collected as a means to inform the error diagnosis and the didactic contents of FreeText. Before explaining the inner-workings of this diagnosis performed by FIPS in FreeText, let us first present the didactic concept and contents as they are found within the TM of FreeText.

3.2 The TM of FreeText

3.2.1 *The didactic concept*

The didactic concept of FreeText (Hamel 2003, 2006), elaborated at the CCL (Centre for Computational Linguistics) of UMIST[2], was largely motivated by an interactionist approach to SLA (Gass 1997) as it followed recommendations by Chapelle (1997, 1998). Consequently, within FreeText, language learning activities were developed using various exercise formats with the explicit aim of giving the learner a wide access to comprehensible input (a modified; an enhanced input) (Sharwood Smith 1991). These activities try to provide, through negative input or 'feedback' (Pica 1994), the opportunity to produce a comprehensible output (Swain 1995). The learner in mind is an intermediate- to advanced-learner of French; that is, a young adult studying or possibly majoring in the language at a post-secondary level. French is more likely to be his/her second language.

The pedagogical syllabus adopted for FreeText is essentially task-based (Prabhu 1987). The learner is involved in lifelike prototypical situations, focusing on the communicative strategies involved in the completion of set tasks. Within these tasks, the learner's attention is usually drawn implicitly and, sometimes more explicitly, to grammar. The tasks are also designed to raise grammatical consciousness (Loschky & Bley-Vroman 1993). Grammatical consciousness is known to facilitate noticing (Schmidt 1990), a conscious process by which the learner is made aware of gaps in the target language grammar. Once a gap has been discovered, he or she can consciously look for clues in the learning environment resources in order to fill this gap. In the FreeText environment, these resources include a 'mentor' (a pedagogical agent), a reference grammar, a glossary of terms (related to text linguistics) and access in free mode to the natural language processing tool suite. The latter comprises a spelling and grammar checker, a sentence structure viewer, a speech synthesizer and a translator. These resources will be discussed in greater detail later on.

Within FreeText, authentic documents are at the core of the language learning experience; they serve, above all, as a motivation for all suggested activities. Grammar is taught through the natural contexts provided by these documents, in which some linguistic features (Bronckart 1985) are brought to the foreground. The learner is asked to identify, extract, explain the presence of, modify, and reuse these linguistic features in other (dis)similar contexts.

2. In consultation with the CEFA (*Centre pour l'Enseignement du Francais et de l'Anglais*) of McGill University.

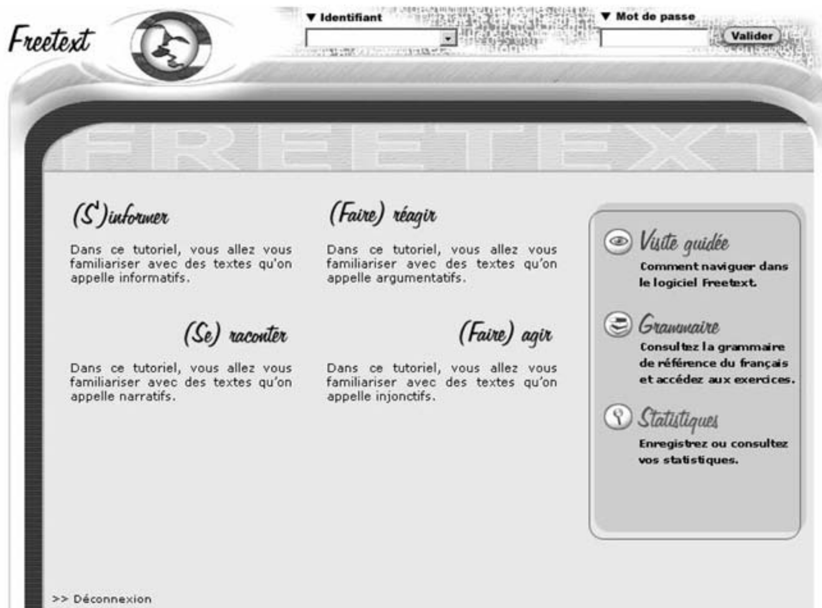

Figure 3. FreeText comprises four tutorials each dealing with a different text type

3.2.2 *The didactic contents*

The TM of FreeText consists of four tutorials in which didactic contents focus on four types of texts: *(S')informer* (informative text), *(Se) raconter* (narrative text), *(Faire) agir* (injunctive text) and *(Faire) réagir* (persuasive text). Figure 3 above shows the home page of FreeText, which gives access to the four tutorials.

The approach and textual units, advocated by Bronckart (1985), form the FreeText basis for assigning the textual functions associated with the four chosen text types. These units are essentially (morpho-)syntactic surface features; that is, certain types of pronouns, adjectives, verb tenses, verb modes and adverbs, which are salient in the chosen text types. Sixteen authentic (audio-/visual) documents exploit the four chosen text types. They have been carefully selected for the quality and the originality of their content, their level of complexity, their prototypical, as well as atypical characteristics in terms of text typology. Each authentic document is utilized through four main types of language learning activities: *Compréhension*, *Exploration*, *Manipulation* and *Création*.

3.2.3 *Compréhension activities*

Compréhension activities are designed to enhance learner awareness of the context in which an authentic document has been produced. They also ensure that the learner

Figure 4. Tutorial : *Raconter* > Text : *Les voleurs d'écriture* > Activity : *Comprehension* > Exercise : *Vocabulaire*

has actually understood the overall text message before getting into an analysis of its linguistic features. Four types of exercises are suggested here:

1. *Contexte de production*. These exercises focus on the extra-textual factors (Nord 1991) surrounding the production of the text through open questions asked of the learner. These questions could include: 'Who is the sender of the text?', 'Who is the text intended for?', 'What is the intention of the text sender?' or 'Which medium is used to convey the message of the text?'
2. *Vocabulaire*. These exercises reinforce some of the vocabulary used in the text. This reinforcement is done mainly for text comprehension purposes through association/elimination/fill-in-blank type questions.
3. *Jeux de mots*. These exercises also reinforce some of the vocabulary used in the text. This time, however, reinforcement is achieved through word games such as hangman, crosswords and dictations.
4. *Culture*. This is a section containing links to web sites related to the central theme(s) of the text.

Figure 4 above, selected from the *Compréhension* activity tab of the narrative text '*Les voleurs d'écriture*', demonstrates a *Vocabulaire* exercise with a multi-answer format.

3.2.4 *Exploration activities*

Exploration activities focus on the learner noticing, within the selected text, the linguistic/textual features characterizing it as a specific text type. The exercises aim at validating the learner hypothesis about the use of specific linguistic features within some communicative functions and in given textual contexts. The learner's attention is drawn to features that are either automatically highlighted in the text or waiting to be identified by him/her. A text analysis grid, developed by Bronckart (1985), and adapted for language learning and teaching purposes in FreeText, serves as the reference for the identification/extraction of linguistic features within the text. Features are distributed into three main textual categories:

1. *Participants* (*Destinateur; Destinataire*). The salient linguistic features in focus; for example, 1st/2nd person pronouns and adjectives, are linked with the (explicit/implicit) textual presence of the participants (the sender and the receiver of the text).
2. *Mise en Contexte* (*Prise de position; Ancrage dans la réalité*). The salient linguistic features in focus; for example, the use of a certain modality, a certain verb tense, is linked with the sender's (subjective/objective) textual implication and the receiver's temporal distance from the text.

Figure 5. Tutorial : *S'informer* > Text : *Les Voleurs d'écriture* > Activity : *Exploration* > Exercise menu (text analysis grid)

3. *Organisation* (*de la phrase; du texte*). The salient linguistic features in focus; for example, sentence types and complexity, sentence and textual cohesive markers, are linked with the overall organization of sentences and even the text itself.

Figure 5 above shows the *Exploration* activity tab of the narrative text '*Les Voleurs d'écriture*' giving access to exercises that focus on textual marks found in the selected text. There are also explanations about this particular text type provided by the 'mentor' (the animated pen character). The hypertext terms are further explained in the glossary of terms.

3.2.4 *Manipulation activities*

Manipulation activities target the reuse of a selection of linguistic features found in the texts. The exercises focus on grammatical reinforcement, especially as they center on forms. These forms are manipulated outside of their original textual contexts and placed within new, more controlled ones. Within these new contexts, the learner is asked to select, insert or modify the linguistic features and/or replace them by (near-) equivalents. Various formats have been designed to support these exercises, such as fill-in the blanks (with or without item options), pull-down menus, sentence/paragraph transformations, sentences to complete, and so on. The exercises are classified according to the same grid categories (*Participants; Mise en contexte; Organisation du texte*) found in the *Exploration* activities. Empirical data, namely error types/frequencies, extracted from the learner corpus FRIDA (op. cit.) were used to inform the choice, content and feedback of many of the exercises belonging to this section.

The following figure, selected from the manipulation activity tab of the argumentative text, depicts a sentence organization exercise focusing on the conjunctive clause:

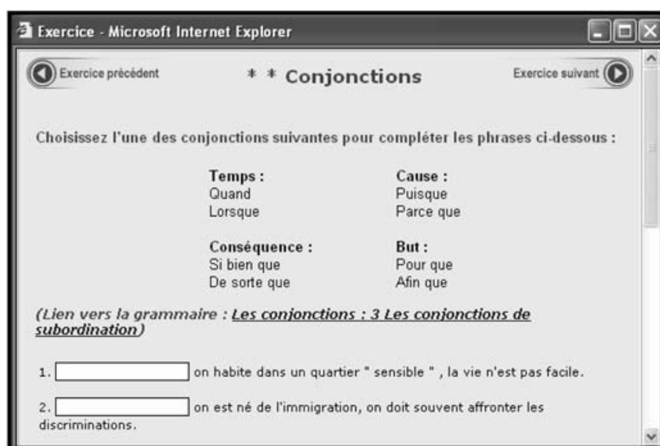

Figure 6. Tutorial: *Faire réagir* > Text: *Citoyenneté* > Activity: *Manipulation* > Exercise: *Organisation: de la phrase*

3.2.5 *Création activities*

Création activities are designed to be writing exercises in which the learner is asked to pastiche the original text by creating similar texts and reusing some of the linguistic features expected from the text type. The aim is to enhance the learners' overall writing skills by placing them within wider, less controlled contexts. While their format is open (a sentence, a paraphrase, a text has to be produced), all exercises are presented within a realistic scenario, leading to a set writing task, where specific linguistic features are expected (i.e., the learner input is thus somehow controlled).

The figure below, selected from the *Création* activity tab of the narrative text '*Les Voleurs d'écriture*', shows an exercise in which the learner is asked to complete the narrative story. In this particular case, s/he has asked for a model answer. The learner can still, at this stage, complete the exercise and have his or her text checked by the NLP tools (for which icons can be seen in the bottom right corner of the answer box).

Figure 7. Tutorial: *Raconter* > Text: *Les Voleurs d'écriture* > Activity: *Création* > Exercise > *text to complete (with model answer)*

3.3 The EM of FreeText

At the core of FreeText EM is FIPS, that is, the parser that has been adapted for error diagnosis purposes. FIPS, as previously stated, had wide grammatical coverage, as well as a large lexicon, and had been used successfully within several applications. It was used namely as a component of the larger multi-lingual machine-translation system, as well as a stand alone on-line parser. FIPS was also desirable in that it was a principle-based parser (cf. Matthew 1993, as seen above), being developed within a Government-Binding (Chomsky 1981) framework. Within such a framework, grammatical descriptions are made using general principles, which are valid for all natural language, while parameters are used to describe language specific configurations. FIPS was then to be transformed, from a simple parser into a fully functional error checking system. It would be an expert tool, providing French learners with a precise and accurate diagnosis on their (morpho-)syntactic errors, as well as detailed feedback on these errors that would be linked to some (explicit and implicit) pedagogical actions. The adaptations carried out on the parser for diagnosis (and feedback) were undertaken at the LATL (L'haire 2004; L'haire & Vandeventer Faltin 2003; Vandeventer 2001; Vandeventer Faltin 2003). The preferred technique was constraint relaxation which had the advantage of being easily implemented with the use of a principle-based parser such as FIPS. However, it also had the disadvantage of creating, at times, a proliferation of candidate structures, which would slow down the parsing process. Sometimes, it would even flag structures which did not correspond to errors. To at least partly bypass this problem, a phonetic reinterpretation technique was added on to the diagnosis process (op. cit.). This involved providing some words (those found at the hedges of partial analyses) with their corresponding phonological representations. This was achieved by reusing the speech synthesizer FIPSvox (op. cit.) in an attempt to reevaluate their word's part-of-speech category. Although useful, this technique was limited by errors involving homophones that had different parts-of-speech.

Thereafter, L'haire (2004) explored a sentence comparison technique as another, more semantic form of diagnosis. This meant comparing the sentence output provided by the learner with a model produced by the sentence generator GBGen (op. cit.). Although deemed valuable, the second technique was explored later in the project and, unfortunately, was not implemented on time in the FreeText environment. As a result, the error categories recognized by FIPS in FreeText are essentially (morpho-)syntactic ones. Priorities were given to errors that occurred frequently in the learner corpus FRIDA (op. cit.). These were, for instance, errors related to problems of agreement (gender, number, subject-verb), use of prepositions and homophones, placement of the adjective, and so on. The performance of FIPS for error diagnosis is comparable to that of the grammar checker in MSWord (L'haire & Vandeventer 2003). It is a performance far different from that of many stand-alone commercial grammar checkers for French, such as *Antidote* or the *Correcteur 101*, but nevertheless acceptable in that it

comes enhanced by other forms of reliable didactic support within the CALL environment itself.

Because the FIPS parser is used as both the expert system and a tool for diagnosis purposes, the boundaries between the EM and the LM within FreeText are not clear. In the next section, we will specifically concentrate on how diagnosis is triggered in FreeText and what type of diagnosis and feedback the learner can rely on within the CALL environment.

3.4 The LM of FreeText

Within FreeText, error diagnosis provided by FIPS is triggered in all exercises calling for open answers. We are essentially referring to exercises in which the input produced by the learner is not controlled (i.e., he or she is 'free'). If such exercises are found in all four types of activities, they are standard in creation ones. The learner can also run FIPS as a stand-alone application within FreeText to analyze any sentence he or she wishes to test. Learners can also use FIPSvox the same way, that is, listen to any written language segment they wish to test. Within the NLP tool space of FreeText (under the tab: *Outils*), the learner has independent access to the full suite of NLP tools: an independent spell-checker (developed by Softissimo); the grammar checker (FIPS); the speech synthesizer (FIPSvox); a part-of-speech colored output (FIPStag, referred to as *la grammaire en couleur*); a syntactic tree output (FIPS display, referred to as *l'arbre grammatical*); a French-English translator (developed by Softissimo); a verb conjugator (developed by the LATL). Figure 8 below shows the window that gives access to all NLP tools in FreeText:

Figure 8. *Outils* i.e. the NLP tools in FreeText: a spell-checker; a grammar checker; a part-of-speech colored output; a syntactic tree output; a speech synthesizer; a translator; a verb conjugator

There are two types of diagnosis found in FreeText: 'standard' and 'smart'. Standard diagnosis is performed automatically, in a standard manner (pattern matching; (in-)correct answer anticipation). It is carried out on an input provided by the learner in response to a close-format question. Such questions are typically found in some *Compréhension* and *Manipulation* activities and consist of multiple-choice/answer, fill-in-the-blank, pull-down, association and true or false type exercises. Attached to this standard diagnosis is a corresponding standard feedback (also anticipated) which presents itself as a general (sometimes item/error specific) comment, a (non-cumulative) score and, when needed, the correct answer.

Diagnosis which is 'smart' is triggered by the analysis performed by NLP tools on an input. This input is provided by the learner in response to an open-format question. As mentioned above, such questions are typically found in exercises where the answer cannot be anticipated (some of it can be, but it still contains a certain level of unpredictability). Feedback, in this case, is specific and comes as a comment attached to each local spelling and grammatical error found within the learner input. The part(s) of the sentence where principle/parameter violation(s) has or have occurred is or are highlighted. A short, but clear metalinguistic explanation about the nature of each error is provided to the learner. If an error involves a verb conjugation (as it is the case in the figure below), automatic access is given to the verb conjugator. The following figure shows the diagnosis and feedback provided on a sentence analyzed by FIPS, which contains a determiner-noun and noun-verb agreement error:

Figure 9. Diagnosis and feedback provided by the parser FIPS in FreeText

Figure 10. *La Grammaire en couleur*: the part-of-speech colored output

Any error found is also automatically linked to the section in the reference grammar (developed by the LATL) dealing with the grammatical theme(s) involved. This section provides the learner with further comprehensive metalinguistic explanations. From this particular section in the reference grammar, the learner can access all exercises in FreeText (regardless of tutorials, text and activity types) which exploit the grammatical theme(s) at hand. As further feedback, the learner also has the possibility to visualize a part-of-speech output of his or her sentence and/or its syntactic tree representation. Figure 10 illustrates the visual feedback provided by *la grammaire en couleur* output (i.e., the part-of-speech colored output).

The LM of FreeText also comprises a rather comprehensive tracking system. This tool enables all answers provided by the learner to be stored and retrieved. The same goes for scores obtained (per exercise and compiled statistics, i.e., cumulative scores), for progress made (exercises completed and not completed) and for resources consulted (which resource, when, and how many times). To date, no system decisions have been attached to these stored data. While the learner can access his or her own profile information, the teacher can access both the individual and the group profile information. Figure 11 displays FreeText's comprehensive student tracking system.

Tableaux de données sur les exercices

Changez de texte ou de tutoriel : Choisir un tutorial ou un texte

	Score moyen	Exercices effectués	Exercices à faire	Taux de réalisation
Tutoriel : (S') Informer	21.47 %	15	178	8 %
>> La naissance de la vie sur Terre	21.86 %	3	50	6 %
>> Eric Voltzenlogel, Chef de projet internet		3	43	7 %
>> L'Université du Vin	10 %	8	39	21 %
>> Francophonie		1	46	2 %
Tutoriel : (Se) Raconter	88 %	14	192	7 %
>> Faits divers		0	46	0 %
>> L'Aveugle et le Paralytique	88 %	2	47	4 %
>> Louis Pasteur		0	43	0 %
>> Les Voleurs d'écriture		12	56	21 %
Tutoriel : (Faire) Agir	74.4 %	5	142	4 %
>> Allergie aux acariens		0	33	0 %
>> Le conducteur responsable	82 %	3	34	9 %
>> Gare aux ours !	40 %	1	38	3 %
>> Rue de la Gaîté	86 %	1	37	3 %
Tutoriel : (Faire) Réagir	0 %	3	139	2 %
>> Femmes: il reste du chemin à faire		1	37	3 %
>> Monganga		0	35	0 %
>> Citoyenneté	0 %	2	32	6 %
>> Ça commence aujourd'hui		0	35	0 %

Outils	Nombre d'utilisation
Grammaire de référence :	84
Glossaire :	26

Figure 11. FreeText student tracking system

3.5 The IM of FreeText

FreeText is a web-based multimedia interface[3] that has been developed using standard on-line development tools such as HTML, Java scripts, CGI, databases, and so on. The interface was designed to be flexible so that its navigation would never become linear or circular but rather remain multi-angled. This thus gives the learner the possibility to access (or leave) any type of information at any time, and from any place within the learning environment. Typically, the learner is invited to first select one of the tutorials, then to choose one of its authentic documents. These documents can be read and/or listened to (visualized, if audio-visual) in their original version or in their simple text version. Some words are provided, through hypertext links, with synonyms or short definitions. From the selection of a text, learners can access the four types of activities by using a horizontal pull-menu on the left and can select one which they wish to explore. They are invited to do so in the order presented above; however, these can be explored in any particular order and the exercises found in each activity area can also be completed in a manner to the liking of the learners. It is worth mentioning that they

3. UMIST is responsible for the CALL concept, the blue print/first CALL prototype. The subsequent prototypes, including the final one, were developed by Softissimo.com, in close collaboration with UMIST.

can also be completed in a horizontal manner using the arrow situated on the top corner of the exercise window (cf. figure 7). All exercises are presented in a pop-up window, over the main window, displaying the authentic document. A dynamic navigation path, located at the top of this working window, indicates where the learner is situated in the learning environment. The top zone of the interface is static, with icons giving access to both the home page (with the four tutorials) and the authentic documents (of the selected tutorial). Below this zone is the tab menu (cf. figure 7), which surrounds the main working environment, containing tabs that bring one of the following to the main window: the authentic document; the current exercise (if selected); the mentor (if activated); the reference grammar menu (last page consulted); the glossary of terms; the activity menu; the NLP tool window. Learners can also track their progress while working within the environment by logging on to their learner profile from the home page where they can also change passwords, preferences, and so on.

FreeText also has its own authoring shell, which enables the teacher to build a completely new tutorial. He or she can do this by selecting and annotating his or her own authentic documents and creating, within the activity types of his/her own choice, a variety of exercises using the format templates provided. It is accessible via the hidden administrative area of FreeText, as is the case for the student tracking system and for other administrative options.

3.6 Final outcome of the FreeText project

With a database of over 600 exercises, FreeText[4] offers over 80 hours of multimedia language learning activities. These activities, which focus on grammar through text comprehension and text production, are geared towards French learners from intermediate to advanced levels. Linguistic resources, as well as the use of natural language processing tools to support the diagnosis of 'free' input provided by the learner, greatly enhance this CALL environment, rendering it more knowledgeable, flexible and efficient. A student tracking system, as well as a teacher authoring tool, further enhances the system's overall flexibility. For its components and characteristics, FreeText is truly a 'smart' CALL application. However, although it can be considered a knowledge-based application, with fairly comprehensive EM and TM, some work remains to be done at the LM level in order for FreeText to be called an 'intelligent' CALL application. For example, insomuch as diagnosis on learner input is concerned, the implementation of the sentence comparison techniques explored by L'haire (2004) would certainly improve the breadth/scope of analysis and enable feedback to be provided on meaning, as well as form. A greater use of empirical data such a those collected in error-annotated corpora, like FRIDA (op. cit.), would also benefit the error diagnosis (Granger, Kraif, Ponton, Antoniadis & Zampa 2007). Moreover, information gathered

4. A final prototype of FreeText is available for testing at the following internet address: http://129.194.19.89:8001/

in the student tracking system could be automatically linked to (implicit/explicit) pedagogical decisions/actions, which would further individualize the language learning experience with FreeText, allowing the leaner to have more control over his/her own learning. Further research, funding and collaboration are necessary to implement these suggestions and maintain the IM. That being said, with its authorable TM and its accessible EM at the learner request for testing, or simply as a resource, FreeText stands as being more flexible than the usual ILT, which tends to have a fairly rigid structure (cf. Heift 2002).

The overall experience of FreeText remains quite positive. This can be said especially since a fully functional 'smart' and information-filled CALL prototype has been developed; a prototype reusing pre-existing NLP tools which have been adapted and informed by empirical data. The latter, of course, coming from a learner corpus, for error diagnosis purposes. The initial goal of the project has thus been reached.

4. Conclusion

In this chapter, we have presented some fundamentals about intelligent tutoring systems. More specifically, we have focused on ITSs dedicated to language learning and have seen that within these systems, natural language processing techniques are prevalent. Diagnosis of learner language uncontrolled (i.e., free) input is core within intelligent language tutors and mainly achieved through parsing techniques. ITSs are for that reason able to provide each learner with sophisticated feedback on his or her own language input which, as a result, further individualizes his or her language learner experience. This represents a great departure from the rigidity and lack of flexibility found in earlier, more traditional CALL systems; although, as we have seen, NLP-based diagnosis remains fairly restricted in terms of the scope of its ability to handle linguistic error coverage. However, as is the case with any type of technology, it is expected that learners (namely more experienced ones) exposed to didactically sound, content rich language learning environments, such as the one provided by FreeText, will gradually learn to develop a certain tolerance *vis-à-vis* NLP technology. This technology, along with strategies, will enable learners to function within its boundaries, while also learning to make most of its 'smartness'.

5. Directions for future research

I will briefly address some possible avenues for the research. FreeText has since been used in a real classroom context. In Hamel (2006), in reference to this context, I have observed that using NLP tools for dedicated language tasks such as text writing and revising, in particular, had an overall positive impact on most language learners. The

NLP tools in FreeText triggered their curiosity and, because of the various explicit forms of language representations they are able to provide, they seemed to push learners towards getting a much closer, deeper look at authentic language input. By facilitating learners' testing and verifying their many language hypotheses, the NLP tools also fostered critical thinking, problem-solving and decision-making skills. They also raised a greater awareness on issues such as L1-L2 transfer and lexical, grammatical and/or semantic ambiguities, which are involved in the automatic processing of natural languages and related to the learning of foreign languages. Finally, the NLP tools seemed to promote the learners' autonomy and their language creativity. As stated in Hamel (2006), these remain classroom observations and it is evident that empirical data need to be collected and analyzed more formally if we wish to provide a more objective measure of the relevance and usefulness of NLP tools in CALL environments, as well as their impact on the language learning process and outcome. Little has yet been done in that direction (cf. work by Heift 2002 and 2003 on learner errors and feedback in ICALL, for instance).

Data collection however, might turn out to be challenging. A common problem found with several collaborative, large scale NLP-based CALL research initiatives like FreeText, is a lack of resources (financial and human) to maintain and update the developed systems once projects have reached completion. The contribution and commitment of industrial partners and/or university-based spin-off companies in these research initiatives become in my opinion crucial when it comes time to ensure the viability of the applied research outcome and its dissemination. Also, several experimental and potentially interesting NLP-based CALL systems are not sufficiently portable to be made accessible to language practitioners and CALL researchers. While CALL developers (which often are also CALL practitioners) make efforts to use and test their own applications with language learners, they are not necessarily the best experienced to do so. As a result, there is an evident lack of research advances in testing language technology in or for CALL purposes. Meanwhile, some are opting to use a generic, stand-along language technology for language learning purposes. With on-line teaching and learning platforms such as BLS (WebCT) and CALL software development tools such as HotPotatoes, language practitioners can now develop their own CALL environments and, within these, embed/plug-in some readily available NLP tools such as grammar checkers, for instance. For French, these could be *Antidote* or *Correcteur 101* which are widely used commercial CDRom applications, or *BonPatron*, a newer and free on-line application specifically geared towards L2 French language learners. Again, when it comes to using these tools with learners, empirical evidence has yet to be gathered.

Parsers, which we said are core in NLP-based CALL applications, essentially focus on morphology and (local) syntax. This is the case with the NLP tools found in FreeText. Although 'grammar' is important in SLA, lexicon remains core (e.g., Bogaards & Laufer 2004; Nation 2001, among others). Our recent lexical error analysis of a learner corpus points to the fact that intermediate to advanced learners of French lack lexical

knowledge, in particular knowledge in selecting words that are part of complex lexical units such as collocations (Hamel & Milicevic 2007). Informed by such empirical data, CALL should therefore be more centered on the lexicon (Nesselhauf & Tschichold 2002; Tschichold 2006). This motivates our current research project called *Dire autrement,* which aims at the elaboration of aims to elaborate a CALL 'reformulation' dictionary, a dictionary focusing on the lexical encoding needs of intermediate to advanced learners of French (Milicevic & Hamel 2007). Our research efforts are at the moment mainly devoted to pedagogical lexicographic issues, namely the provision of detailed lexicographic descriptions for circa 1000 lexical entries (op. cit.). Some of these efforts are also dedicated to CALL design issues, namely ergonomic ones (i.e. user-centered) which have rarely been investigated in CALL (cf. however work by Raby 2005, for instance) and even less to my knowledge within the particular context of designing an on-line learner reformulation dictionary such as the one we envision. Thus far, our work has involved 'portraying' the types of users, language tasks and learning environments for which the lexical resource planned will be used, as well as 'benchmarking' three well-established French electronic dictionaries against a set of ergonomic criteria. These results have yet to be published.

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CHAPTER 4

Specific language impairment in French*

Celia Jakubowicz and Laurice Tuller
CNRS-University of Paris V, François-Rabelais University, Tours (INSERM U930 Imagerie et cerveau)

Ce chapitre présente une vue d'ensemble de la recherche internationale sur l'acquisition du français dans le contexte d'un Trouble Spécifique du Langage (dysphasie, SLI, TS(D)L), soulignant des contributions de cette recherche pour notre compréhension actuelle de cette pathologie, mais aussi notre compréhension de la structure du français, et, plus généralement, notre compréhension de l'organisation de l'esprit pour le langage. Après une revue des propriétés fondamentales du TSL (définition, prévalence, étiologie, pronostic à long terme, sous-types), avec référence particulière au contexte clinique en France, nous considérons les propriétés grammaticales du TSL en français, suivi d'une discussion de la notion de marqueur clinique pour le TSL. Une attention particulière sera accordée à l'hypothèse que le TSL serait lié à la nature de l'interaction entre la faculté du langage proprement dite et des systèmes de performance, et des motivations pour ce point de vue seront présentées à partir de travaux sur des constructions particulières chez les enfants TSL francophones, de travaux sur l'évitement de certaines constructions chez des enfants plus âgés et des adolescents, et de travaux dans lesquels des sujets avec TSL sont comparés à des sujets apprenant le français dans d'autres contextes atypiques (surdité, épilepsie) ou comme langue seconde.

This chapter presents an overview of international research on acquisition of French in the context of SLI, highlighting contributions this research has made to our current understanding of this pathology, but also to our understanding of the structure of French and, more generally, our understanding of the way the

* This paper was conceived and begun as a collaborative effort. Alas, the second author finished it alone, hoping not to have betrayed the ideas of Celia Jakubowicz, whose contribution to the study of SLI has been enormous, and whose role in stimulating research on acquisition in France and elsewhere has been decisive. All errors of interpretation are imputable to the second author, who gratefully acknowledges the patience and encouragement of Dalila Ayoun in the gestation of this article, as well as the comments of Nelleke Strik, Anne Zribi-Hertz, and two anonymous reviewers.

mind is organized for language. After a review of the fundamental characteristics of SLI (definition, prevalence, etiology, long-term prognosis, subtypes), with specific reference to the clinical setting in France, we provide an outline of the grammatical characterization of SLI in French, which is followed by a discussion of the notion of clinical marker for SLI. Proposals made to explain these findings in the context of cross-linguistic research on SLI are reviewed. The hypothesis that SLI is linked to how the language faculty proper interacts with performance systems is given particular attention, and support for this view is presented from work on SLI in French from study of specific constructions in children with SLI, from study of how older children with SLI and adolescents avoid certain constructions, and from studies in which subjects with SLI are compared with subjects learning French in other atypical contexts (deafness, epilepsy) or as a second language.

1. Introduction

Specific Language Impairment (SLI) is a behaviorally defined syndrome affecting language development in children. Language is (very) slow to emerge in children with SLI, and remains (severely) impaired throughout childhood, and beyond. In the absence of any biological confirmatory test, SLI is currently diagnosed by neuropediatricians on the basis of severe language impairment without any potential source of explanation for this. Thus, these children show no signs of neurological damage, nor do they have low non-verbal intelligence, hearing loss, a deficit in oral motor skills, or a pervasive developmental disorder such as autism. 'Specific' is thus intended to mean that the impairment observed in the child is restricted to language.

SLI has been studied for over 150 years (see Leonard 1998; Lardy 1994) under various labels. 'Congenital aphasia' was the term used in the early 1900s in English and French publications. The term 'aphasia' was retained for quite some time, though with new declinations: 'infantile aphasia', 'developmental aphasia'. In the 1960s, a new term, more clearly distinguishing 'developmental aphasia' from 'aphasia', which refers to language impairment resulting from brain injury, emerged and continues to be the most frequently used term by clinicians in France: 'developmental dysphasia', or simply 'dysphasia'. This entity has become more sharply defined with time. Children with language impairment due to brain injury ('acquired aphasia') are no longer included in this category, nor are children whose language development is disrupted by onset of epilepsy (as in the Landau-Kleffner syndrome). Currently, the most widely term used in the research literature is Specific Language Impairment (*Trouble Spécifique du Langage* (*TSL)* in Jakubowicz 2007), and this term has made inroads in clinical usage in France as TSDL, "*Troubles spécifiques du développement du langage*" (Chevrie-Muller 1996), though many, if not most, clinicians continue to use the term *dysphasie*.

Within the French clinical context, *dysphasie* 'dysphasia' is used in opposition to *retard (simple) de langage* '(simple) language delay', a term roughly equivalent to the term "late talkers" used in the anglophone context. Most neuropediatricians in France prefer to use the term *retard* for children under age five or six, the age at which more reliable non-verbal intelligence scores may be obtained, as well as the age at which it is deemed that language impairment is not only severe, but long-lasting (see Ménager 2004). The identification of SLI at an early age is widely acknowledged – even in the international literature (see Leonard 1998) – to pose problems, in that late-talkers identified below age three or four vary greatly in their language outcomes, many of them having no significant language impairment by the age of five or six. The conclusion given in the French clinical setting for children with observed language difficulties prior to age five or six (or even up until age eight) is typically rendered in terms ranging between 'late talker' to 'at risk for developmental dysphasia' to 'strong suspicion of dysphasia'.[1] In the North American context, and in some other European countries, SLI tends to be diagnosed considerably earlier.[2] It is important to keep this difference in mind when comparing studies on language development in children with SLI.

It is also important to keep in mind the fact that, although the definition of SLI is much sharper than before, it is not just the age at which children are diagnosed which varies in published studies on SLI, but also exactly how the definition given above is implemented. While it is clear how a verdict of normal hearing is arrived at (pure tone average in each ear at a threshold of 20 dB), and how neurological dysfunction can be ascertained (EEG, etc.), the exact cut-off for nonverbal intelligence is not as clear. Children in France, studied in some published work, may have a nonverbal IQ as low as 75 or 80, though most international research is limited to children with a nonverbal score of at least 85 (see Leonard 2003). Besides the fact that the standard error of measurement means that it is very hard to affirm a clear difference, strict use of nonverbal cut-offs brings up further and bigger problems when SLI is studied after childhood, as it is well known that, with age, nonverbal IQ may be influenced by language impairment.[3] The most important criterion though is the characterization of language ability itself, and here there is even wider discrepancy in cut-offs used. General practice is to require a composite standard score, calculated over two to four subtests tapping different areas. A diagnostic of SLI is based on an overall score of this type which is well below the mean. The precise definition of "well below" varies in the literature: there is some agreement, however, on a cut-off of -1.25 SD, though in many studies a stricter criterion is applied (-1.5 or -2 SD). And, of course, the score in question depends in

1. See also Piérart (2004) on clinical practice in European French-speaking countries.

2. For a summary of age ranges found in studies of French-speaking children with SLI, see note 11.

3. Billard, Oisel Dufour, Gillet, and Ballanger (1989), in a follow-up study of 12 subjects diagnosed, following ordinary exclusionary criteria, between age 7 and 9 several years later at ages 16 to 23, found that 4 subjects had low PIQ (2 of them very low – 45 and 59).

part on the specific tests used, which vary widely not only between languages and between countries, but also within a given country.

Given the above considerations, it is not surprising that reported prevalence rates for SLI also vary. There is, however, a rate which is widely accepted in the research literature, that of around 7%. The consensus around this rate is based on the very large epidemiological study carried out in the United States by Tomblin, Records, Buckwalter, Zhang, Smith and O'Brien (1997) with over 6,000 five-year-olds. Using the criterion for language impairment of at least – 1.25 SD below average on at least two out of five composite language measures, the prevalence found in this study was 7.4%. SLI is thus rather frequent. It also affects boys much more often than girls, with ratios which well exceed 2:1 (Leonard 1998, 2003; Tomblin 1996; Tomblin et al. 1997). Gender is not the only risk factor which points toward a genetic etiology for SLI. Familial studies and twin studies provide striking evidence: several studies have shown that the prevalence of SLI is significantly higher in families of children with SLI, than in families of children with normal language development, and there are also a number of studies comparing concordance rates between monozygotic twins and dizygotic twins, the former displaying significantly higher rates of concordance (see Bishop, Adams & Norbury 2006; Stromswold 2006, and references therein).

Language impairment in SLI is typically described to be 'severe and long-lasting'. Just as the term 'severe' is subject to varying interpretations, the meaning of 'long-lasting' is equally rather nebulous. While it is clear that children with SLI continue to have difficulties with language throughout childhood, there are far fewer studies of adolescents and adults who were diagnosed in childhood with SLI than there are of children with SLI. The existing studies (see Leonard 1998 and Tuller, Henry & Barthez 2008, for reviews) indicate that 'long-lasting' generally, or at least quite often, means continued difficulties in adolescence and in adulthood, though it is not currently known exactly how these difficulties resemble or differ from those observed in childhood.

Before concluding this review of the fundamental characteristics of SLI, the question of the homogeneity of the syndrome must be addressed. Perhaps one of the most difficult questions facing research on SLI is that of the existence of subtypes based on affected language domain and/or on the extent to which expressive versus receptive modalities are affected (see Leonard 2003; van der Lely 2003). A number of classifications have been proposed, including those officially listed by the DMV-IV (American Psychiatric Association 2000) and the World Health Organization (1992). Most of these classifications recognize a form of SLI, the most prevalent one, which involves impairment of the formal aspects of language (morphosyntax and phonology) in production, with comprehension being relatively spared. This form is referred to in France as 'phonologico-syntactic dysphasia'. Most published studies are on children with this type of SLI. Other children – a much smaller percentage – appear not to show the production-comprehension dichotomy, and are sometimes referred to as having 'receptive SLI' or 'language comprehension impairment'. All clinicians and researchers agree that there is definitely variation in the severity of deficit, whichever domain may be affected.

We propose to take a look at SLI in French, concentrating on morphosyntactic impairment, an aspect of language impairment in SLI which is both widespread and persistent. We begin in Section 2 with an outline of the grammatical characterization of SLI in French. This outline is followed in Section 3 by discussion of the notion of clinical marker for SLI, French sharing properties found in other Romance languages, when compared to English (and other Germanic languages). Proposals made to explain these findings in the context of cross-linguistic research on SLI are reviewed in Section 4. Particular attention is given in Section 5 to the idea that SLI is linked to how the language faculty proper interacts with systems used in language performance, and support for this view is presented from work on SLI in French stemming from the study of specific constructions in children with SLI, from the study of how older children with SLI and adolescents avoid certain constructions, and from studies in which subjects with SLI are compared with learners of French in other atypical contexts (deafness, epilepsy) or as a second language.

2. Grammatical semiology of SLI in French

One of the areas of particular difficulty for children with SLI is that of grammatical morphemes – elements which express purely grammatical information such as gender, number, person, tense, and so on. Another is constructions involving syntactic movement operations, such as wh-movement. In SLI, functional features and morphemes are often omitted or are substituted for, systematically or optionally, depending on the target-language and the age of the child/severity of language impairment. Likewise, constructions involving syntactic movement are difficult for children with SLI, who tend to avoid them in various ways. Determiners, pronominal clitics, synthetic and analytic tenses, and gender and number agreement, as well as wh-movement have been the subject of considerable study in generative work on SLI in French, and, more generally, there are active groups conducting research on the grammatical semiology of SLI in French-speaking countries (France, Belgium, Canada and Switzerland).[4] We present here briefly the grammatical semiology of SLI which emerges from studies of French-speaking children which have focused on these different grammatical items or processes. In this first descriptive section, we concentrate on production data (elicited or spontaneous). We return to these phenomena in the remainder of this chapter, detailing results (from production and comprehension) which shed light on what a clinical marker for SLI (in French) might correspond to (Section 3), on how the semiology of SLI can be accounted for (Section 4), and how studies of

4. Recent doctoral dissertations include Royle (2001, University of Montreal), Maillart (2003, Catholic University of Louvain), Cronel-Ohayon (2004, University of Geneva), Ménager (2004, University of Tours) and Roulet (in preparation, University of Paris V).

SLI in French provide evidence for the relevance of the notion of derivational computational complexity (Section 5).

2.1 Tense

Whereas children with SLI learning English – as well as Germanic languages in general – display optional omission of tense-marking, resulting in constructions termed 'root infinitives', where non-conjugated verbs are produced in contexts where these are not permitted in the target language, such as in root clauses (Rice & Wexler 1996; Wexler, Schütze & Rice 1998, among others), studies of francophone children with SLI have not generally found this phenomenon to be as prevalent (Jakubowicz & Nash 2001; Paradis & Crago 2000). However, Hamann, Cronel-Ohayon, Dubé, Frauenfelder, Rizzi, Starke and Zesiger (2003) report that at least some very young francophone children with SLI (ages 3 to 5, ages not part of the previous studies) produce high rates of root infinitives, which were not found in the older children (aged 5;7 to 7;11) they studied (see Hamann 2004, this volume).[5] A more generally recognized difficulty with tense-marking in French-speaking children with SLI, is production of the auxiliary *avoir* 'have' or *être* 'be' in compound verb tenses (Jakubowicz, Nash & van der Velde 1999; Paradis & Crago 2000; Jakubowicz & Nash 2001; Jakubowicz 2003a, b), a property also found in Italian-speaking children with SLI (Bottari, Cipriani, Chilosi & Pfanner 1998). That this difficulty is related to tense-marking and not to the specific grammatical words *avoir* and *être* per se is shown by the fact that these words are more frequently omitted as auxiliaries than as copulas or main verbs, also true, once again, for Italian-speaking children with SLI. Likewise, Paradis and Crago (2001) show that it is not the low phonetic salience of these auxiliaries which can be held responsible for this difficulty, as a comparison between auxiliary *a* 'has' and the homophonous preposition *à* 'to' revealed that the latter was produced most of the time, in contrast with the former.

Difficulty in producing compound tenses is illustrated in (1)-(4) with examples of responses of children with SLI in an elicited production task for items requiring use of the compound past tense (Jakubowicz et al. 1999; Jakubowicz & Nash 2001). The expected response with compound past tense, the only grammatical means for expressing past punctual events in spoken French, is given in parenthesis (=), followed by the age of the child with SLI who produced the particular unexpected response. These examples show how these children get around producing a compound tense, while generally preserving the past tense meaning. The most frequent strategy was production of a (resultative) sentence with *être* or *avoir* as main verb as in (1), but children also had recourse to present tense sentences as in (2), or sentences in which the verbal element is ambiguous between a past participle and a simple present tense, often with the aspectual light verb *finir* 'finish' as in (3). The examples in (3) also illustrate the fact

5. Thordardottir and Namazi (2007) also report both bare infinitive and bare past participles in their study of a group of twelve 3- and 4-year-olds identified as having SLI or language delay.

that verb forms were often ambiguous between the simple present tense and the past participle (which in many cases are identical in oral French). Another frequent response pattern, illustrated in (4), was sentences containing a modifier with a resultative meaning ('already', 'all'), some of which show unambiguous auxiliary omission.

(1) a. *il est ouverte* (= *Elle a ouvert la fenêtre*) (5;10)
3ms is open-3fs
'it is open' 'she has opened the window'
b. *elle a un beau gâteau* (= *Elle a fait un gâteau*)
'she has a nice cake' 'she has made a cake'
c. *le (pe)tit nounours est lavé* (= *Il a lavé le nounours*) (8;1)
'the little teddy is washed' 'he has washed the teddy'

(2) *i(l) montre le dessin à sa maman* (= *Il a dessiné une maison*) (5;7)
'he shows the picture to his Mom' 'he has drawn a house'

(3) a. *i(l) fin[i] de mettre son pantalon* (= *Il a mis son pantalon*) (7;3)
'he finish-PR/PP of put-INF his pants' 'he has put on his pants'
b. *i(l) fin[i] bross[e]* (= Il a brossé ses cheveux) (7;3)
'he finish-PR/PP brushes/brushed' 'he has brushed his hair'
c. *e(lle) fait Maman* (= Elle a écrit "Maman") (6;4)
'she do-PR/PP Mom 'she has written "Mom"'

(4) a. *i(l) tout bu* (= *Il a bu le biberon*) (7;0)
'he all drunk' 'he has drunk the bottle'
b. *i(l) déjà coll[e]* (= *Il a collé les gommettes*) (5;6)
'he already stick-INF/PP' 'he has stuck the stickers'

Productions like these indicate that children with SLI do not have difficulty with temporal reference – they know that the event in question is finished and past (and when asked if an action is over, do not hesitate in responding correctly). Additional support for this is provided by Paradis and Crago (2000) who found that children with SLI were almost always correct in their choice of a temporal adverbial, even though they were not always correct in their choice of grammatical tense.

2.2 Determiners and pronominal clitics

Another dissociation between homophonous grammatical morphemes – one of which is highly affected and the other is not – involves determiners and pronominal clitics (see Hamann, this volume, for presentation of the syntax of clitics in French). Mirroring the disparity found for English between the homophonous plural morpheme and third person singular present tense marker (Rice & Wexler 1996), studies of French-speaking children with SLI have shown that while pronominal object clitics *le* 'him' and *la* 'her' are very difficult for these children, homophonous definite determiners are

relatively unaffected (Jakubowicz et al. 1998).[6] The former display high omission rates, high avoidance rates corresponding to production of a discursively infelicitous lexical DP (as in 6a), both in elicited production tasks (Jakubowicz et al. 1998; Chillier, Arabatzi, Baranzini, Cronel-Ohayon, Deonna, Dubé, Franck, Frauenfelder, Hamann, Rizzi, Starke & Zesiger 2001; Ménager 2004; Tuller, Delage & Monjauze to appear) and in studies of spontaneous language samples (Hamann 2003, 2004; Hamann et al. 2003; Paradis, Crago & Genesee 2003; Ménager 2004). Examples of responses obtained on elicited production of accusative clitics, reported in Jakubowicz et al. (1998) are given in (6), which correspond to the test item presented in (5).

(5) a. Examiner question: *Que fait Nounours à Kiki?*
what does Teddy to Kiki
'What's Teddy doing to Kiki?'

b. Expected response: *Il le lave.*
he him washes
'He's washing him'

(6) a. *i(l) brosse Kiki* (5;7)
'he brushes Kiki'

b. *i(l) lave* (10;10)
'he washes/is washing'

c. *i(l) passe le mouchoir* (10;4)
'he hands the hankerchief'

Accusative clitics such as *le* and *la* are not only more difficult than their determiner counterparts, they are also more difficult than other pronominal clitics – both nominative clitics and reflexive clitics, though the latter are harder for children with SLI than the former. The hierarchy of production rates reported in Jakubowicz et al. (1998) and confirmed in subsequent studies was the following: definite determiners had higher production rates than accusative clitics, nominative clitics had higher production rates than accusative clitics, and reflexive clitics had higher production rates than accusative clitics. No other significant differences were found between these elements.

2.3 Gender and number marking

Gender marking (on determiners, adjectives, and pronouns) and number marking (on determiners, pronouns, and verbs) in French-speaking children with SLI are both highly prone to error, as measured on elicited production tasks (Chillier et al. 2001; Roulet 2007; Franck, Cronel-Ohayon, Chillier, Frauenfelder, Hamann, Rizzi & Zesiger 2001; Maillart 2003; Roulet-Amiot & Jakubowicz 2006; Tuller et al. to appear) and as observed in spontaneous language production. Errors produced by these children are

6. See also Le Normand, Leonard and McGregor (1993) on articles, and Maillart (2003) on the dissociation between definite determiners and accusative clitics.

not 'wild', but rather indicate use of a default form: masculine in place of feminine is much more predominant than the opposite, and, likewise, singular is substituted for plural, but rarely the contrary. There is furthermore no obvious reason to conclude that children with SLI do not use inflection. Thus, feminine or plural marking may sometimes be produced for a given word, and sometimes not, and when these marked forms are used, they are almost always correctly used (in the correct form and in the appropriate context). As is the general case for the grammatical semiology of SLI in French, errors are optional.[7]

2.4 Wh-constructions

Another area of the grammar of French which has received attention in studies on SLI is wh-constructions – both interrogatives and relatives. Studies reported in Cronel-Ohayon (2004), Hamann et al. (2006) and Jakubowicz (2004, 2005, to appear) found that in elicited production tasks, children with SLI produce wh-questions using an in situ strategy more frequently than via a wh-fronting strategy, for wh-phrases for which the two strategies are available in the target language (wh-phrases other than *pourquoi* 'why') and where the difference is visible (non-subject wh-phrases). Studies of long-distance wh-questions in children with SLI (Jakubowicz 2004, 2005, to appear) are particularly revealing in that they show that when these children are put in a situation requiring production of a long-distance question, they use a wide variety of strategies to avoid long-distance movement, including strategies which are not grammatical in (any variety of) adult French, but which do exist in other languages, such as partial movement questions, illustrated in (7), and wh-copying, illustrated in (8), and a combination of both of these, as in (9):

(7) a. *Tu crois **où** que j'ai caché le bébé* (9;4)
you believe where that I have hidden the baby
(Target: 'Where you think I hid the baby?')

b. *Tu penses **quoi** je mange dans les fêtes?* (10;1)
you think what I eat in the parties
(Target: 'What do you think I eat at parties?')

7. These properties are illustrated in (i), extracted from a spontaneous language sample from CHL, who is aged 10;11, and who is talking about the latest Harry Potter move she has seen.

(i) CHL: *I(ls) **fait** des matchs*. They **do-3S** games
EXP: *D'accord i(ls) font des matchs*. OK, they do-P games
CHL: *Oui avec euh Harry Potter et euh avec euh deux autres—une… **un** fille ou un gar et un garçon. Et bien deux garçons et une fille.*
Yes with um Harry Potter and um with um two others a-F **a-M** girl or a bo…… and a boy. And well two boys and a-F girl.

(8) ***Où*** *tu penses* ***où*** *j'ai mis le chien?* (9;4)
where you think where I have put the dog
(Target: 'Where do you think I put the dog?')

(9) *Tu penses* ***quoi*** *les enfants ils mangent* ***quoi*** *aux fêtes?* (9;2)
you think what the children they eat what at the parties
(Target: 'What do you think the children eat at parties?')

Wh-movement has also been studied in relative clauses in French-speaking children with SLI, in elicited production (Cronel-Ohayon 2004; Damourette 2007), as well as in spontaneous production (Damourette 2007; Delage in preparation; Hamann, Tuller, Monjauze, Delage & Henry 2007; Henry 2006). These have shown that non-subject relatives are less frequently produced compared to subject relatives, and that various strategies are used to 'simplify' relatives.

Using an elicited production probe adapted by Jakubowicz from a task created by Friedmann (see Friedmann & Novogrodsky 2004; Novogrodsky & Friedmann 2006), to test eight children with SLI (ages 8;0 to 11;1), Damourette (2007) found that both subject and object relatives were difficult for children to produce compared to simple sentences. Thus, while children produced simple SVO sentences with a mean of 97.8% (SD 4.1), subject relatives had a mean of 55% (SD 43.6) and the mean for expected responses for object relatives was only 3.8% (SD 5.8). In fact, five out of the eight children did not produce a single object relative. Unexpected responses for subject relatives included producing a sentence without a verb as in (10a), or a simple sentence as in (10b), or producing a subject relative which did not answer the question, as in (11).

(10) a. (Question asked: *Celui-là c'est quel papi?)* *Le conducteur.* (10;0)
'Which one is that grandpa?' 'The driver'

b. (*Celui-là c'est quel pingouin?*) *Le pingouin i(l) lave l'enfant.* (9;2)
'Which one is that penguin?' 'The penguin, he's washing the child'

(11) a. (*Celle-là c'est quelle fille?*) *C'est sa maman qui la maquille.* (10;0)
'Which girl is this one?' 'It's her mother that is putting make-up on her'
(Picture showing a girl putting make-up on her mother)

Unexpected responses for object relatives also included non-verbal responses and simple sentences, but also subject relatives, some of which were discursively correct (they are adequate answers to the question asked), illustrated in (12a, b), and others which were inadequate answers to the question asked, as in (12c). Finally, some children used a resumptive strategy, with either a pronoun or a repetition of the head of the relative, as in (12d).

(12) Expected response: *C'est la fille que la girafe lave*
'It's the girl that the giraffe is washing'

a. *C'est la fille qu'est mouillée.*[8] (11;1)
'It's the girl that is wet'

b. *C'est la fille qu'est dans le bain* (8;1)
'It's the girl that's in the bath'

c. *C'est la girafe qui lave la petite fille* (9;9)
'It's the giraffe who is washing the little girl'

d. *C'est la fille que la reine elle caresse* ***la fille***. (11;1)
'It's the girl that the queen she's caressing the girl'

The strategies observed all have the effect of either avoiding wh-movement altogether (no relative or a relative without movement, such as in resumptive relatives), or using shorter movement (subject in place of object relativization). Results of analyses of spontaneous language production (Hamann et al. 2007; Delage et al. to appear) go in the same direction: children with SLI generally avoid relative clauses and those spontaneously produced are simpler (in ways we will elaborate on in Section 5). Difficulty with movement, and in particular with object wh-movement, has been found in studies of SLI in number of languages.[9]

2.5 Summary

One of the notable results emerging from studies of the production of grammatical morphemes (and functional features, more generally) has been that these are not equally affected: while some are severely touched, others are relatively spared. Another important result is that French-speaking children with SLI appear to avoid derivations which involve syntactic movement operations such as those involved in wh-constructions (both wh-questions and relative clauses). It should be emphasized that these choices (non-lexicalization of certain formal features or grammatical morphemes or absence of certain types of syntactic movement) may correspond to illegitimate parametric options in French, but to legitimate options in other grammars/registers: children with SLI do not have "non-human" language (a point agreed upon by all researchers on SLI – see e.g., Clahsen 1989; Jakubowicz 2007). The grammatical semiology of SLI in French – the fact that certain grammatical features and certain syntactic operations are difficult for these children – has potential implications for how these elements and these constructions are best analyzed by linguistic theory. The divide between more spared areas of grammar and more affected areas of grammar should correspond to independently motivated grammatical differences. We return to this question in Sections 4 and 5. Before reviewing proposals to explain the observed

8. These responses also included verbal passives and causatives, suggesting that information structure factors are also pushing children to produce subject relatives, instead of object relatives.

9. See, for example, work by van der Lely and colleagues, for English (van der Lely & Harris 1990; van der Lely 2003) and work on Hebrew by Friedmann and colleagues (Friedmann & Novogrodsky 2004; Novogrodsky & Friedmann 2006).

semiology, we first look at the other fundamental question which arises from this work: what is it about the language of these children that distinguishes them from other children learning the same language? In other words, is it possible to define (a) linguistic clinical marker(s) identifying children who are suffering from SLI?

3. Clinical markers of SLI in French?

What is a clinical marker of SLI? Work comparing different acquisition contexts with SLI has been particularly active in research on French. This work has so far shown that the notion of clinical marker is age-dependent, and that it cannot be associated with either this particular pathology or even with pathology itself. The notion of clinical marker (see Rice 2003) raises questions regarding age, other types of developmental language impairment, and other types of atypical language development. We consider each of these in turn, summarizing results from studies on the acquisition of French in special contexts.

3.1 Age

One of the hallmarks of language impairment in SLI in French is difficulty in producing object clitics. It has been proposed that this difficulty could function as a marker of SLI in French, analogous to the proposal that tense marking plays this role for SLI in English (Rice 2003; Rice & Wexler 1996). Citing previous work on SLI in French (see Section 2.2), Paradis et al. (2003) argue precisely for this conclusion based on a study comparing French-English (simultaneous) bilingual children with and without SLI. They found that the difficulty with object pronouns was specific to French (and thus even the bilingual children with SLI were virtually at ceiling performance for object pronouns in English). Just as Rice and Wexler (1996) found that production of tense-marking in English-speaking children with SLI could best be described as an extension of an earlier stage found in typically-developing children, and thus dubbed the "extended optional infinitive stage", Paradis et al. confirmed previous findings that children with SLI are experiencing the same difficulty with object clitics that typically developing (TD) children experience at an earlier age. Indeed, all of the patterns described in Section 2 for French-speaking children with SLI are patterns which are also found in TD French-speaking children, as these studies cited above show (see Hamann, this volume, for a thorough overview of acquisition of these properties in TD children). In other words, clinical markers must be associated with a particular age, in that it is not what children produce that is distinctive, but the age at which this occurs (see Rice 2003).

Taking age into consideration for the notion of clinical marker, however, does not just mean taking into account the fact that areas particularly difficult for children with

SLI are also difficult for younger TD children.[10] It also means understanding which difficult aspects of language become less affected as children grow older, and which difficulties persist (long) after childhood. In other words, a marker of SLI at age six may no longer be pertinent at age ten, for example. This question is of interest not only for how to define clinical markers, but, more generally, for understanding what the long-term linguistic effects of SLI are, and thus for elaborating appropriate therapy for older children and for adolescents.

Very few even medium-scale cross-sectional studies with wide age ranges have been carried out on French-speaking children with SLI; longitudinal studies are also rare. Most published studies of SLI in French report on children between ages five or six and nine or ten. Very few studies have been conducted on adolescents and adults.[11]

In one of the rare longitudinal studies on SLI in French, Jakubowicz (2003b) studied production and comprehension of tense-marking, determiners, and pronominal clitics in 11 children with SLI 3 times over a 3-year period (ages 5;5 to 7;4 at T1, 6;5 to 9;0 at T2, and 7;6 to 10;7 at T3), compared to a group of 12 TD children (studied at age 3, 4 and 5). The overall result was that the performance of children with SLI on the two areas of particular difficulty – production of compound tenses and accusative clitics – progressed over time, but the former approached (and in some cases caught up with) that of TD children faster than for the later. Thus, children with SLI progressed dramatically on production of the compound past tense (below 25% rate of correct production at T1 and 80% at T3). Production of accusative clitics also progressed, but remained well below TD

10. They may be even more difficult for children with SLI, who have, for example, higher rates of omission at equivalent MLUs (see Rice 2003). The empirical scope of the work that has been done on optional infinitives in English-speaking children with and without SLI has no equal for any other language, to my knowledge [LT]. Many published studies of French-speaking children with SLI are based on small groups (*N* < 12), and they never exceed 40 subjects.

11. With the exception of a couple of subjects in the Paris studies, all other populations studied linguistically have been under age 11. Publications from the Geneva studies include children with an age range between 3;10 and 10;5 (Chillier et al. 2001; Franck et al. 2004; Hamann 2003, 2006; Hamann et al. 2003; Hamann et al. 2007). The Paris studies (Jakubowicz 2002, 2003a, 2003b, 2004, 2005, 2007, to appear; Jakubowicz & Nash 2001; Jakubowicz et al. 1998; Jakubowicz et al. 1999; Lancien 2004; Roulet 2007; Roulet & Jakubowicz 2005) include (depending on the particular study) children ranging in age between 5;4 and 13;5 (but the oldest subjects are three 11-year-olds and two 13-year-olds). Grüter's (2005) Montreal study included children aged 6;6 to 9;2. The monolingual French-speaking children with SLI studied in the publications by Crago and Paradis and colleagues were all 7- and 8-year-olds (Paradis & Crago 2000, 2001) and the French-English bilingual children with SLI were also about 7 years old (Paradis, Crago & Rice 2003; Paradis, Crago & Genesee 2003, 2005/2006). Children studied by Maillart (Maillart 2003, Maillart & Schelstraete 2005) in Belgium ranged in age from 7;10 to 11;6. Billard et al. (1989) did a follow-up study of 12 French-speaking subjects aged 16 to 23, but language was measured exclusively via a standardized battery designed for adults with aphasia (the Boston Diagnostic Aphasia Examination).

children (at roughly 60%), whereas both nominative and reflexive clitics (initially lower than in TD children) displayed ceiling production rates at T3.

The persistent difficulty with accusative clitics was also reported by Audollent and Tuller (2003), who presented an in-depth case study of a monolingual French-speaking 19-year-old with a childhood diagnosis of SLI. Based on analysis of a large spontaneous language sample (over 800 utterances, 21.8% of which were ungrammatical), it was found that accusative and reflexive clitics had a much higher combined error rate (due to omission in nearly one-fifth of all obligatory contexts) than other pronouns (clitic or non-clitic) and than other functional categories. An object (accusative, reflexive and dative)/subject clitic ratio of approximately 1:5 was observed. Hamann et al. (2003) found a similar ratio for typically-developing children at around age three and a ratio of 1:3 for (normal) adults. These results suggested that difficulty with object clitic production does indeed persist in SLI in French, long after childhood. Interestingly, dative clitics were not subject to omission to the same degree (93% production in obligatory contexts). These clitics have yet to be systematically studied in SLI in French.

That conclusion has been confirmed in a large-scale study of children and adolescents aged 11 to 20 conducted in Tours.[12] Tuller et al. (to appear) present results of production of pronominal clitics, obtained via an elicited production task (the PPPC Production Probe of Pronominal Clitics), designed specifically for adolescents and older children. A total of 37 subjects with SLI (24 males and 13 females) with an age range from 11;5 to 20;5 (*M* = 14;8 and *SD* = 2;8) participated in this study. One of the major conclusions of this study was that (third person) accusative clitics remain very difficult to produce for individuals with SLI, long after childhood: accusative clitics were produced at a mean rate of only 50% (*SD* = 32), on this particular elicited production task, significantly less often than both nominative clitics and reflexive clitics.

While results on the special difficulty associated with third person accusative clitics would seem to support considering this element to be a particularly robust marker of language impairment, additional studies are needed on older children and adolescents, as well as on adults with a childhood diagnosis of SLI, in order to arrive at a global picture of the evolution of language impairment in SLI, and at a complete understanding of which aspects would be pertinent candidates for being clinical markers at which age.

3.2 SLI or pathologies affecting language development?

Another question which arises regarding identification of a linguistic clinical marker for SLI concerns whether the difficulties observed in SLI are specific to this pathology or whether they are found in other pathologies affecting language development. To answer questions of this type, studies have been conducted comparing children acquiring French with SLI to children acquiring French in the contexts of hearing loss

12. See Henry (2006), Carmès (2005, 2006), Tuller et al. (to appear), Tuller et al. (2008).

and epilepsy. A comparison between children with SLI from the Jakubowicz, Nash, Rigaut and Gérard (1998) and Jakubowicz and Nash (2001) studies, and children with profound or severe deafness (Jacq & Tuller 1999; Jakubowicz, Tuller & Rigaut 2000) showed that both the tense-marking dissociations and the pronominal clitic/definite determiner dissociations discussed in Section 2 above for children with SLI are also characteristic of children with profound or severe deafness. Using the same elicited production and comprehension material, Tuller and Jakubowicz (2004) demonstrated that children with even moderate hearing loss (Pure Tone Average of 40 to 70 dB) revealed these same dissociations; they also showed that some of these children can be as severely affected with these particular language impairments as the most severely affected children with SLI.

In an inter-pathology project based in Tours, Tuller and colleagues have compared children and adolescents with mild-to-moderate hearing loss (hearing threshold of 21 to 70 dB), with SLI and a form of benign childhood epilepsy (Rolandic Epilepsy). This particular three-way comparison provides an interesting array of sources of impairment and degrees of language impairment: children with mild-to-moderate hearing loss (MMHL), all other things being equal, have normal intelligence, a normal language faculty, but their hearing loss restricts their access to language input. Importantly, children with MMHL do display (some) spontaneous language acquisition, one of the results of which is that hearing loss is usually detected several years after birth (average age around 4 or 5; see Delage & Tuller 2007), and therefore amelioration of lowered hearing thresholds and sound distortion begins only after several years of degraded and partial language input. Rolandic Epilepsy (RE), also referred to as Benign Epilepsy of Childhood with Centrotemporal Spikes, is the classic focal, idiopathic epilepsy. It involves limited, abnormal electrical discharges over the centrotemporal region beginning in childhood (age 3–13), but ending before adulthood. As electrical charges in this form of epilepsy are localized in perisylvian language areas, and as they take place during development, it is of particular interest for the study of language development in exceptional circumstances.

As is the case for SLI, absence of neurological and intellectual deficits is one of the criteria for RE. All three of these pathologies involve individuals who are normally intelligent, have no brain lesions, and who have been exposed to their native language since birth, yet language development in childhood differs from typical language development (see Delage & Tuller 2007, and Delage in preparation on MMHL; Monjauze et al. 2005, and Monjauze 2007 on RE). All three of these pathologies are also known to be, or highly suspected to be, largely hereditary. MMHL and RE differ from SLI in that there is some identifiable source – hearing loss, electrical discharges (although the etiology of the latter is the subject of debate). And, while the immediate developmental disruption is temporary in RE, the deficit is presumably permanent in SLI and in MMHL, though in all three cases, disruption is presumably alleviated by therapy (and, in the case of MMHL, the immediate cause is alleviated, to varying degrees, and usually long after language acquisition is normally well underway, by auditory prostheses).

This three-way comparison offers the possibility to explore particular areas of language in contexts in which the severity of impairment is known to vary: while SLI involves severe language impairment, language impairment stemming from MMHL is generally less severe, and RE entails the least severe impairment of the three; however, all three involve high inter-subject variability.

This comparison of children and adolescents with SLI (*N* = 51, ages 8;0 to 20;5), with MMHL (a group of 19 11- to 15-year-olds and a group of 33 6- to 11-year-olds), and with Rolandic Epilepsy (a group of 27 7- to 16-year-olds) has revealed striking similarities in affected aspects of French. Continuing with the example of clitic pronouns, these studies have revealed shared semiologies not only regarding which aspects are difficult for children acquiring language in these circumstances, but also which aspects of language give rise to difficulties which persist after childhood. Accusative clitics are omitted and avoided in all of these populations, whereas nominative and reflexive clitics are comparatively spared. When accusative clitics were not produced, two principal strategies were used: omission of the direct object and production of a lexical DP, generally repeating the DP of the prompt. Older subjects and subjects, for whom disruption of language acquisition is less severe (RE), used almost exclusively the second strategy, as in the example in (13) (from Monjauze 2007):

(13) Experimenter: *Que fait le médecin avec le bébé?*
'What's the doctor doing to the baby?'
Expected response: *Il le pèse* 'He's weighing him'
Response of a RE subject (age 14;8): *Il pèse le bébé* 'He's weighing the baby'

Repeating a lexical DP is not ungrammatical, as object omission would be in these contexts, but it is discursively infelicitous. TD 11-year-olds almost never produced such responses, whereas both younger (aged 7 to 10) and older (ages 11 to 16) children with RE substituted lexical DPs for accusative clitics at a mean rate of around 15%. 21 of these 27 subjects with RE were re-tested two years after initial testing (by this time 11 of them were clinically in remission), and it was found that production of third person accusative clitics remained constant (*M* = 80% at T1 and 81% at T2) and significantly below that of TD 11-year-olds (see Monjauze 2007).

These studies suggest then that it is not the properties of a particular pathology affecting grammatical development which determine which aspects of that development will be perturbed, but, rather, it is particular aspects of French which are subject to difficulty on the part of learners in the context of a pathology which perturbs grammatical development. Of course, grammatical development may follow an atypical path for reasons other than pathology. In other words, is it pathology in and of itself that perturbs grammatical development?

3.3 Pathology or atypical language development?

An interesting way to test the question of whether it is pathology or just any atypical language development which gives rise to particular difficulties in language acquisition is to compare children developing a given language with pathology to children learning that same language, late, as a second language. Comparative studies of this type have so far been limited in number and in scope,[13] although the available results seem to go in the same direction and have important implications. Work on French has played a central role in this effort. Paradis and Crago (2000, 2001) compared spontaneous language production in children with SLI to children learning L2 French in French-language schools in Montréal. Their studies have shown that what is difficult for children acquiring French with SLI is also difficult for children in the early stages of second language acquisition of French. Their results of the study of 10 monolingual French-speaking 7-year-olds with SLI, compared with 10 7-year-old learners of French as a L2 (L1 English), and age and MLU controls, have shown that grammatical tense-marking and accusative clitics are areas of specific difficulty for both of these types of learners (see also Paradis 2004; Paradis & Crago 2004, on this same study).

Grüter (2005), studying the same types of populations in a similar setting, found that a group of six children with SLI (aged 6;6 to 9;2) and a group of seven L2 children performed similarly on tasks testing production and comprehension of object clitics (they were both significantly below TD 6-year-olds for the former, but not for the latter). Scheidnes (2007) reports on a comparison of a group of L2 French/L1 English adults ($n = 19$) and a group of French-speaking children with SLI ($n = 22$, ages 6;10 to 13;2) studied by Fache (2007). Despite the huge age difference between the two populations (*M* age of 21 versus a *M* age of 9), their performance on a task eliciting production of wh-questions was strikingly similar, compared to that of native French-speaking adults: wh-in situ constructions were more frequent and subject-verb inversion was less frequent in the two experimental groups than in the adult native speakers. These kinds of cross-population similarities, as Paradis and Crago (2000) emphasize, strongly suggest that the notion of clinical marker will need some serious refinement.

3.4 Summary

The above considerations about long-term development of areas of French that are difficult for persons with SLI, about how these same areas fare in other pathologies affecting the development of French, and about how they are acquired by learners for

13. To the best of our knowledge, only a handful of studies comparing child SLI with child L2 have been published. Besides work on French discussed in this paper, comparative work of this type has appeared on Swedish (see Håkansson 2001, and references cited there), on English (Paradis 2005) and on Dutch (Orgassa & Weerman to appear). There have also been a few publications on linguistic studies of bilingual children with SLI (see Paradis et al. 2003, 2005/2006; Paradis 2007; Steenge 2006).

whom French is developing as a second language all point to the difficulty of putting forward a robust clinical marker for SLI in French. Searching for clinical markers is a bigger enterprise than what may have been thought at the outset. At the same time, currently available results are of considerable interest because they mean that "clinical marker" may have more to do with properties of French than with grammatical properties associated with a given pathology. The fact that specific parts of French are difficult in such varying contexts would seem to indicate that data of this type hold great potential for understanding the structures and operations of French. Theories developed to explain these properties thus are not just theories of atypical acquisition, but also theories about the syntax of French.

4. Theories of SLI

Over the years, different theories have been developed to explain why certain parts of language are difficult for children with SLI. We propose to summarize briefly the major theoretical avenues that have been pursued, presenting at the same time the results of studies of French-speaking children with SLI which challenge or comfort these theories. We first look at the speed of processing and feature-blindness/missing agreement accounts, arguing that each of these faces empirical challenges due to dissociations existing, on the one hand, between phonetically weak grammatical items, and, on the other hand, between production and comprehension. We then review approaches which focus on the complexity of linguistic operations underlying the parts of language that are difficult for children with SLI, and we take up, in Section 5, work on SLI in French which supports this type of approach, and notably the Derivational Complexity Hypothesis.

4.1 Speed of processing and feature blindness/missing agreement

Leonard and colleagues (see Leonard 1998, and references cited therein) proposed that children with SLI suffer from reduced processing speed which affects their perception of phonetically weak morphemes (short in duration or otherwise less salient than adjacent morphemes). Under this approach, these morphemes would be even more difficult for these children when they are grammatical because of the additional operations which need to be performed simultaneously with the processing of the rest of the sentence. Consequently, children with SLI would need much more frequent exposure to these elements in order to incorporate them into their grammar, and this would be why they are late with respect to other children. The discovery of striking DISSOCIATIONS BETWEEN DIFFERENT GRAMMATICAL MORPHEMES, all of which are phonetically reduced (and some of which are homophonous, such as definite determiners and

accusative clitics in French)[14] (see Section 2.1 above) has led to the development of theories which look beyond the surface form of grammatical elements, to consider more directly their associated grammatical operations.

One of the operations which has been the source of theories of SLI is agreement, the syntactic dependency relation between elements sharing an abstract formal feature such as gender or number. Having observed numerous errors in morphological paradigms, Gopnik (1990) proposed that the central characteristic of SLI is "feature blindness", which would be the result of impairment of one particular part of the grammar – the ability to use syntactical-semantic features. In a similar vein, Clahsen's (1989) Missing Feature Hypothesis proposes that the central property of SLI is a selective deficit in grammatical agreement relations (affecting, in German, gender, case, auxiliaries and copulas, and subject-verb agreement). For both of these theories, observed errors are the result of a selective syntactic deficit. This idea is shared by Berwick (1997), for whom the Minimalist approach offers an interesting way to characterize all language impairment in terms of malfunction of operations which identify and assemble formal features from the lexicon. For Berwick, SLI corresponds to a dysfunction in accessing and matching formal features, the syntactic effect of which is (among other things) agreement errors. If there is a unique engine behind syntactic computation which feeds both language production and language comprehension (the simplest assumption), these theories which, based on production data, impute optional omission and other feature errors to a syntactic deficit, face a problem with the fact that production difficulties are not mirrored in comprehension.

A PRODUCTION-COMPREHENSION DISSOCIATION has been shown in several studies, including those on SLI in French, though more work systematically comparing expressive and receptive language is needed (see also Section 4.2). Comprehension of the compound past tense surpasses production of these morphemes, as tested in a classical sentence-picture matching task (Jakubowicz et al. 1999; Jakubowicz & Nash 2001). Likewise, comprehension of accusative clitics is not affected the way the production of these elements is, as has been shown in studies using both sentence-picture matching tasks (Grüter 2005; Jakubowicz et al. 1998) and in a grammaticality judgment task (Chillier et al. 2001).

The project on the acquisition of interrogative sentences conduced by Jakubowicz and colleagues in the Acquisition and Dysfunction of Language team (CNRS, Paris V) included testing of both elicited production of wh-questions and their interpretation (Jakubowicz 2005). Interpretation of long-distance wh-questions was done via a task adapted from de Villiers, Roeper and Vainikka (1990), and Weissenborn, Roeper and de Villiers (1995). The experimenter told a short story illustrated with two pictures on a computer screen. At the end of the story, a pre-recorded voice asked a question and

14. This hypothesis has been contradicted by several studies: Bottari et al. (1998), Gopnik and Crago (1991), Hamann et al. (2003), Jakubowicz et al. (1998), and Rice and Wexler (1996) among others.

two response pictures appeared on the screen – one corresponding to a constituent in the main clause, and the other to a constituent in the embedded clause – and the participant was instructed to point to the answer. Questions included potentially ambiguous questions, such as those in (14a) and (15a), with a fronted wh-phrase which could be interpreted as referring to either the matrix (in (14a), to whom has she said it?) or the embedded clause (in (14a), to whom should she give the bottle?) and the same questions with the wh-phrase in situ. Half of the wh-phrases were arguments, as in (14), and half were adjuncts, as in (15).

(14) a. ***A qui*** *la maman a dit de donner le biberon?*
to who the mom has said of give-INF the bottle
'To whom did the mom tell to give the bottle?'
[to whom has she said it / to whom should she give the bottle]

b. *La maman a dit de donner le biberon* ***à qui****?*
the mom has said of give-INF the bottle to who

(15) a. ***Où*** *Julie a dit qu'elle avait déchiré sa robe?*
where Julie has said that she had ripped her dress

b. *Julie a dit qu'elle avait déchiré sa robe* ***où****?*
Julie has said that she had ripped her dress where

Adult subjects (*n* = 20, aged 20 to 33) as well as all groups of children (9 TD 3-year-olds, 12 TD 4-year-olds, 12 TD 6-year-olds, and 14 children with SLI aged 7 to 13) all showed evidence for long distance interpretation of the wh-phrase. This was the dominant interpretation for fronted adjunct phrases (and all in situ wh-phrases), and all groups gave as many matrix clause responses as embedded clause responses for the ambiguous questions with a fronted argument wh-phrase (Lancien 2004; Jakubowicz 2005). In other words, the difficulty that children with SLI and TD 3-year-olds had in producing long-distance questions was not found in interpretation.

Finally, strong evidence has been put forth which argues that gender and number marking, though prone to error in production, as we have seen, are processed by children with SLI in reception. A series of studies was conducted by Jakubowicz and Roulet (Roulet 2007; Roulet & Jakubowicz 2005; Roulet, Gonin, Rigaut & Jakubowicz 2004; Roulet-Amiot & Jakubowicz 2006) to compare production and comprehension of gender and number agreement. One of these studies involved a production task which had children name a series of familiar objects appearing on a computer screen, and a perception task in which a series of (pre-recorded) words were presented to children who had to say whether the word was edible. In the latter task, some words were presented with a determiner which correctly matched the gender of the noun (*la banane* 'the-fem. banana', *le gâteau* 'the-masc cake'), while others were presented with a gender mismatch (*le banane* 'the-masc banana', *la gâteau* 'the-fem. cake'). This type of task, which does not require conscious control, has been shown to be sensitive to agreement errors, with subjects taking longer to respond to the question (which has nothing to do

with agreement) when agreement is violated. Subjects had to respond as quickly as possible by clicking on a mouse. 18 children with SLI (aged 6;11 to 11;3) were compared to 18 TD 6-year-olds.

As expected, the TD children combined nouns in the production task with the correct indefinite determiner *un*/*une* (masc./fem.). The children with SLI produced a relatively high percentage of gender errors (essentially masculine for feminine – see Section 2.3 above) for such a simple task (5%) and despite the fact that all of the nouns were well known to the children; the younger ones also had a high percentage of determiner omission (17.6%). Interestingly, although they did not systematically produce a correct determiner, results of the second task show that they were sensitive to agreement violations. As was true for the TD children, the children with SLI had significantly higher reaction times for mismatched determiner-noun sequences than for sequences in which the two were correctly matched.

Production and comprehension of subject-verb agreement in number were tested in tasks similar to the gender tasks just described (see Roulet & Jakubowicz 2005). As in the gender perception task, it was expected that children's response time would be longer when stimuli contained a number error (*c'est sur le fauteuil que les chats est* 'it's under the armchair that the cats is'). Results on the production task show that TD children make practically no agreement errors, whereas children with SLI produce singular verbs in contexts with a plural subject about 25% of the time. (They never did the opposite.) In the perception task, the performance of children with SLI was similar to that of TD children: Reaction times were significantly longer when the sentence contained a number-error on the verb.

Summarizing, these two studies show that children with SLI manifest a capacity similar to that of TD children in perceiving/comprehending agreement features: Agreement was automatically calculated/processed, even when this calculation was not necessary to answer the question asked in the experimental task. More generally, it would thus appear that the (more) fundamental problem for children with SLI is in production, and therefore it seems unlikely that the basis for this could be a general syntactic deficit affecting formal features and agreement operations. The idea that it is the nature of grammatical operations which is in some way at the heart of the difficulties observed in SLI has been explored in other ways, some of which attempt to address more directly the production versus comprehension dimension of language impairment in SLI. We place these other approaches, which in some respects vary (radically), under the general heading of computational complexity.

4.2 Computational complexity: maturation of linguistic competence or maturation of linguistic performance?

There is growing convergence in research on (a)typical language acquisition on the relevance of the complexity involved in a syntactic derivation to its difficulty in acquisition (see Hamann this volume). This connection has been expressed in different

ways, which have in common reference to the number of syntactic movement operations (those creating structure and those transforming structure), or to the type of movement operations (the distance/nature of the link between the moved element and its trace). These proposals have relied heavily on comparison between typical language acquisition and language acquisition with SLI, yet have diverged greatly in their interpretation of these comparisons, some approaches arguing for a deficit in the maturation of linguistic competence, and other arguing for abnormally immature linguistic performance systems.

Wexler (1998) proposes that the grammars of children in the Optional Infinitive stage have a Unique Checking Constraint, which restricts (to one) the number of times the D-feature of DP can be checked against a functional feature. Since feature-checking is what triggers syntactic movement, this constraint entails that movement of a DP will be limited. This feature of immature grammars, which typically developing children grow out of, stays with children with SLI for much longer (indefinitely?). Wexler, Gavarro and Torrens (2002) argue that the UCC, proposed to explain the Optional Infinite stage, also explains object clitic omission in languages like Catalan and French, if it is assumed that object clitics, following Sportiche (1996), entail movement for feature-checking of an object DP to Spec of AgrOP (for checking of the case feature) and then to Spec of a Clitic Phrase (for checking of a definiteness feature).

The Representational Deficit for Dependent Relations put forward by van der Lely (1998) also seeks to characterize SLI as being impairment in a specific area of grammar. It is suggested that children with what is referred to as Grammatical-SLI (G-SLI) have grammars in which Movement is optional (in Minimalist terms, it is the Economy principle of Last Resort, which normally forces movement, argued to be missing in the grammar of these children) rather than obligatory as it is in the adult grammar. This theory is further developed as a deficit in Computational Grammatical Complexity (van der Lely 2004), and claims that these children are impaired in the computations necessary to derive hierarchical, structurally-complex forms in one or more linguistic components (syntax, morphology, and/or phonology). This proposal explicitly predicts similarities in expressive and receptive grammar, and, indeed, work by van der Lely and colleagues on English-speaking children with G-SLI has stressed similarities between performance in comprehension (and grammaticality judgment tasks) and production, in contrast to the results reported on SLI in French in the preceding section. It is not clear whether this apparent discrepancy is due to the particular grammatical structures studied (or material used) or to the particular sub-type of SLI studied (see Section 1). This is just one area of SLI in need of systematic cross-linguistic study.

Another economy principle put forward which has been evoked to explain the constellation of impairment found in SLI is Rizzi's (2000) principle of Structural Economy ("use the minimum of structure consistent with well-formedness constraints") and Categorial Uniformity ("assume a unique canonical structural realization for a given semantic type") (see Hamann this volume, for discussion). Rizzi (2000) suggests that young children use grammatical options which may be more generally available to

immature grammars such as null root subjects (which exist in root clauses in adult non-pro-drop languages in particular registers) to circumvent processing limitations. An illustration of the idea that ease of processing through use of empty categories is pertinent in understanding language impairment in children with SLI was presented in Hamann et al. (2007). This study of spontaneous language samples found that 10 children with SLI (from the Geneva corpus), aged 5;10 to 10;5 (*M* 8;0) made use of grammatical complementizer omission (*M* of 15%), as in (16), whereas TD 6- and 8-year-olds (from the Tours project) rarely used this option (0.5% and 0%, respectively).

(16) *Je pense on va faire des jeux* (SLI, 5;10)
'I think we're going to play games'

Ease of processing, though, begs the question of whether the deficit in SLI is due to (prolonged) immaturity of the grammar itself or to immaturity of some part of linguistic performance, which is sensitive to aspects of grammar. The proposals by Wexler and by van der Lely are clearly situated in the first optic. Rizzi (2000) appears to suggest that both may be involved. Several recent studies of SLI in French have argued that computational complexity effects are due to processing load on performance systems such as working memory. It is hypothesized that these systems are sensitive to linguistic computational complexity and that their maturation is (somehow) impaired in SLI.

5. The Derivational Complexity Hypothesis

A number of studies of SLI in French have been conducted within the loose framework of the derivational complexity hypothesis. An important contribution to this work has been the Derivation Complexity Metric proposed by Jakubowicz (2004, 2005). Drawing on the idea that economy considerations constrain language development – an idea which has been part of the literature for over a decade (see Hulk & Zuckerman 2000; Jakubowicz 2002, 2003; Jakubowicz & Nash 2001; Rizzi 1990, 2000; van Kampen 1997; van Kampen & Evers 1995; Zuckerman 2001) – Jakubowicz proposed that both typical and atypical language development are affected by developmental constraints, such as working memory capacity, that are sensitive to the computational complexity of the derivation. The originality of this proposal was its instantiation in the Derivational Complexity Metric, a formal metric defining computational complexity of a derivation in terms of 1) number of times a particular constituent is merged, and 2) number of elements affected by Internal Merge.

(17) Derivational Complexity Metric (DCM) (Jakubowicz 2005)
a. Merging α_i n times gives rise to a less complex derivation that merging α_i (n + 1) times.
b. Internal Merge of α gives rise to a less complex derivation than Internal Merge of α+β.

We will explore in section 5.1 some of the predictions of (17) for language acquisition in French-speaking children with SLI. We then consider in Sections 5.2 and 5.3 other aspects of derivational complexity, related in spirit to the DCM: depth of embedding and the nature of dependency relations and accumulation of syntactic operations which include not only Merge, but also Agree (coupled with deep embedding).

5.1 Number of applications of merge and successive internal merging

We now return to wh-questions in children with SLI, an area of French which has provided striking support for (17). As we saw above (and see also Hamann this volume), children with SLI tend to avoid Internal Merge in simple wh-questions by using the in situ strategy. Likewise, as predicted by (17b), when these children do use wh-fronting, they do not use movement of V-to-C in the same derivation.[15] Direct wh-questions from embedded clauses allow for testing of the predictions of (17a) – successive internal merging should be avoided. Jakubowicz, in work with N. Strik (see Jakubowicz & Strik in press; Jakubowicz 2005, to appear), has shown that both young TD children (3-year-olds and 4-year-olds) and children with SLI (age range from 6;11 to 14;0) behave essentially as predicted when challenged with an elicited production task requiring successive wh-movement: a tendency for avoidance of long-distance movement was observed.[16] Children used different syntactic strategies for this. Simple partial movement, as in (18a), partial movement, as in (18b), and wh-copying, as in (18c), which are ungrammatical in the adult target, involve internal merge of the wh-phrase just one time.

(18) a. Experimenter: *Demande à Nina ce que Billy a dit que Grenouille voit.*
'Ask Nina what Billy said that Frog sees'
Child: *Nina, Billy a dit quoi que Grenouille voit?* (TD 3-year-old)
'Nina, Billy said what that Frog sees?'

b. Exp.: *Demande à Nina où Lala a dit que le poisson nage.*
'Ask Nina where Lala said that the fish is swimming'
Child: *Lala, qu'est-ce qu'il a dit où le poisson nage?* (TD 3-year-old)
'Lala, what did he say where the fish is swimming?'

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15. V-to-C is not obligatory in spoken French, and, is in fact, rather infrequent.

16. One challenging result was that wh- in situ was virtually non-existent in the elicited long-distance questions. Jakubowicz (to appear) suggests that this might be due to an independent conflict arising at LF between direct question formation and the embedded position of the in situ wh-phase. In direct questions the matrix CP must be activated and the wh-phrase construed under the scope of the matrix wh-operator (or wh-feature), but an embedded in situ wh-phrase is far away from the matrix CP making recoverability of the question operator difficult at LF. Thus, avoiding derivational complexity (the DCH) might be neutralized by processing complexity at LF. For interpretation and discussion of the totality of these results, see Strik (in preparation).

c. Exp.: *Demande à Nina pourquoi Billy a dit que Grenouille se*
'Ask Nina why Billy said that Frog is
promène dans la forêt.
walking in the forest'
Child: *Pourquoi Billy a dit pourquoi, la grenouille, promène dans*
'Why Billy said why the frog is walking in
la forêt? (SLI-8)
the forest?'

The other syntactic patterns used by these children either entail avoidance of embedding altogether – via some sort of adjunction or parataxis, as in (19a) and (19b) – or use of an indirect question (one instance of wh-movement), as in (19c):

(19) a. Exp.: *Demande à Nina pourquoi Lala a dit que les trois amis*
'Ask Nina why Lala said that the three friends
vont chez Lapin.
are going to Rabbit's place'
Child: *Nina qu'est-ce qu'elle a dit Lala pour la question pourquoi*
'Nina, what did she say Lala for the question why'
les trois amis est chez Lapin (SLI-8)
the three friends is at Rabbit's place?
b. Exp.: *Alors demande à Nina où Lala a dit que Grenouille a trouvé*
'So ask Nina where Lala said that Frog found
Nounours.
Teddy'
Child: *Lala t'a dit quoi*? # *Que* # *que Grenouille* ## *a cherché*
'Lala told you what? That, that, Frog looked for'
Nounours? (SLI-8)
Teddy?
c. Exp.: *Demande à Nina qui est-ce que Lala a dit qui entend*
'Ask Nina who it is that Lala said that heard
les cris de Grenouille.
Frog's croaks'
Child: *Nina dis euh répète ce qu'il a dit en français Lala.*
'Nina, say, um, repeat what Lala said in French. '
Qui est-ce qui entend les cris de Grenouille? (SLI-11)
Who is listening to Frog's croaks?

These results illustrate just how children with SLI (and young TD children) go about either avoiding Merge altogether or limiting Merge to one constituent or to one application of Merge in a given derivation. They provide support for the hypothesis that the semiology of language impairment in SLI is a result of derivational complexity

placing a burden on working memory. In this view, SLI is due to immature linguistic performance, which places limits on what the grammar is able to produce.

5.2 Derivations involving deep embedding or long movement

Complexity has to do with interconnected parts which form a whole. These parts can be taken to be the operations involved in a grammatical derivation, as illustrated in the preceding section. They can also be imagined to correspond to the number of phases involved in a particular derivation. In other words, the traditional notion of a complex sentence as being a sentence containing a subordinate clause ought to be related to an articulated concept of derivational complexity. Depth of embedding should thus be pertinent in determining complexity. Another kind of interconnection of parts that form wholes is dependency relations, which also link parts of a derivation. Internal Merge creates dependencies, which can be related in ways that are more or less complex. One way dependencies can be complex has to do with the intricacy of their connections with other dependencies – crossing movement chains are a perfect example. Similarly, connecting adjacent or neighboring parts to form a whole ought to be simpler than constituting a whole out of distal parts. In other words, distance is also a key component of complexity. These ways of pursuing complexity have been explored in studies on SLI in French. Chillier-Zesiger, Arabatzi, Baranzini, Cronel-Ohayon, Franck, Frauenfelder, Hamann, Rizzi and Zesiger (2006) suggest that it is the crossing dependencies inherent in accusative clitic constructions in French which are responsible for why they are so difficult for children (and adolescents) with SLI (see Hamann this volume).

The idea that distance and (depth of) embedding are essential components of complexity is explored in several studies on SLI in French (see Delage et al. to appear; Hamann et al. 2007; Henry 2006). Comparing children from the Geneva corpus and adolescents from the Tours project, Hamann et al. (2007) examined subordination in spontaneous language samples from 10 children with SLI between the ages of 5;10 to 10;5 and from 19 adolescents with an age range of 10;11 to 15;7 (Henry 2006). Subordination in French involves finite and non-finite complement, adjunct, and relative clauses. Among the factors involved in these constructions are: movement, overt versus null complementizers, overt versus null (PRO) subjects, and tense/mood dependencies. These factors imply partial scales of relative complexity. Adverbial clauses are less complex than other clauses because they are not selected and do not involve movement thus do not create dependencies. Since they are also merged to CP or IP (not to V or N) they involve shallower embedding (at phase edge) than complement or relative clauses. Finite embedded clauses are more complex than non-finite embedded clauses since there is no tense dependency and normally no overt subject. Finite complement clauses involve dependencies on several levels: there is Complementizer-Tense agreement, subject-verb agreement, there are mood and tense dependencies between the matrix and the embedded clause, there are overt subjects and overt complementizers which agree in Wh-features with the force of the clause. Relative

clauses involve movement and should therefore be more complex than other embedded clauses. It is reasoned that if children and adolescents with SLI have a problem with computational complexity – due to constraints on the derivations their grammars allow or to processing limitations – then it should be expected on a global level that subordination will be difficult, which will manifest itself in high error rates. On a more fine-grained level, we would expect that the constructions identified as more complex than others will show higher error rates. Arguing that complexity can profitably be studied via analysis of the relative frequency and grammaticality of subordinate clauses, Hamann et al. found that children with SLI, as expected, use subordination far less frequently that TD children do, and that utterances containing a subordinate clause have much higher error rates than they do in TD children. It was also found that whereas frequency of embedding increased with age in TD groups (11-year-olds producing a higher mean rate of complex utterances than 6-year-olds), it stagnated in the groups with SLI, though ungrammaticality of complex sentences decreased. This finding was taken to follow from the hypothesis that progression with age in language performance in SLI might be the result of an increase in efficiency of avoidance strategies. Support for this also came from the fact that older children and adolescents with SLI who had low rates of erroneous complex sentences were those who either produced very few complex utterances, or who produced complex utterances in which the subordination involved is arguably simpler subordination (adverbial clauses rather than relative clauses or finite complement clauses).

Delage, Monjauze, Hamann and Tuller (2007) report on a study of relative clauses in the spontaneous language of children from the Tours inter-pathology project, including 21 9- to 13-year-olds (*M* age = 11;6) with SLI. The conclusion of this study was that not only did children with SLI avoid producing relative clauses (as evidenced by their small numbers and by the proportions of structures where avoidance can be witnessed – such as juxtaposition of root clauses, the second of which modifies a noun in the first, as in (20a), and self-interruption of a relative clause, as in [20b]), but, when they did produce relatives, they avoided relatives which involve long-distance dependencies and/or deep embedding. Thus, compared to age-matched controls (but like TD 6-year-olds), the children with SLI produced very few non-subject relatives: 43% of children with SLI did not produce a single non-subject relative (whereas all TD 11-year-olds did). Furthermore, relatives argued to involve flatter structure, such as, for example, 0-level relatives (which are not embedded within a root clause—see [20c]), or dislocated relatives (where the relative clause is not embedded within a VP--see [20d]), formed a greater proportion of relatives produced by children with SLI (and by TD 6-year-olds), than they did in age-matched controls.

(20) a. *Et après y a plein de, de films ils sont un peu moins*
‘And then there are lots of, of movies they are a bit less
connus (12;6)
well known’

b. *Et c'est une personne qui dit euh …* (11;6)
'And it's a person who says uh…

c. *ben les chaînes m qu'i(l) y a à la télé.* (12;2)
'Well, the channels um that are on TV'

d. *et puis euh l'ami qu'était avec euh Harry bah il est mort,*
'And well uh the friend that was with um Harry, well, he died,
à la fin (11;6)
in the end.

These studies hypothesized that one way of exploring complexity in children with SLI (and in atypical language acquisition, in general) is to look at relative frequency in spontaneous production of constructions whose derivations entail movement and/or (deeply) embedded structures and also at the relative frequency of constructions used in place of these. The results indicate that children with SLI, and younger TD children do indeed display rather clear patterns of use and avoidance of certain structures. The notion of computational complexity, it would seem, needs to refer not only to syntactic movement, but also to specific notions such as distance and depth of embedding.

5.3 Accumulation of complexity

The hypothesis that derivational complexity can be measured both in terms of, for a given derivation, the number of times a given constituent is moved, and the number of individual constituents that are moved expresses the idea that multiplicity is an essential ingredient in the notion of complexity. Calculating levels of embedding has this same component. Multiplicity, however, logically should also include accumulation of operations of different types, or operations that take place on different phases. So, for example, we might want to include not just several instances of Merge or Merge applying several times to a single constituent, but also derivations in which both Merge and Agree apply, or in which one of these operations applies in the context of deep embedding. There is evidence for including a complexity component of this type in studies on SLI in French. We illustrate with the relation between number agreement and depth of embedding or wh-movement.

Franck, Cronel-Ohayon, Chillier, Frauenfelder, Hamann, Rizzi and Zesiger (2004) compared children with SLI from the Geneva project (aged 5;4 to 9;4) with TD children and adults for number agreement in a sentence completion task in which subjects had to finish a sentence using the verb *faire* 'make', a verb which manifests overt number marking in the present tense (*fait* 3S vs. *font* 3P). In a first, baseline, task children were asked to complete simple sentences in which the head noun of the subject immediately preceded the verb (as in *Le garcon fait un gateau* 'The boy is making a cake'). In the experimental task, the head noun of the subject was separated from the verb by material which included another noun, either in a post-modifier, as in (21), or in an adjunct (as in *Les garcons, en suivant le moniteur, font du ski* 'The boys, following the instructor, are

skiing'). Children were prompted with the beginning of a sentence, which stopped just before the verb, and were to complete the sentence based on an action depicted in a drawing (and represented in (21) by the predicate in parentheses).

(21) a. *L'amie de ma meilleure copine … (faire du cheval)*
the friend of my best pal (to do horse)
'the friend of my best girlfriend' 'to go horseback riding'
b. *L'amie de mes meilleures copines … (faire du cheval)*
the friend of my best pals (to do horse)
'the friend of my best girlfriends' 'to go horseback riding'
c. *Les habitants du petit village … (faire le sapin)*
'the inhabitants of the little town' ('to do the Christmas tree')
d. *Les habitants des petits villages … (faire le sapin)*
'the inhabitants of the little towns' ('to do the Christmas tree')

Children with SLI produced more number errors on verbs in the experimental task (36.3% on average) than in the baseline task (average of 26.5%); however, they did not show an attraction effect (higher error rates with a number mismatch between head and local noun), an effect found early on in the TD groups. It is suggested that these results indicate that children with SLI "have difficulties in elaborating the adequate syntactic relationships between the words in complex sentences […]" (Franck et al. 2004: 173–4).

Franck et al.'s main result showing that children with SLI were more prone to make errors on verb agreement when the noun did not immediately precede the verb, and thus when either the subject was complex or it was separated from the verb by another clause, is reminiscent of one of the results of the analysis of the spontaneous language of an young adult (identified in childhood as having SLI) reported in Audollent and Tuller (2003). Whereas subject-verb agreement overall was at a level of 98.7% correct, number agreement inside relative clauses reached only 70.3%, because of several errors in verb agreement, illustrated in (22). This was taken to support the conclusion that constructions involving multiple complex operations (in this case, subject-verb agreement, WH-movement, complementizer agreement with SPEC) are likely sources of difficulty for subjects with SLI, including adults.

(22) *les animaux qui vient de chez eux*
the animals that comes from place their
'the animals that come from their place'

In the case of the sentences analyzed by Franck et al., an agreement operation is taking place within the post-modifier which is embedded within the subject DP (see [21]), but also between the head of this DP and the verb. Likewise, agreement within the DP embedded within the adjunct takes place "inside" the agreement between the main clause subject and verb. It appears as though accumulation of syntactic operations like these is common source of difficulty in SLI.

5.5 Summary

We have used "derivational computational complexity" as a cover term to group together various proposals seeking to explain which aspects of French are particularly difficult for children with SLI to acquire. These proposals share the idea that these parts of French are those whose derivations are more taxing to aspects of linguistic performance, such as working memory, in that they entail a greater number of syntactic operations, greater depth of embedding, or dependency relations which are less direct or less local than those whose derivations involve fewer operations, shallower embedding, or more direct/local dependency relations. Many of these components of complexity straightforwardly follow from the spirit of the DCM, which addresses both the locality aspect of complexity (long movement versus short movement follows in that long movement involves a greater number of successive instances of internal merging of the same element) and the multiple operations aspect (which entails merging a greater number of different elements). Notice also that deep embedding, since it entails more structure in the tree, involves a more complex derivation in that it requires a greater number of applications of external Merge (see Hamann this volume). Components of complexity that are less obviously related to the DCM are embedding itself (independent of the additional elements in the numeration) and indirect dependency relations (such as crossing chains). Both of these involve interruption in the processing/construction of the dependencies in the sentence. We leave aside here just how this (important) aspect of complexity might be integrated into a unified metric of computational complexity. We also leave for future study which aspects of grammar might be affected by a dissociation between production and comprehension and how this could be tied to computational complexity viewed as a metric for predicting aspects of language which tax working memory (see Grüter 2006; Jakubowicz & Strik to appear).

6. Conclusion and directions for future research

Work on SLI in French has been in the forefront of research on this syndrome. In grappling with the notion of clinical marker for language impairment via cross-population studies and attempting to define and refine the notion of linguistic computational complexity as an explanation for areas of language difficulty, this research has stimulated not only the fields of L1 and L2 acquisition, but also work on the syntax of French and thinking on how the mind is organized for language.

Cross-population studies are particularly prevalent in the literature on SLI in French. The results of these studies have important implications for the nature of SLI. Thus, the particular shared semiology of difficulties in French found in the language of children with SLI and children with pathologies such as deafness or epilepsy or children acquiring French as a second language supports the idea that certain aspects of French are difficult to acquire due to the complexity of the structural dependencies

they entail in their derivations, and that this complexity places a burden on working memory. This latter aspect of linguistic performance is presumably similarly overburdened in contexts in which the internal grammar of French has not matured within the ordinary time frame (due to lack of quality input, in the case of deafness, to absence of early/sufficient input in the case of child L2 acquisition, etc.). These results, however, still leave open many questions about SLI, but also about the development and the interaction between working memory and linguistic competence, and about how these are specifically related to language production and comprehension. We have not attempted to explore these questions here.

We expect that, given the proven fruitfulness of this approach, future research on SLI in French will include increasingly more comparative studies—inter-pathology studies, inter-language studies, studies comparing children with SLI with L2 children and with bilingual children with and without SLI. Such investigations are crucial to understanding how acquiring French with SLI works (or, rather, doesn't work), and how different children with this condition can be properly identified and can best be helped.

Abbreviations

EEG	electroencephalograph
F	feminine
dB	decibel
INF	Infinitive
L1	First language
L2	Second language
M	masculine
MMHL	mild-to-moderate hearing loss
P	plural
PP	Past Participle
PR	Simple Present Tense
RE	Rolandic Epilepsy
S	singular
SD	Standard deviation
SLI	Specific Language Impairment
TD	typically developping
TDSL	*Troubles Spécifiques du Développement du langage*
TSL	*Trouble Spécifique du langage*
3	third person

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CHAPTER 5

The first language acquisition of French from a generative perspective

Cornelia Hamann
University of Oldenburg

A travers l'analyse des résultats de récentes recherches, ce chapitre présente un survol de l'acquisition typique (et parfois atypique) de la syntaxe en français. Par ailleurs, plusieurs théories génératives concernant le développement du langage sont évaluées au regard des données. L'attention est portée sur des paramètres d'ordre des mots, mis en place très tôt, et sur la phase d'utilisation de sujets nuls et d'infinitifs, ainsi que sur deux autres phénomènes dont l'impact théorique est considérable: les clitiques pronominaux et la formation de questions. Les données indiquent que les verbes finis sont très rapidement placés correctement et qu'il n'apparaît jamais de pronoms clitiques dans des positions non-clitiques. Les sujets nuls apparaissent dans des phrases avec infinitifs, verbes finis, et même – bien que plus rarement – avec des auxiliaires. En français les enfants utilisent plus fréquemment des infinitifs que dans d'autres langues romanes, mais moins que dans les langues germaniques. On remarque que l'emploi de clitiques compléments est retardé de plusieurs mois par rapport à celui de clitiques sujets, tandis que l'utilisation de clitiques réflexifs s'apparente davantage à celle des clitiques sujets qu'à celle des clitiques accusatifs. De la même manière, l'emploi de questions avec un élément interrogatif initial et une inversion sujet-verbe n'est que rare ou tardif, les constructions avec élément interrogatif in situ ou sans inversion étant largement majoritaires. Ces derniers résultats en particulier, peuvent être interprétés comme témoignant du rôle décisif que joue la complexité des constructions pour l'ordre de leur acquisition ainsi que pour la fréquence de leur emploi – ce qui renforce et vérifie l' hypothèse selon laquelle les enfants optent pour des formes grammaticales moins complexes afin d'alléger la charge du traitement.

This chapter gives an overview over some of the most discussed results on typical (and in some areas also on atypical) acquisition of syntax in French. At the same time, several generative theories about language development are measured against the data. The focus is on the early setting of word-order parameters and the phase of subject drop and infinitive use as well as on two further phenomena with theoretical impact: pronominal clitics and question

formation. The data show that finite verbs are placed correctly in French from very early on and that pronominal clitics never occur in non-clitic positions. As to subject drop, it occurs with infinitives, finite verbs and even – though to a lesser extent – with auxiliaries. Infinitives are used by French-speaking children more than in other Romance languages, but less than in certain Germanic languages. For pronominal clitics, we find that complement clitics are delayed with respect to subject clitics, whereas reflexives pattern more with subject than with accusative clitics. Also slow to emerge are constituent questions with fronted question words and subject-verb inversion, variants with the question word left *in situ* or variants without inversion predominate. Especially the latter findings can be interpreted as evidence that the complexity of constructions plays a decisive role for the order of their acquisition and the frequency of their occurrence, which is consistent with the view that children choose less complex grammatical options in order to alleviate processing load.

1. Introduction

1.1 Introductory remarks

This chapter aims to provide an overview of phenomena observed in the acquisition of French. Even though this aim implies completeness, a step-by-step account of all aspects of language development in French will not be provided as in the seminal article by Clark (1985). Instead, it will focus on the third year of life and on certain syntactic phenomena that have been the center of discussion in recent work on acquisition, distinguishing between phenomena which have been observed in several languages and phenomena which seem to be particular to French. Nor will I attempt to sum up and comment on all the important recent results obtained for this period in the acquisition of French. Instead, I will report results obtained in the Interfaculty Project in Geneva in the areas where such results are available, and in so far as they can be considered representative.

In the following, I report on research conducted with generative tools because questions central to acquisition issues can be raised and can be sharply delineated in generative models. As a theoretical framework, I will adopt the well-known Principles and Parameters model (Chomsky & Lasnik 1993), also referring to more recent minimalist notions which have found application in acquisition research. For readers who are not familiar with the relevant literature, I provide an appendix that briefly outlines some of the central assumptions and explains the terminology.

In recent generative work on acquisition, emphasis has been on the fact that many word-order parameters seem to be already set by the time children put together their first word combinations (see Wexler 1998), which is roughly from the second birthday. This holds for the order of non-finite verbs and their complements in the earliest combinations

(see Penner, Schönenberger & Weissenborn 1994; Radford 1990), but can also be observed for finite verbs and their placement. One of the first results indicating the early setting of word-order parameters in relation to such notions as finiteness concerned French. Pierce (1992) observed that French children raise finite verbs over the negation *pas*, whereas they leave infinitives in their base position to the right of *pas*. This finding can be taken to demonstrate that when children use morphologically marked forms, they respect the syntactic consequences of such marking (here finiteness). The same conclusion has been drawn concerning the V2 phenomenon in Germanic languages (Clahsen 1991; Meisel 1990; Platzack 1990; Poeppel & Wexler 1993; Wijnen 1994).

In contrast to word order, other areas of language seem to cause difficulty and children use non-target structures for a considerable period of time. One of the phenomena observed in many languages is that children in their third year omit subjects (Hamann 1996; Hamann & Plunkett 1998; Hyams 1986; Rizzi 1994; Valian 1991; Wexler 1994) giving rise to non-target utterances in non pro-drop languages. Another phenomenon that has been widely discussed is the existence of a stage of (optional) infinitive use (e.g., Hoekstra & Hyams 1996; Rizzi 1994; Wexler 1994; Wijnen 1994) occurring at roughly the same time as the omission of subjects. It has been argued that neither of these is a universal stage but depends on morpho-syntactic properties of the respective language. It will be discussed to which extent these phenomena exist in French and what their magnitude may suggest about the grammar of French in general, and about theories of acquisition.

Many of the generative approaches to acquisition attempting to explain null subjects and optional infinitives have appealed to notions of economy or computational complexity. Truncation, as proposed by Rizzi (1994, 2000), or the Unique Checking Constraint proposed by Wexler (1998) constrain derivations in ways that make the child derivations less complex than the adult derivations. At the same time, these approaches assume that the derivations chosen by the child are not the product of wild grammars, but fall within the bounds of Universal Grammar (UG) even though some of the principles of UG might be underspecified and could mature (see Borer & Wexler 1987; Rizzi 1994; Wexler 2003).

In the same spirit, generative approaches evoking economy and computational complexity have been proposed in order to account for the two phenomena which have been singled out as revealing about and particular to French: the so-called delay of object (complement) clitics and the development of questions.

Regarding personal pronouns, French is different from other Romance languages in that it has a paradigm of subject clitics as well as object clitics. Interestingly, it has been observed that subject clitics occur about 6 months earlier than object clitics in typical development (Hamann, Rizzi & Frauenfelder 1996; Jakubowicz, Müller, Kang, Riemer & Rigaut 1996; Jakubowicz, Müller, Riemer & Rigaut 1997; and much subsequent work) and that object clitics are particularly problematic for children with Specific Language Impairment (SLI) as well as in second language (L2) acquisition (early and adult). Surprisingly, recent research has also established that determiners, which

are homophonous in form and have been classified as heads of determiner phrases (D-heads) like complement clitics, are acquired without delay and very fast (Hamann 2003; Jakubowicz, Nash, Rigaut & Gérard 1998; Kupisch 2001; van der Velde 2003). Various accounts have been proposed for these observations, the most promising of which appeal to computational complexity or its interaction with constraints on the child's grammar or the child's processing capacity (Jakubowicz 2005). The data on the acquisition of French object clitics are therefore crucial not only to the general description of the developmental profile of French children, but also for hypotheses on which kind of economy constraints may be guiding them. From the perspective of linguistic theory, the data on acquisition may also give indications on which of the theoretical proposals about the morpho-syntax of subject and complement clitics is more probable (see also Hamann & Belletti 2006, for a recent discussion).

Computational complexity has also been claimed to be involved in the developmental profile observed for the acquisition of constituent questions (wh-questions) in French (Hamann 2006). Again, French has a system differing from other Romance languages in that it not only uses the standard form with fronting of the interrogative element (wh-element) and subject-verb inversion, but – apart from a periphrastic form – also allows a colloquial variant with wh-fronting but no inversion, as well as a structure where the wh-element remains in situ. Data on the order of acquisition of these forms clearly have the potential to inform on computational complexity and its avoidance in child language.

1.2 Method

As pointed out in the introduction, I aim for a general picture using representative data collected in the framework of the Interfaculty Project *Langage et Communication – acquisition et pathologie* at the universities of Geneva and Lausanne. I will use especially the longitudinal corpora of spontaneous productions of three normally developing, monolingual children, and will also occasionally refer to the corpora of 11 monolingual children with SLI collected during the same project. A brief methodological overview might be helpful for the evaluation of the data discussed in the following sections.

The three unimpaired children are Augustin, who was recorded 10 times between the ages of 2;0,2 and 2;9,30 at his home in Neuchâtel; Marie, who was recorded 17 times between the ages of 1;8,26 and 2;6,10; and Louis, who was recorded 12 times between the ages of 1;9,26 and 2;3, 29. Both Marie and Louis were recorded at their homes in Geneva. More information about these children can be found in Hamann et al. (1996) or Rasetti (2003).[1] In addition, data from the literature will be considered concerning the monolingual children Daniel and Nathalie from the Lightbown corpus as well as Philippe (occasionally also Grégoire) from the Childes corpus (see Lightbown 1977; MacWhinney 1991).

1. The files of Marie are now available on CHILDES.

The 11 language impaired children were clinically diagnosed as SLI by their speech therapists and by a neuropediatrician. Their age range is 3.10–7.11 at the beginning of recording. Six of these children, being under five years of age or five years old at the beginning of recording, were younger than the children usually discussed in the literature on French SLI (see Jakubowicz et al. 1998; Hamann et al. 2003; as well as Cronel-Ohayon 2004 for more details on these SLI children).

1.3 Organization of the chapter

In section 2, relevant facts about French grammar will be introduced: clause structure, properties of pronominal clitics and properties of French wh-questions. Section 3 introduces theories of development, the Computational Complexity Hypothesis (3.1), Truncation (3.2) and the Unique Checking Constraint (3.3). Data on word order phenomena, null subjects, and optional infinitives are presented in section 4. In the next section, the delay of complement clitics is described (5.1), then this phenomenon is related to other developmental phenomena (5.2), and the special status of the reflexive clitic *se* is treated in (5.3). Section 6 presents data on the preferred question constructions and on the omission of subjects in questions. Finally, section 7 gives a summary and conclusions about the developmental theories corroborated by these data.

2. Relevant areas of French Grammar

2.1 French clause structure

French is a SVO language in which the finite verb or auxiliary occurs to the left of frequency adverbs like *souvent* and to the left of the negation *pas*, whereas non-finite forms of lexical verbs always occur to the right of such adverbs.

(1) a. *Jean embrasse souvent Marie*
Jean kisses often Marie
'John often kisses Mary'

b. *Jean n' embrasse pas Marie*
Jean (ne) kisses not Marie
'John doesn't kiss Mary'

(2) a. *Jean a souvent embrassé Marie*
Jean has often kissed Marie
'John has often kissed Mary'

b. *Jean n' a pas embrassé Marie*
Jean (ne) has not kissed Marie
'John hasn't kissed Mary'

These regularities can be explained by assuming that auxiliaries and finite lexical verbs are moved out of the VP to an inflectional position (IP) higher in the clause (Emonds 1978). Since languages differ as to the possibility of moving the finite verb out of the VP, a verb-movement parameter has been postulated, originally called V-to-I (Pollock 1989).

More subtle distributional regularities about the infinitives of auxiliaries and lexical verbs and their position in constructions that contain both an adverb and negation led to the assumption of a Split IP consisting of a Tense Phrase (TP) and an Agreement Phrase (AgrP) first proposed in Pollock (1989). Since then, it has been assumed that the verb raises at least to the tense head T. In approaches which assume an AgrP, which is argued to be higher than the TP (see Belletti 1990; Haegeman 1994), the finite verb would finally be hosted in the head provided by this projection, with the subject raising to its specifier. Including a Complementizer Phrase (CP) for subordinate clauses or questions, we obtain the order of projections CP > AgrP > NegP > TP >VP.[2]

Apart from the possibility of splitting the CP into further projections, French lower clause structure is more complex, using projections like AgrOP for accusative case marking and an auxiliary phrase. Moreover, French shows participle agreement, which is a property of some, but not all, Romance languages.

(3) *Les chaises? Jean les a peintes.*
The chairs (f)? Jean them has painted (f)
'The chairs? John painted them'

This construction involves a participle phrase different from an AgrOP. Since agreement is established through a specifier-head relation, it is assumed that the head of the participle phrase contains the agreeing morpheme on the participle and that the clitic moves through its specifier establishing or checking agreement. If we integrate these projections, we arrive at the following clause structure for French.

(4) (CP) > AgrSP > (NegP) > TP >AgrOP > (AuxP) > AgrPart > VP

2.2 Clitics

In the Romance languages, pronominal clitics are different from full nominal and pronominal expressions showing the specific patterns originally discussed in Kayne (1975) and shown in (5) to (9). Pronominal clitics cannot be used in isolation, cannot be conjoined, cannot be modified or receive focal stress, and they cannot be separated from the verb (except by other clitics). This is true for the subject pronouns *je, tu, il, elle, on, nous, vous, ils, elles* 'I, you, he, she, one, we, you, they (m), they (f)' and *ce*, 'this' as well as for the accusative forms *me, te, le, la, les* 'me, you, him, her, them' of the clitic variants of accusative *nous* 'us' and *vous* 'you', for the dative forms *lui, eux* (him, them) but

2. I will also assume a Split CP as introduced by Rizzi (1997) and elaborated in Rizzi (1999).

also for the reflexive clitics *me, te, se* (myself, yourself, he/her/themselves' and the locative and partitive clitics *y* 'there' and *en* 'of that'.

(5) a *Qui est venu? * Il*
Who is come he
'who has come? He'
b. *Qui as- tu vu? * Le*
Whom have you seen him
'Whom have you seen? Him'

(6) a * *Il et elle viendront*
He and she come(fut)
'He and she will come'
b. * *Je le et la connais*
I him and her know
'I know him and her'

(7) a * *Seuls ils viendront*
Only they come (fut)
'Only they will come'
b * *Je seul le connais*
I only him know
'I know only him'

(8) a * *IL viendra (pas Marie)*
HE comes(fut) (not Marie)
b * *Je LE connais (pas Marie)*
I HIM know (not Marie)

(9) a * *Il probablement viendra*
He probably comes (fut)
'He will probably come'
b * *Pierre le probablement connaît*
Pierre him probably knows
'Pierre probably knows him'

Though these properties are shared by subject (the examples under a) and complement clitics (the examples under b), it has been proposed in traditional (Kayne 1991) and recent (Cardinaletti & Starke 2000; Laenzlinger & Shlonsky 1997) analyses that there is nonetheless a structural difference. Whereas complement clitics are syntactic clitics and ultimately heads, subject clitics behave as full projections throughout the derivation and can be analyzed as weak pronouns, that is as DPs, which cliticize to the verb in phonology only.[3] This different categorial status of subject and object clitics can serve as an obvious – though probably not the only – source of the delay of acquisition of complement clitics as observed in the literature on French (Chillier, Arabatzi, Cronel-Ohayon, Franck, Frauenfelder, Hamann, Rizzi & Zesiger 2006; Hamann et al. 1996).

French complement clitics are assumed to fill a special functional head position in the highest part of the clausal functional structure. Their striking characteristic is the fact that they are nominal arguments appearing in functional positions associated with the verbal domain. In the original base insertion accounts (Borer 1984; Sportiche 1996), complement clitics are assumed to fill a head dedicated to clitic pronouns (Sportiche's "clitic voice") at the same time licensing a *pro* inserted in complement position. This derivation captures the mixed status of complement clitics as functional heads and arguments by the chain connecting the clitic and the argumental *pro*. Alternatively, complement clitics are assumed to be generated in complement position and

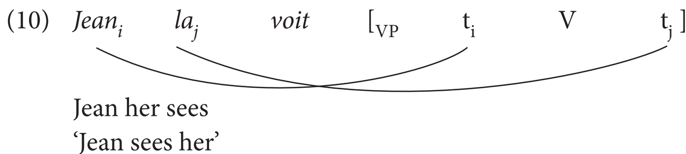
3. Friedemann (1995) and Hamann (2002) present arguments that subject clitics are weak pronouns in Standard but also in Colloquial French. An alternative view treats subject clitics as agreement heads, assimilating French to Northern Italian dialects; see Auger (1995), Zribi-Hertz (1994) and references cited there.

move to an Agr-type head in the high part of the clause (Belletti 1999; Burzio 1986; Kayne 1975, 1991; Rizzi 1978) which probably captures the double nature of the clitic in a more intuitive way. In the derivation of a structure containing a complement clitic, the clitic must be identifiable as a DP at least as far as the AgrParticiple Phrase where it occurs in the specifier as argued in 1.2.1. The crucial step, however, only concerns the head of this DP. See Belletti (1999) for arguments for such a derivation for Italian complement clitics. In both approaches, base insertion and movement, clitic heads and the head ultimately hosting the verb are intimately related or coincident.[4]

Since any account of complement clitics must assume a functional head hosting the clitic in the clausal structure, the presence or absence of such a clitic head can be parameterized. Children will therefore have to establish whether their ambient language has such a head or not.

It also emerges from these considerations that the overall computation affecting syntactic clitics is more complex than that affecting weak (and strong) pronouns. A final further head movement step is included in the former but not in the latter, which is particularly evident in movement approaches as suggested by Belletti (1999). This leads to a difference in complexity between clitic complements and weak pronoun complements, but also concerns subject pronouns if analyzed as weak pronouns, not syntactic clitics.

Chillier et al. (2006) focus on another difference between subject and object clitics, which turns out to be also relevant for the nature and derivation of reflexives. They point out that the derivation of a structure with a complement clitic will contain a chain which, under the VP-internal subject hypothesis, crosses the subject chain.



Jean her sees
'Jean sees her'

As to reflexives, they are fully parallel to accusative clitics in the classical analyses where the clitic is moved from the object position. Like accusative clitics, reflexives are clearly heads, not weak pronouns. Their behavior with respect to auxiliary selection (see 11a and 11b), however, suggests that they might be derived in a different way.

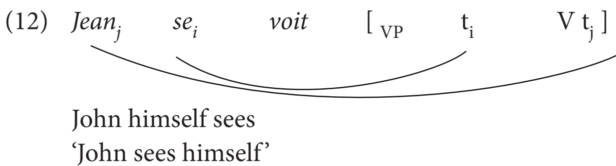
(11) a. *Jean l' a vu*
Jean him has seen
'Jean has seen him'

4. Complement clitics occur in transitive constructions whenever the discourse context requires or prefers the use of a pronoun. Strong pronouns occur in non-clitic positions, e.g., after prepositions and in conjunctions (see Cardinaletti & Starke 2000 and the literature cited therein, see also note 12). French also allows the use of null complements, the use of which is restricted by so far not well understood conditions involving primarily discourse factors (Authier 1989; Lambrecht & Lemoine 2005; Pirvulescu 2006; Roberge 1990; Tuller 2000).

b. *Jean s' est vu*
Jean himself is seen
'Jean has seen himself'

The auxiliary shift *avoir →être* suggests that reflexive constructions are unaccusative-like, as proposed by Burzio (1986).[5] In such an analysis, the reflexive *se* is a marker of unaccusativity and absorbs the external theta-role which gives the reflexive subject-like status. Therefore, Chillier et al. argue"*se* corresponds to the external argument, and the thematic object is moved to subject position, just as in an unaccusative structure". If this is the case, then reflexives are derived by nested chains, unlike accusative clitics, which involve crossing chains.

(12) *Jean*$_j$ *se*$_i$ *voit* [$_{VP}$ t$_i$ V t$_j$]



John himself sees
'John sees himself'

It has been observed that chains crossing the subject chain are difficult for children and atypical populations (see Fox & Grodzinsky 1998), which may be explained by looking into processing mechanisms. If processing works essentially like a push-down automaton, crossed chains are harder to process than nested chains, which allows predictions about acquisition.

2.3 Question types in French

French is unique among the Romance languages in that colloquial French allows in situ questions and a type of wh-question that does not involve subject-verb inversion. Under intuitive assumptions about economy, which we will make precise in 3.1., these question types can be graded according to complexity of construction. We obtain a scale ranging from in situ questions, (13a), via the colloquially frequent (13b) to the standard formulation of questions in (13c) and (13d).

(13) a. *Il va où*? — in situ, colloquial French
he goes where
'where does he go?'

b. *Où il va*? — fronted wh without inversion, colloquial French
where he goes
'where does he go?'

c. *Où va- t-il*? — fronted wh with inversion of a clitic subject
where goes-t-he?
'where does he go?'

5. See also Cocchi (1995) and Kayne (1993) on auxiliary selection.

d. *Où va la maman*? fronted wh with inversion of a lexical subject
where goes the mommy
'where does mommy go?'

f. *Où est-ce qu' il va*? periphrastic
where is it that he goes
'where does he go?'

Though it has the surface form of a declarative sentence, (13a) is marked as a question by the insertion of a wh-word in the position of the questioned constituent, which leads to the term in situ question. The wh-word is not moved before Spell-Out, nor does the verb raise past the subject; (13b) shows a fronted wh-word, but no subject-verb inversion; in (13c) and (13d), the wh-word has been fronted, and the verb and the subject undergo inversion. French thus has a question construction involving no movement, a question construction with movement of the wh-word only, and a construction involving two movement chains, the wh-chain and the verbal chain.

Some question elements (*comment* 'how', *où* 'where', *quand* 'when') occur in all of these constructions, while others are structurally constrained. *Pourquoi* 'why' occurs only in fronted wh-questions when it introduces a reason-question, though it can occur in situ when it introduces a purpose-question. In the French spoken in France and Switzerland, *quoi* 'what' cannot be fronted nor occur in embedded interrogatives. These constraints do not seem to hold for *quoi* 'what' in Canadian French.

For completeness, (13f) gives the frequent periphrastic question construction with *est-ce que* 'is it that'. This construction is compatible with practically all question words and is particularly frequent for object questions. Object questions thus can be formulated as an in situ construction (14a), with the frequent periphrastic *qu'est-ce que* ('what is it that') (14b) and, in higher registers as (14c). *Est-ce que* 'is it that' and *qu'est-ce que* can be analyzed as overt complex Q-morphemes, the chunks ESK and KESK, respectively. Under this view, periphrastic object questions are fronted wh-questions without inversion.

(14) a. *Tu fais quoi*? in situ
you do what
'what are you doing?'

b. *Qu'est-ce que tu fais*? periphrastic
what is it that you do?
'what are you doing?'

c. *Que fais-tu*? fronted wh-question with inversion
what do you
'what are you doing?'

Given this range of question constructions in the target language, the French child can make choices.[6] Therefore the investigation of question use can provide direct evidence for possible economy constraints or for avoidance of complexity. In addition, the (non)-occurrence of structural phenomena such as null subjects or infinitives in specific question types in early child French can tease apart approaches to early syntax.

3. Theories of development

I assume Full Continuity which implies that Universal Grammar (UG) is available to the child and that principles are never violated. It also implies that children employ the same functional projections as adults and that children's grammars differ from adult grammar only in the way that adult grammars can differ from each other (Crain 1991; Pinker 1984). This assumption raises the question why child utterances in many instances do not conform to the target norm.

One possible answer is to propose that children have a limited processing capacity which largely constrains their utterances (see Bloom 1990). This assumption can be closely linked with the observation that computationally complex constructions appear later than simpler constructions and are avoided or cause inordinate difficulties in atypical development. This is exactly what Jakubowicz (2005) and Hamann, Tuller, Delage, Henry and Monjauze (2007) observe. By introducing a complexity metric, Jakubowicz (2004, 2005) aims to give a more precise notion of computational complexity. This metric then allows predictions as to which structures are more complex than others and will therefore appear later or be more difficult. Since Jakubowicz's approach to acquisition has been designed for French and the specific phenomena of question formation and the delay of object clitics, we will pay particular attention to her Computational Complexity Hypothesis (CCH).

Another possible explanation is the assumption that certain principles of UG may be underspecified and will mature. This is the approach pursued by Wexler (1998) who introduces the Unique Checking Constraint to severely constrain the complexity of a child derivation, and who assumes that this constraint will wither away with maturation. This approach also has direct implications for French as pointed out by Wexler (1998, 2003).

Another influential approach to the phenomena observed in early child syntax is the Truncation approach (e.g., Rizzi 1994, 2000). In its earliest version, it was a maturational approach, since it simply assumed that the CP (and other structures) could be truncated in child grammar and that an adult axiom about the CP as the root of every clause would mature. In subsequent versions, a more principled account of why the CP can be missing in child structures as well as how and why it becomes obligatory

6. Chang (1977) and Cheng and Rooryck (2000) argue for differences in interpretation, but see the discussion in Hamann (2006).

was given (Rizzi 2000). More importantly, by pointing out the fine-grained structural restrictions on certain "simple" child derivations such as declaratives with omitted subjects, Rizzi (2000: 278) argues against models in which "performance can directly override competence". Instead he proposes that children might opt for less complex structures admitted by UG – such as null subjects, which also occur in adult diary registers (Haegeman 1990, 2000) – in order to alleviate processing loads. With this suggestion, Rizzi's approach offers a compromise between performance approaches to acquisition and accounts that assume a child grammar differing from the adult grammar due to constraints subject to maturation.

3.1 Computational Complexity

The Computational Complexity Hypothesis (CCH) was evoked in Jakubowicz et al. (1998) and was subsequently refined and made operational in Jakubowicz (2004, 2005).[7] The hypothesis explicitly defines a metric on derivations based on the number of times that the basic operation Merge is applied. In particular, the metric states that external Merge is less costly than internal Merge – movement in a more traditional terminology – and n applications of (external or internal) Merge are less costly than n+1 such applications. This implies that merging n elements is less costly than merging n+1 elements.

In the case of external merge, this means that less structure in the tree – probably triggered by a smaller set of elements in the numeration – leads to a simpler derivation. In the case of internal Merge, which I call movement here, two things can be derived from this metric. First, a movement chain with n links is less complex than a chain with n+1 links, that is, moving one element n times is less complex than moving it n+1 times. Additionally, a derivation requiring n chains is less complex than a derivation with n+1 chains, that is, moving n (different) elements is less costly than moving n+1 elements.

Another assumption that has been successfully applied to adult and child language is the idea that, in traditional terms, overt movement is more costly than covert movement. In the minimalist terms of Merge and Agree, this can be formulated such that Merge and Agree establishing a chain are less costly than internal Merge and its chain. Since the metric proposed by Jakubowicz (2005) explicitly states that external Merge (before or after Spell-out) is less costly than internal Merge, this follows straightforwardly from the metric.

Jakubowciz (2004, 2005) provide evidence that the metric indeed makes the right predictions for the use of object clitics and question formation in typical and atypical French language development. Though Jakubowicz's analysis for subject and object

7. See also Clark and Roberts (1993) for a similar definition of complexity and Chomsky (1995) or Collins (2201) on some necessary extensions of this simple notion.

clitics is not the same as the one proposed above[8], the remarks on the higher complexity of a structure with an object clitic in 2.2 show that the conclusion as to the ranking of complexity would be the same. As to the complexity of question types, an intuitive scale of complexity was assumed in section 2.3, which is exactly the scale derived by the technical demonstration given in Jakubowicz (2004) (see also Hamann 2006 for more details). Jakubowicz (2005) comes to the conclusion that "less complex derivations are input convergent (i.e., correctly spelled out and pronounced at the interfaces) before more complex ones".[9]

The approach does not make direct predictions about the occurrence of infinitives and null subjects in child language, unless it is extended in ways that allow children to be more economical than adults in their derivations. The truncation approach and the Unique Checking Constraint provide such extensions. They both postulate child structures and derivations which – according to the above metric – are less complex or more economical than adult structures and derivations.

3.2 Truncation

Truncation, first proposed by Rizzi (1994), derives the occurrence of root infinitives and the omission of subjects by the assumption that structure can be truncated in child language, in particular, the Complementizer Phrase (CP). Data from adult registers allowing subject drop lead Rizzi (1994) to add the hypothesis that empty categories have to be licensed only if this is structurally possible.[10] This implies specifically that empty categories in the specifier of the root will survive without formal licensing.

More recently, Rizzi (2000) has pursued an idea very similar to that taken up in Jakubowicz (2004, 2005) by suggesting that early child utterances show truncation because the child grammar is as economic as possible. In the framework of Rizzi (2000), two competing principles are responsible for the early grammar, the principle of 'structural economy' and the principle of 'categorial uniformity' as follows:

(15) Structural Economy
Use the minimum of structure consistent with well-formedness constraints.

(16) Categorial Uniformity
Assume a unique canonical structural realization for a given semantic type.

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8. Jakubowicz et al. (1998) assume that subject clitics are agreement heads and thus do not differ in categorical status from complement clitics.

9. The metric thus predicts that in-situ questions occur before questions with a fronted wh-word and that constuctions involving a DP complement or a subject clitic will occur before children use object clitics.

10. Haegemann (1990, 2000) suggests that adult diary drop is best analyzed with a truncated CP.

The competition between these principles implies that the CP remains optional as long as the child has not realized that declarative main clauses, being of the same semantic type as embedded clauses, must involve the CP. As long as the CP is not obligatory, truncated structures on the clausal level are possible. If the structure up to and including the Tense Phrase (TP) is truncated, infinitives will surface. An empty category in the specifier of the root of the remaining structure will survive, so null subjects will co-occur with infinitives. However, null subjects can also occur with finite constructions if the child has projected as far as TP or the Agreement Phrase (AgrP), but has truncated the CP. Moreover, since null subjects are restricted to the specifier of the root, non-initial null subjects are excluded. Structures with non-initial subjects are, for instance, topicalizations in V2 languages and constituent questions with a fronted wh-element and subordinate clauses with a complementizer. In such structures, the null subject must be formally licensed, which is not possible in non-pro-drop languages.[11]

Although originally formulated to account for truncation on the clausal level, the two principles invite speculation as to other semantic types and syntactic categories. Of particular interest here is the nominal domain (Rizzi 2000: 289). The canonical semantic type of a DP is an individual or entity which functions as an argument, so that by categorial uniformity, the child should categorize as a DP whatever she has semantically classified as an individual or entity serving as an argument. As long as this categorization is not made, the DP-layer is optional and full DPs will alternate with bare NPs. In French, where determiners are practically obligatory and bare nouns cannot be used as arguments, "categorial uniformity" for DPs will be reached fast and determiners will be supplied early. However, truncation does not necessarily predict a close developmental parallel to the use of infinitives or null subjects as "categorial uniformity" may be acquired at different times in the nominal and the verbal domain and may depend on language specific properties in each case.

For complement clitics, which have the same form and are of the same syntactic category as determiners, the child has to resolve the problem that what behaves overtly like a functional head in cliticizing to the finite verb has argument status on the semantic level. Therefore, "categorial uniformity" will be hard to achieve in this case,

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11. In particular constructions such as:

(i) *ôter tout ça*
empty (inf) all that

and the constructions quoted under (20) are predicted by truncation. Constructions such as (ii-iv) are predicted not to occur. See the discussion in Rizzi (2000) or in Hamann (2002, 2003, 2006).

(ii) * *Où est* (fronted Wh and a non-initial null subject)
where (he) is

(iii) * *Ou dame habiter* (fronted Wh with an infinitive)
where lady live

(iv) * *das muss (ec) zusammenbauen*
that must (I) put together (non initial null subject in a topicalization construction)

and "structural economy" will win the competition for a long time. An economical way of solving the conflict might be the insertion of a phonologically null pronoun *pro* in argument position, an option allowed by French grammar in special cases (Authier 1989; Tuller 2000). In this case, the child would adhere to categorial uniformity by employing a DP argument and yet be as economical as possible in using a lower projection and a non-overt element. Note that non-overt elements (apart from copies) can be considered to be more economical than overt elements for the simple reason that they need not be treated in the phonological component.

In a truncation approach, one can derive predictions about the order of acquisition of the different question types by the principle of economy. Additionally, it makes precise predictions on the occurrence of infinitives and null subjects in each question type. In particular, null subjects are excluded in fronted wh-questions.

3.3 Optional infinitives and the Unique Checking Constraint

Emphasizing the optional use of infinitives in child utterances, Wexler (1994) suggested that grammatical tense marking might be missing in the early grammar. Null subjects were analyzed as PRO, the type of subject also occurring in adult infinitives, and were predicted to occur in the structures missing tense.

In the Agreement or Tense Omission Model (ATOM), Schütze and Wexler (1996) extended the investigation from the use of infinitives and null subjects to the case distribution on overt subjects. Findings on the distribution of nominative and accusative case led these authors to postulate that not only tense might be missing in infinitives. Alternatively, a missing agreement projection would also result in a surface infinitive. In allowing the omission of certain projections, ATOM and truncation alike lead to simpler structures in the sense of Jakubowicz's complexity metric.

Then Wexler (1998) introduced the Unique Checking Constraint (UCC) as in (17).

(17) Unique Checking Constraint
The D-feature (determiner feature) of DP can only check against one functional category.

The constraint, in taking out (at least) one link of the chain involved in raising the subject to its Spell-Out position, directly recalls Jakubowicz's metric and leads to structures which will be measured as less complex than the corresponding adult derivation. The constraint also derives ATOM because the categories Tense (Tns) or Agreement (Agr) may be omitted by the child in order to obey the UCC. So with the UCC operative in child language, optional infinitives are predicted by the omission of Tense or Agreement. Null subjects will occur in [-Tns] environments as they are PRO. Finite null subjects are of a different nature and are assimilated to topic-drop or are derived in another manner, which we will discuss in section 4.3.

Because object clitics involve a D-chain of more than one link under both, a movement and a base-insertion approach, the UCC predicts the omission of object clitics

(see Wexler 2003 for particulars).[12] Hence infinitives should occur and complement clitics should be omitted as long as the UCC is operative, predicting a close relation of the two phenomena.[13]

The UCC, does not make any particular predictions about the order of acquisition of question types. It has to be extended with some natural economy assumption like the CCH to account for the pattern we observe. Such natural assumptions are already implicit and also partly explicit in Wexler (1994).

Whereas all three approaches share the assumption that child derivations are as economical as possible, there are two major differences. One difference emerges when making precise what "possible" means in this context. The CCH predicts the emergence of simple structures before more complex ones (subject clitics before object clitics and wh-in situ questions before other question types), but does not a priori predict that the child grammar allows structures which are not among the target derivations, such as null subjects. The other difference concerns with the cause of the child's choice of economic structures. Jakubowicz (2005) refers to processing limitations, whereas the two other approaches suggest mechanisms within the child's grammar that create less complex structures.

Wexler (1994) appealed to general economy notions and the UCC (Wexler 1998) defines a constraint that delimits the possible child derivations, leading to structures which – according to the complexity metric – are less complex than the target structures. Here the assumption is that the constraint will whither away as the child grammar matures. Note that Wexler does not suggest that the child's maturing processing abilities will lead to a maturation of the grammar.

In the same spirit, truncation explicitly defines an economy principle, although "economy" is not explained and the canonical hypotheses about this concept must be assumed to obtain. It seems clear that Rizzi's use of "economy" covers the precise notion defined by Jakubowicz. Rizzi's notion also implies that the use of empty categories is more economical than the use of overt categories. In addition, the truncation approach outlines a principled way in which the child will arrive at structures which are economic, but not among the possible target structures, and it outlines a principled reason why a more economical child structure will be finally replaced by the more

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12. See also Wexler, Gavarró and Torrens (2004) on the difference of French and Spanish data on the acquisition of complement clitics. Their account crucially involves the absence or presence of participle agreement.

13. See Hamann (2002, 2003, 2006) for a detailed discussion of the predictions of ATOM and UCC. The most notable prediction is that null subjects should occur only with infinitives so that finite null subjects are a different phenomenon. As to the case distribution facts, Schütze and Wexler (1996) observed that structures like *her drink apple juice, she drink apple juice*, sometimes even *my drink apple juice*, and *she drinks apple juice* occur, whereas *her drinks apple juice* was not found.

Table 1. Distribution of finite and non-finite verbs with respect to negation in French
a) Pierce (1989): three children ranging from 1;8 to 2;6

	+finite	**-finite**
pas verb	11	77
verb pas	185	2

b) Verrips and Weissenborn (1992): three children ranging from 1;5 to 2;3

	+finite	**-finite**
pas verb	7	37
verb pas	260 (246)	2

complex adult one. Finally, Rizzi (2000) suggests that the choice of less complex constructions might be a strategy for the reduction of processing load allowing an interaction of linguistic complexity and processing limitations.

In the following, I will adopt an approach that resembles truncation in that it assumes a principle of economy and a principle of categorial uniformity which are in competition. I will also assume that the notion of economy can in large parts be made precise and be measured by the number of applications of Merge, just as the CCH suggests. Additionally, I would like to postulate that structures involving chains crossing the subject chain lead to more complex derivations than structures where such chain-crossing does not occur.[14]

4. Parameters, null subjects and optional infinitives in child French

4.1 Early parameters

In the literature about the acquisition of French, two solid findings point to early parameter setting. The first concerns verb raising.

Pierce (1989, 1992) presented data showing that French children as young as two years are sensitive to the finite/non finite contrast with respect to negation, which is a reflex of the verb-raising parameter discussed in 2.1. The sentences in (18) illustrate child use, while Table 1 shows that the distribution is consistent.

(18) *veux* *pas* *lolo* vs. *pas* *dormir* (Pierce 1992)
want not water not sleep (INF)

14. It can be shown that under the assumptions that processing works like a push-down automaton, a crossed chain is harder to process, since the first gap that is encountered does not resolve the dependency. Crossed chains therefore clearly are a factor in processing. Here I would like to suggest that this factor is relevant also for linguistic complexity.

In their study of three different children of an even younger age, Verrips and Weissenborn (1992) find a very similar distribution. They also provide a detailed analysis according to verb type. If we assume that auxiliaries are base-inserted in T and can therefore serve as evidence for the early availability of functional structure, but not necessarily of verb raising, these should be treated separately. Counting only lexical verbs, copula *être* 'be', possessive *avoir* 'have', main verb *aller* 'go' and modals, there still are 246 finite verbs which are placed correctly and only 2 constructions which do not conform to the target grammar. It is clear that French children have set the verb raising parameter correctly.

The second result that has emerged from recent research is that subject and object clitics are placed correctly from their first occurrence. Rasetti (2003: 293) states that "no placement error is attested in the entire Geneva corpus" (i.e., in the many recordings of Augustin, Marie and Louis; age span 1;8,26–2;9,30). This indicates that the lexical items are correctly classified and that the syntactic consequences of this classification are respected. Again, this implies that French children have correctly set the parameter that activates the clitic position from the earliest syntactically relevant productions.

The study of Hamann et al. (1996) explicitly addresses the question of position by contrasting the placement of clitic forms and the placement of the strong pronoun *ça* in the Augustin corpus. The study established that "distributional constraints are respected in the child's utterances apparently without exceptions" (Hamann et al. 1996: 317). In the Augustin corpus,[15] there are 282 occurrences of unambiguous subject or object clitic forms, none of which occurred in a non-verbal utterance, or in any other non-clitic position.

In contrast to the restricted distribution of clitic forms, the non-clitic demonstrative *ça* 'this' has a wide distribution. In the adult grammar, *ça* freely occurs in preverbal subject position, as a post-copular pro-predicate in the expression *c'est ça* 'that's it', as a post-verbal object, as a prepositional object, in right and left dislocated position, modified by the universal quantifier *tout* 'all' and in non-verbal utterances, for instance as a short answer to a question. This wide distribution is mirrored exactly by the early production as Hamann et al. (1996: 317, 318, table 2) showed for Augustin. Moreover, they report 129 occurrences of *ça*, which in 121 cases was found in a position from which a clitic would be excluded in the adult grammar. Already in the first two files (ages 2;0,2 and 2;0,23), 15 of the 17 occurrences of *ça* are in positions from which a clitic would be banned in the adult grammar, whereas all the 21 occurrences of clitics are placed in clitic position.

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15. In adult French, the major clitic position is the immediate preverbal position. This can be adjacent to the verb, or can be separated from the verb by another clitic, as in *Je la lui donne* 'I it him give'. There are also two kinds of immediate post-verbal positions occupied by clitics in special constructions: main questions for subject clitics (*est-il parti*? 'is-he left') and non-negative imperatives for object clitics (*prends-le* 'take-it'). In all other positions, clitics are excluded. See section 2.2. for more details.

Hamann et al. (1996) thus provided clear evidence that the lexical distinction between clitic and non-clitic forms is acquired early, together with the major syntactic consequences of this distinction. It can be concluded that the clitic parameter is set correctly.[16]

Interestingly, both verb raising and clitic placement are mastered by French SLI children also. At least, there are no reports in the literature that these areas cause difficulty. On the contrary, Jakubowicz et al. (1998) and Hamann et al. (2003) comment on the absence of clitic placement errors, while Hamann and Belletti (2006) provide a detailed study of different error types which are all absent in the speech of the children with SLI. As to clitic placement, it has been discussed as an area of difficulty in L2 and bilingual acquisition in many studies (e.g., Crysmann & Müller 2000; Granfeldt & Schlyter 2004; Hamann & Belletti 2006; Herschensohn 2004; Hulk 1997; White 1996).

4.2 Null subjects and optional infinitives

Research has shown that there is a clear phase of null subject use in child French during the third year. Figure 1 illustrates the use of null subjects in all sorts of verbal environments (except imperatives, subject questions and subject relatives) in the corpus of Marie. Null subject use shows a high peak of 60% in figure 1, and averages at 31.2% for Marie over the period of observation. For Augustin and Louis, null subjects average at 35.5% over the period of data taking (calculated from Rasetti 2003: 139, table 3). Such a phase of subject drop has been established in other studies on the development of French and for various other children (De Cat 2002; Phillips 1995; Pierce 1992; Plunkett & De Cat 2001).

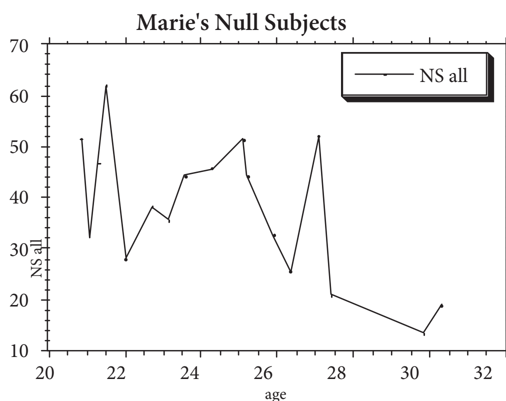

Figure 1. The occurrence of null subjects in Marie's speech (all contexts)

16. Note here that subject clitics do not occur with infinitives (Pierce 1992), which can serve as an additional indication for the availability of functional structure.

The examples in (19) show typical null subject use in the speech of Marie and Augustin. Null subjects occur in finite (19a) and non-finite (19b) contexts. Note that both children drop subjects from finite and non-finite constructions.

(19) a. *est par terre* Marie 1;9
is on earth
'it is on the floor'
b. *ôter tout ça* Augustin 2;0
empty(INF) all that
'I am emptying all that'

Optional infinitives, even though closely related to the occurrence of null subjects in theoretical accounts (see the UCC and truncation), are much less frequent in French child language than null subjects. They are also less frequent than in other languages at a comparable developmental stage. Jakubowicz et al. (1998) found only about 10% infinitives in an experiment on elicited production with young French children. Averaging over the period of observation gives 10.8% infinitives in Augustin's spontaneous production of verbal utterances, 18% for Marie, and 13% for Louis. Such low figures might not be surprising since French is a Romance language and optional infinitives have not been observed in Romance pro-drop languages. However, only under the assumption that subject clitics are syntactic clitics – that is preverbal agreement morphology, and not DPs as suggested here – can French be considered a null subject language on a par with Northern Italian dialects (see Friedemann 1995; Hamann 2002; Hamann & Belletti 2006; and Poletto 2000 for a discussion).

An argument against the claim that French patterns with pro-drop languages with respect to optional infinitive use is the fact that in Italian, Spanish and Catalan, the percentages of observed infinitives are much lower, ranging from 0.1 to 3% in most children and peaking at 22% in one Italian child (see Hamann 2002: 243 and the references cited therein). Moreover, a closer look at the development of French children shows that infinitives occur at peaks of 30–45%, so that infinitive use in French is clearly different from other Romance languages.

Table 2 gives the means and the peaks of infinitive use (calculated from all verbal utterances) for the three children from the Geneva corpus, Daniel and Nathalie from the Lightbown corpus, and Philippe from the Childes data base.[17]

17. Only infinitives were considered for these counts. So here and in the following, I use the term 'infinitive' if only infinitives are considered, and the term 'non-finite' if both infinitives and bare participles are included in the count. For some theoretical considerations it can be important to separate infinitives and past participles (see Rizzi 1994; Friedemann 1992; Hamann 2000); however, for a rough count on finiteness, both can be lumped together as 'non-finite'. The decision as to the status as infinitive or past participle for verbs of the *–er* group was made on the basis of the context or the situation. See also Hamann (2002, 2003, 2006) for a discussion of this problem.

For all these counts, the same morphological criteria were used, and detailed analyses for each of these children can be found in Rasetti (2000, 2003).

Table 2. Percentage of infinitives in verbal clauses in 8 normal French children

child	age	peak	at age	mean
Augustin	2.0–2.10	40	2.1.	15
Marie	1.8–2.3	30	2.1.	18
Louis	1.9.–2.4.	40	1.10	13
Daniel	1.8–1.11	45	1.9	14
Nathalie	1.9–2.3	40	2.0	20
Philippe	2.1.–2.7	30	2.2.	14
Gregoire	1.8.–2.3	35	1.8	26

The data displayed in table 2 show that there is a phase of infinitive use in the language development of French children. This phase seems to be less pronounced and shorter than the phase described for Germanic languages (see Clahsen 1991; Hamann & Plunkett 1998; Platzack 1990; Radford 1990; Weissenborn 1990; Wijnen 1997), but has to be accounted for in theories of language development of French, as well as in the assumptions about the target system.

It also has to be noted that Augustin, Marie and Louis use null subjects more frequently than infinitives. Occasional infinitives occur, however, up to the end of recording in the speech of all the children under investigation. One of the possible explanations for the higher frequency of null subjects is the fact that French children drop subjects in constructions with lexical verbs, with modals and with copulas and auxiliaries, whereas infinitives only occur with lexical verbs.

Root infinitives have been identified as a criterion for SLI in English where the grammar of SLI children has been described as exhibiting an extended optional infinitive stage with the UCC operative for a very long time (see Rice & Wexler 1995, 1996; Wexler, Schütze & Rice 1998). If SLI is indeed delayed development as the EOI approach suggests, then it might be expected that the short lived optional infinitive stage in typical French children will be magnified in French SLI. Several studies have shown, however, that this is not the case for older French children. Jakubowicz et al. (1998) report that infinitives are not characteristic for the 13 children they studied. The ages of these children range from 5;7 to 13;1, so that it might be the case that they are too old to still show the short lived phenomenon of infinitive use in French. Hamann et al. (2003) present data on the children from the project mentioned above-where the youngest child was 3;10 at the beginning of recording. They divided the children into a younger group (3;10 – 5;0) and an older group (5;7–7;11) in order to investigate the occurrence of root infinitives at the ages also studied by Rice and Wexler (1995). For the older group, they corroborate the findings reported by Jakubowicz et al. (1998) in that the children used less than 5% non-finite forms (infinitives and past participles). In contrast, all the six children under five years of age used non-finite forms with higher percentages with two of them exhibiting rates as high as 70%. This finding allows us to argue that root infinitives indeed constitute a developmental phase

in French, even if they are not as frequent, and even if the phase is not as long as in other languages such as Danish, Dutch or English.

Null subjects are used by all the SLI children of the Geneva project, from about 5% in the older group and around 38% in the younger group on average. The two children with the high rates of infinitives also use null subjects at high rates (68.4% and 75%). Note that null subjects occur in constructions with finite verbs at a rate of 21% in the younger group (see Hamann et al. 2003).

4.3 The distribution of null subjects

In many languages, null subjects occur more with infinitives than with finite constructions (e.g., Phillips 1995). This is also true for French, but null subjects in finite constructions occur quite frequently. Table 3 sums up these observations for the three children from the Geneva corpus and some of the children studied in the literature using Rasetti's (2003: 139) new analyses. Examples of finite null subjects from Augustin's speech are given in (20)

(20) a. *est pour maman* Aug 2;0,02
is for mom

b. *veux jouer dinettes* Aug 2;0,23
want play playkitchen
'I want to play with the playkitchen'

c. *met a patte là* Aug 2;3,10
puts the paw there
'he is putting his paw there'

Finite null subjects peak at 49.1% in Augustin's development, at 40.9% for Marie, at 75.0% for Louis, at 36.7% for Philippe, at 47.1% for Daniel, and at 41.1% for Nathalie. These data imply that theories of development do not only have to explain the occurrence of infinitives, the occurrence of null subjects and the nature of their relation to each other, but that they also have to account for the occurrence of null subjects in finite contexts.

Table 3. French null subjects in finite and non-finite clauses

Child	**Finite clauses**	**%**	**Non-finite clauses**	**%**
Augustin	175/646	27.1	90/99	90.9
Marie	254/1219	20.8	187/195	95.9%
Louis	213/871	24.5	155/167	92.8
Philippe	296/1471	20.1	280/320	87.5
Daniel	191/436	43.8	219/267	82.0
Nathalie	89/301	29.6	79/105	75.2
Total	1218/4944	24.6	1010/1153	87.6

In section 3, we discussed that finite null subjects are predicted to occur in the same period as root infinitives by truncation, but have to be treated as a separate phenomenon by the UCC account. It has been suggested that finite null subjects are to be assimilated to topic-drop (see Bromberg & Wexler 1995; Sano & Hyams 1994; Schütze & Wexler 1996).

However, there is evidence that the use of finite null subjects and infinitives are developmentally related; see Haegeman (1996) for Dutch, and Hamann and Plunkett (1998) for Danish. The latter authors showed that the use of infinitives and finite null subjects is strongly correlated. Such a correlation is hard to explain if finite null subjects are due to topic-drop and thus independent of infinitive use.

Wexler (2000) addressed this problem and proposed that finite null subjects are not necessarily dropped topics. Following Hoekstra and Hyams (1996) who pointed out that French children generally produce only singular finite verb forms in the phase under discussion, Wexler (2000) suggested a morphological analysis of verb forms which implies that so-called finite forms in early child language are in fact not specified for tense and are thus what I call "disguised non-finite forms". Since only singular forms occur in early child French, these might be stem forms and could be analyzed as [+Agr, -Tns]. Under this analysis, they license PRO. Let us name the UCC hypothesis with this additional assumption about "disguised non-finite forms" (in some languages) the UCC+.[18]

Interesting in this connection is an observation by Plunkett and Strömqvist (1991) and Sano and Hyams (1994) who described an asymmetry in the occurrence of null subjects with lexical verbs and with auxiliaries or copulas. If copulas and auxiliaries are base-inserted in T, they necessarily carry the tense feature and cannot license PRO. So they cannot occur in the infinitive and would not license a null subject in the UCC account. It also follows that finite auxiliaries and copulas cannot be analyzed as "disguised non-finite forms", so the UCC+ does not predict null subjects in these contexts either.

Comparing null subject use on finite lexical verbs and null subjects on auxiliaries and copulas in several French (and Danish) children, Hamann and Plunkett (1998) found a rate of 34.2% of null subjects in finite lexical verbs and 25.9% of null subjects on copulas and auxiliaries. Rasetti (2003) confirmed this asymmetry (see also Hamann 2002, 2003; Plunkett & De Cat 2001). However, the percentages also show that auxiliaries allow null subjects in French. If we leave the copula aside, which shows low rates of subject omission as Rasetti (2003) demonstrates, we find null subjects with auxiliaries at a rate of 37.9% in Augustin's speech, at 24.8% in Marie's and 28.6% in Louis's (Rasetti 2003: 163). Augustin even drops more subjects from constructions with auxiliaries and copulas (34.1%), than from constructions with finite lexical verbs (22.2%).

18. I leave to the reader the consideration of the old argument bearing on the early knowledge of finiteness derived from the distribution of finite and non-finite verbs with respect to the negative element *pas*. It is not quite clear what can be concluded from this distribution if forms hitherto analyzed as finite now become 'non-finite'.

These data are not unique to French since similar figures have been reported for Danish (Hamann 2002).[19] Therefore, it is likely that the explanation is not to be found in specific properties of French but in the early child grammar. Truncation offers an account that is consistent with these observations, even if it is not quite obvious how this account can describe the observed asymmetry (see Hamann & Plunkett 1998 for a discussion).

5. The acquisition of pronominal clitics

5.1 The delay of complement clitics

Following Clark (1985), several studies have reported a substantial delay of complement clitics with respect to subject clitics in the spontaneous production of typically developing French children (Hamann et al 1996; Jakubowciz et al. 1996, 1997; Jakubowciz & Rigaut 2000; Pirvulescu 2006; Schmitz & Müller 2008). Studies on elicited production (Chilliers et al. 2006; Jakubowicz et al. 1996, 1997) consistently find that subject clitics are produced at a much higher rate than complement clitics.[20]

For French children with SLI, the delay is so pronounced that the prolonged absence of complement clitics has been identified as a characteristic property of French SLI (Hamann et al. 2003; Jakubowicz 1998, 2003) and has been proposed as a diagnostic criterion (Paradis, Crago & Genesee 2003). The delay has also been observed in other acquisition modes such as bilingual L1 acquisition (Crysmann & Müller 2000; Hulk 2000; Schmitz & Müller 2008), in early L2 (Belletti & Hamann 2004; Prévost 2006; White 1996), as well as in adult L2 (Granfeldt & Schlyter 2004; Herschensohn 2004).[21]

Studies on typical development report that subject clitics are used from roughly the second birthday, whereas complement clitics are omitted until they appear about 4 months later, and are used systematically about 6 months later. The three children from the Geneva project clearly display this pattern. As table 4 shows, Augustin, the child analyzed by Hamann et al. (1996), produces 17 subject clitics (29.8% of verbal utterances) at the age of 2;0, and has produced 99 subjects clitics until the age of 2;6. At the

19. It has been shown that Danish children can also have a high rate of null subjects in copula constructions in some of their recordings. We find rates of 25% or 31% in some of Anne's recordings, and 37% or even 50% in some of Jens' recordings. See Hamann (2002) for a detailed discussion.

20. Note that this asymmetry also holds when placeholders are considered. It is interesting to note that placeholders are used (e.g., by Augustin) for determiners and also for subject clitics. In contrast to the pattern for determiners where placeholders are replaced by correct forms in the course of development, subject placeholders do not pattern in the same way: Subject drop is the predominant choice in the early recordings counterbalanced by subject clitics together with the use of subject placeholders (see also Hamann 2002: 54ff). For more detail on the identification of subject drop see also Hamann et al. (1996).

21. See Hamann and Belletti (2006) for a recent discussion of the phenomenon in different acquisition modes.

same time (2;0–2;6), he has used only 4 complement clitics. At the age of 2;9,2, he uses complement clitics at a rate of 14.3% in relevant utterances and at the age of 2;9,30, this rate has gone up to 33.9%. Louis shows the same profile as Rasetti's (2003) analysis shows. He produces 29.4% subject clitics at the age of 1;9,26, the beginning of recording (Rasetti 2003: 155). At this time, complement clitics are absent. He starts using them at a rate of only about 5% from 2;0,8 till 2;1,20, and shows a rise to about 11% between 2;2,20 and 2;3,29 (Rasetti 2003: 257). Marie, also analyzed by Rasetti (2003), already uses 66.7% subject clitics at the age of 1;8,26, which is a rate attained by Augustin only at the very end of recording (Rasetti 2003: 155). If we take this use of subject clitics as a measure for language development, it might not be surprising that Marie already uses complement clitics at a rate of 16.7% at that early age (Rasetti 2003: 257). Still, even if complement clitics are not totally absent in her early productions, they are much rarer than subject pronouns and are omitted quite often at the same time (58.3% omission of complement clitics at 1;8 and 16.7% at 2;5). An initial absence of complement clitics and a 5 months delay have also been reported in the literature for Gregoire from the Childes database (see Friedemann 1992; Rasetti 2003; Schmitz & Müller 2008).

Table 5 gives a more detailed analysis of complement use including the production of lexical complements and of omissions. It shows that in Augustin's production, complement clitics reach a level of around 30% occurrence – the level found for subject clitics at the very beginning – only in the last recording. At this stage, we observe a decrease in the rate of the occurrence of lexical complements as well as in the rate of omissions. The same is true for Louis (Rasetti 2003: 257).[22]

Table 4. Occurrences of subject and complement clitics in relevant utterances in the Augustin-corpus

Age (y;m,d)	verbal utterances	Subject Clitics	% of verbal utterances	compl. clitics	% of relevant utterances
2;0,2	57	17	29.8	0	0
2;0,23	30	4	13.3	0	0
2;1,15	22	4	18.2	0	0
2;2,13	55	16	29.1	1	3.8
2;3,10	45	12	26.6	0	0
2;4,1	62	10	16.1	0	0
2;4,22	54	11	20.4	1	5.0
2;6,16	116	25	21.6	2	3.9
2;9,2	175	80	45.7	10	14.3
2;9,30	115	99	63.4	22	33.9
Total	771	278	36.1	36	10.5

22. See also Wexler, Gavarró and Torrens (2004), Babyonyshev and Marin (2005) for recent discussion on the different omission rates in different Romance languages (Spanish, Catalan, Romanian in particular) in L1 acquisition.

Table 5. The use of complement clitics in comparison with lexical complements and omissions in the Augustin corpus

Age	Comp. Contexts	Omissions	%	Complement clitics	%	lexical complements	%
2;0,2	12	4	33.3	0	0	8	66.6
2;0,23	20	5	25	0	0	15	75
2;1,15	10	4	40	0	0	6	60
2;2,13	19	5	26.3	1	3.8	13	69.9
2;3,10	23	9	39.1	0	0	14	60.9
2;4,1	20	5	25	0	0	15	75
2;4,22	21	4	19.0	1	5.0	16	76
2;6,16	50	10	20	2	3.9	38	76.1
2;9,2	69	10	**14.4**	10	**14.3**	49	**71.3**
2;9,30	65	14	**21.5**	22	**33.9**	29	**44.7**
Total	309	70	22.6	36	11.6	203	65.7

5.2 Complement clitics in relation to other phenomena

Since the delay of complement clitics is predicted to be closely related to the occurrence of root infinitives by several accounts of language development, a brief comment on the data is necessary. Hamann (2003: 108, figure 4) examined the profiles of root infinitive and of complement clitic use in Augustin's production and observed that "complement clitics appear to come in when the use of infinitives begins to decline". Augustin's use of infinitives is practically stable (around 10%) from the age of 2;2 until the end of recording, whereas his use of complement clitics shows a noticeable increase only after the age of 2;6. Hamann (2003) concludes that the evidence is equivocal to a close link between root infinitives and complement clitics.

More evidence against too close a link between these two phenomena comes from the study of SLI (Hamann et al. 2003; Jakubowicz et al. 1998; but see Wexler 2003 for a different view). As mentioned above, the children with SLI in the study of Jakubowicz et al. (1998), did not use infinitives, but showed high rates of complement clitic omission. The same was observed by Hamann et al. (2003) who point out that there is no significant difference in clitic suppliance between their younger and older groups (18% vs. 23%), whereas infinitive use in the older group is extremely rare. Individual cases give more evidence of this fact. Rafaelle, the child from the Geneva corpus who started with 68.4% non-finite forms at 3.10, supplies a complement clitic in only 10% of the relevant cases at the age of 4;8, whereas her infinitive use has declined to 3% at that age. Noelle, at age 6;9, still has 22.5% complement omissions – reminiscent of the overall omission rate in Augustin's production (see table 5) – and produces a clitic only in 11.3% of the cases, though she no longer uses non-finite forms (0.3%) at that age.

These data could be viewed as irrelevant if an infinitive phase did not occur at all in French. However, this is not the case, as has been argued in section 4.2. Moreover, cases like Rafaelle quoted above, who start out with a high infinitive rate which subsequently declines, but who persist in a low use of complement clitics and a high omission rate, cannot easily be explained if the phenomena of clitic omission and infinitive use are derived from a common cause.

Another fact of French acquisition is that determiners (*le* 'the'-masc, sg, and *la* 'the', fem., sg) are acquired quite early – at about the same time, but at an even faster rate as subject clitics (see Jakubowicz et al. 1998; Van der Velde 2003). Hamann (2003) reports that Augustin uses determiners at a rate of 20% in obligatory contexts in the first recording, at the age of 2;4 the rate is as high as 38%, reaches 66.1% at age 2;6 and is at 93.9% and 98% at the recordings at age 2;9,2 and 2;9,30 (see Hamann 2003: 113, 114). Given that complement clitics are also D-heads and share the morphology of determiners, this is somewhat surprising. It can be deduced quite straightforwardly that it cannot be the head structure of the clitic alone that is responsible for the delay, since this structural property is shared by the determiner. The reason must rather be sought in the fact that complement clitics have the double nature discussed in section 2.2 and are impoverished DPs in the sense of Cardinaletti and Starke (2000).

5.3 The developmental profile of the reflexive clitic se

Although this chapter does not emphasize the order of appearance of different complement clitics (see Belletti & Hamann 2004; Hamann et al. 1996), I would still like to single out the reflexive *se* for a closer investigation. Recall that under the classical movement analyses (Belletti 1999; Kayne 1975; Rizzi 1978) of complement clitics, *se* should behave just like accusative clitics. The same follows in accounts that emphasize the head status of complement clitics, a property clearly shared by the reflexive and other complement clitics.

An interesting observation regarding the reflexive is that in spontaneous production, *se* does not seem to appear before other complement clitics. In the Augustin corpus, *le, me* and *y* have been used before *se* appears. *Se* first appears at age 2;9,2 when *te, les* and *en* also make their first appearance (Hamann et al 1996: 323). Jakubowicz and Rigaut (2000) also observe that in the spontaneous productions of the children they analyzed, *se* did not generally appear earlier than accusative clitics.

However, a careful analysis of omissions in spontaneous production reveals that omission rates are often much higher for accusative clitics than for reflexives. Rasetti (2003: 267) reports that among omitted complements, 68.5% are accusative clitics, whereas only 7.4% are reflexives (the rest are lexical complements) in Augustin's speech. The same holds for Louis (59.7% of omitted complements are accusative clitics, whereas only 7.3% are reflexives) and Marie (with 46.8% vs. 15.9%).

Jakubowicz (1989) and Jakubowicz et al. (1996, 1997) were the first to point out this asymmetry in omission rates and also reported on one of the first elicitation

experiments showing that French children supplied reflexives at higher rates than accusative clitics (see also Jakubowicz et al. 1998; Jakubowicz & Rigaut 2000; Pirvulescu 2006). Moreover, when compared with subject and accusative clitics, reflexive clitics seem to occupy an intermediate position. In particular, Jakubowicz (1989) and Jakubowciz et al. (1998) report that subject clitics are produced by typically developing children at a rate of 85% at the age of 2;5 already, whereas reflexive clitics reach a rate of 82% at 3;3, and object clitics reach a similar rate (85%) only at 5;8. Studying the elicited production of 3rd person clitics by 12 French children, a younger group with a mean age of 2;4,10 (MLU 3.0) and an older group with a mean age of 2;5,10 (MLU 4.0), significant differences were observed by Jakubowicz and Rigaut (2000), not only in the production of subject and complement clitics (86% vs. 19% in the younger group and 92% vs. 56% in the older group), but also between object and reflexive clitics (25% reflexives vs. 0% object clitics in the younger and 67% reflexives vs. 21% object clitics in the older group).

Since the 3rd person reflexive has a unique form for masculine and feminine both for singular and plural, it could be hypothesized that this profile is due to these lexical properties. An analysis of omissions abstracts away from these differences of object and reflexive clitics in morphological form and makes a direct comparison possible. Jakubowicz and Rigaut report that their younger group omits subject clitics at a rate of 14%, reflexives at 53% and object clitics at 62%. For the older group they report a striking decrease in omissions of reflexive and object clitics (13% and 9%, respectively). As to the pattern of omissions, it appears that reflexives occupy indeed an intermediate position between subject and object clitics. These authors appeal to two distinct formal properties of these two clitic types in order to obtain that the derivation of object clitics is more complex than that of subject clitics. They argue that subject clitics, analyzed as agreement markers, are obligatory elements in the functional structure of the clause, which is not the case for reflexives. In addition, they present an analysis where reflexive clitics are featurally more specified than pronominal clitics.

The recent study of Chillier et al. (2006) sets out to investigate the developmental patterns of subject, reflexive and object clitics with special attention to omission rates. Their aim is to determine what factor is responsible for the delay of complement clitics. They argue that reflexives should pattern with object clitics only if the head status is responsible for the delay, that they should have an intermediate status if head status interacts with properties of the derivation such as the crossing or nesting of chains, and that they should pattern with subject clitics if the only factor is the properties of the chains (see section 2.2).

Chillier et al. studied 99 French-speaking monolingual children with an age range of 3;5 to 6;5, allowing five groups: the 4-year olds (mean age 4;0), the 4 1/2 year olds (mean age 4;9), the 5 year olds (mean age 5;3), the 5 1/2 year olds (5;9) and the 6 year olds (mean age 6;3). In the elicitation task, photos were used to illustrate one person doing something to or with another person, or only one person acting on him or herself. The verbs used were *wash, wet, brush, wake up, cover* and *measure*. The child was

presented with the photo of, for example, a boy lying in bed and a man tucking him in with a blanket. The experimenter introduced the persons and gave a short description (Here are Daddy and Pierre. It is late, it is time to go to bed, there is a blanket). Then a question was asked by the second experimenter, a puppet: what is Papa doing with Pierre? The expected answer was: *il le couvre* 'he is tucking him in'. This elicits subject and complement clitics at the same time. The tasks balanced the use of different genders and correct object and reflexive answers.

For the analysis, correct use and suppliance of a clitic were distinguished. Subject clitics were produced correctly at a rate of 65.2% by the 4 year olds, and at a rate of 83.2% by the 6 year olds (with intermediate rates of 72.7%, 76.1%, 81.3%, respectively; see table 6). Object clitics were produced correctly at a rate of 45.6% only by the 4 year olds and at a rate of 86.3% by the 6 year olds (for intermediate results see table 6). For reflexives, the study showed an even better performance on correct production than for subject clitics in each age group: 84.3%, 91.3%, 96.5%, 96.6%, and 99.2%, respectively. Since the latter result is probably due to the lack of gender and number marking on reflexives, and since many of the errors on subject clitics were gender errors, another analysis limited to suppliance of a clitic (see table 6) was performed. The authors report that results of logistic regression for clitic suppliance showed significant differences between subject and object clitics. A significant difference was also found between reflexive and object clitics, but not between subject and reflexive clitics. It can be concluded that production rates were similar for subject and reflexive clitics.

In a third step, the authors analyzed omission rates since low clitic suppliance may be either due to omissions or to the production of a lexical DP. Omissions therefore address syntactic issues more directly. Though statistical analysis cannot be performed for omissions, the high rate of object omission (21%) in the youngest group drops to

Table 6. Clitic use (data from Chillier et al. (2006: table 9)

		4 yrs **Mean sd**	**4 1/2 yrs** **Mean sd**	**5 yrs** **Mean sd**	**5 1/2 yrs** **Mean sd**	**6 yrs** **Mean sd**
Subj	Total Suppliance	92.2 20.2	94.1 16.9	99.6 0.9	99.2 2.2	95.0 19.5
	correct	65.2 19.9	72.7 18.2	76.1 8.5	81.3 10.6	83.2 20.0
	Omissions	7.8 20.2	5.9 16.9	0.4 0.9	0.5 1.3	4.6 19.5
Obj.	Total Suppliance	68.5 33.8	88.1 17.5	88.7 14.1	93.9 9.7	90.0 18.4
	correct	45.6 34.9	69.4 21.8	64.5 18.6	79.9 22.1	76.4 23.3
	Omissions	21.0 24.8	8.5 13.7	6.4 7.3	3.8 8.2	2.5 5.8
Refl.	Total Suppliance	85.2 26.0	92.5 18.9	96.9 6.3	98.1 3.6	99.6 1.9
	correct	84.3 26.6	91.3 19.4	96.5 7.0	96.6 7.6	99.2 2.6
	Omissions	8.8 17.0	4.6 10.6	2.2 4.7	0.8 2.5	0.4 1.9

2.5% in the oldest group and contrasts with low omission rates for subject and reflexive clitics. Comparing the figures for the omission of subject and reflexive clitics, the authors conclude that these pattern together and differ from object clitics.

Summarizing these findings, it emerges that in the youngest group, the 'delay' of complement clitics could be corroborated since object clitics were supplied at a lower rate and more often omitted than subject clitics. Reflexive clitics (ranging from 85.2 to 99.6) are more often produced than object clitics (ranging from 68.2 to 90.9) already by the youngest children and pattern with subject clitics in production. The analysis of omissions revealed that object clitics are omitted to 21% by the youngest children, whereas reflexive clitics were only omitted to 8.8% at this age and patterned with subject clitics (7.8%) in the youngest group and also for the older groups. The authors therefore conclude that a single formal property, chain crossing, suffices to account for the profiles of subject, object and reflexive clitics. They claim that greater processing difficulty arises when chains are crossed as in the case of object clitics. In the case of subject and reflexive clitics, where no such crossing occurs, this difficulty is absent.

6. The acquisition of questions

6.1 Fronted wh versus wh-in situ in typical and atypical development

In her study of the development of question formation in the typical child Philippe, Crisma (1992) identified three periods: a first period where Philippe produces only fronted wh-questions, a second period where question use doubles and the first in-situ question appears, and a third period showing the use of fronted wh and wh-in situ with a preference for fronted wh-questions, see table 7a. This result was rather surprising since it showed a preference for a syntactically more complex construction over a simpler one (see Crisma 1992; Hamann 2000, 2006 for discussion). When other children were investigated, a different picture emerged. Hamann (2000), Hulk and Zuckermann (2000), Plunkett (2004), and Plunkett and De Cat (2001) reported a great preference of wh-in situ in the children they studied.

In the analysis of the three children from the Geneva project presented in Hamann (2006), Philippe indeed emerges as the exception, since these children, after a slow start in the production of wh-questions, largely prefer wh-in situ and use fronted wh only sporadically. In order to show development and facilitate comparison with Crisma's analysis, Hamann (2006) grouped the data of three recordings together into a period for these children. Table 7b shows the data for Louis from Hamann (2006: 162). Augustin produces only 3 wh-questions in the time from 2;0 to 2;3, one of which is fronted. From 2;4 until 2;6, he asks 71 wh-questions, but only 3 of them are fronted wh-questions. In the last two recordings, there are 20 wh-questions but only 3 with wh-fronting. For Marie, we also see an early period with few questions (11 wh-questions from 1;8 to 2;1 with 1 fronted wh-question), then she starts asking more

wh-questions with 32 and 31 from 2;1.18 to 2;3.3 and from 2;3 13 to 2;6, respectively, where there are 6 fronted wh-questions in each of these last two periods.

In a next step, following Baranzini (2003), Hamann (2006) considers only the contexts allowing a free choice of question type, specifically excluding *pourquoi* or *quoi* questions because the first occur only in fronted wh-constructions, while the latter occur only in situ in Swiss French. Table 8 shows that the three children from the Geneva project show a huge asymmetry in favor of in situ questions, with Louis and Marie showing a ratio of about 3:1, and Augustin showing an even stronger asymmetry amounting to a ratio of 10:1. Hamann (2006) also points out that with some very rare exceptions, all the fronted wh-questions are non-inverted. The few questions which are produced with fronting and inversion can be assumed to be rote learned or occur late.

Hamann (2006) concludes that children use the most economical question forms in the beginning and acquire the more complex type with fronting (and inversion) only later. This conclusion corroborates and confirms Jakubowicz's (2005) and Strik's (2006) findings.

Table 7a. Occurence of wh- in situ and fronted wh-questions, Philippe

Philippe	% wh- in situ	% fronted wh
2;1.19–2;2.17	0	100 (35)
2;2.26–2;3.21	1.3 (1)	98.7 (78)
2;6,13–2;7.18	40.7 (81)	59.3 (118)

Table 7b. Occurence of wh- in situ and fronted wh-questions

Louis	% wh- in situ	% fronted wh
age		
1;9.26–2;0.8	62.5 (5)	37.5 (3)
2;1.4–2;2.4	84.2 (16)	15.8 (3)
2;2.17–2;3.29	88.6 (31)	11.4 (4)

Table 8. Free choice contexts: (no *pourquoi*, no *quoi*)

Child	Wh- in situ	Fronted Wh
Augustin	90.7 (49/54)	9.3 (5/54)
Louis	73.3 (22/30)	26.7 (8/30)
Marie	76.1 (35/46)	23.9 (11/46)

Table 9. Group means of numbers of in-situ and fronted wh questions produced by the younger and the older SLI children

	wh- in situ mean	**Fronted wh** mean	**Free choice in situ** mean	**Free choice fronted wh** mean
Younger group	33.3	10.1	17.1	4.8
Older group	7.6	3.0	4.4	2.6

6.2 Question formation in children with SLI

The findings with SLI children provide further confirmation (Hamann 2006). The first observation is that there seem to be two types of SLI children, those who only rarely produce a wh-question at all and in some cases never produce a fronted wh-question spontaneously, and those who resemble typically developing children in their rate of wh-question production and in their preference for in situ (see table 9 derived from the numbers given in tables 9 and 10 in Hamann 2006: 169). Three of the children never produce a fronted wh-question if a choice of structure is possible. Note that 4 of the five children in the older group as well as 2 of the six children in the younger group only rarely produce a wh-question. It may therefore be proposed that some of the older children simply avoid a construction they have identified as difficult. The conclusion clearly is that SLI children prefer computationally simpler constructions to more complex ones. The results could also be taken to indicate that even in situ questions are difficult for some children.

6.3 Infinitives and null subjects in declaratives and questions

I have argued elsewhere (Hamann 2000, 2003, 2006) that a detailed investigation of the structure of early questions can provide evidence for or against the two approaches to early child language introduced in sections 3.2 and 3.3. I do not want to repeat the same arguments here, but I would like to present some of the relevant data.

In the analysis of non-finite constructions, bare participles and infinitives are included. It turns out that non-finite constructions are very rare in fronted wh-questions (recall that all of them are non-inverted), see table 10 (Hamann 2006: 165). A more detailed analysis of individual examples allows Hamann (2006) to conclude that infinitives do not occur and bare participles are rare in either fronted wh and in wh-in situ in the speech of the children from the Geneva project.

Table 10. Summary of the occurrence of infinitives and bare participles in declaratives and questions

Aug, Lou, Mar	Type	INF+BP	% (INF+BP)
	declarative	402/2795	14.4
TOT	fronted wh	1/24	4.1
	wh- in situ	1/201	0.5

Table 11. Null subjects in different constructions in Philippe, Augustin, Marie and Louis

	Phil.		Aug.		Marie		Louis	
	fronted	in situ	fronted	in situ	fronted	in situ	fronted	in situ
Null	1	1	3	23	0	5	1	2
overt	230	81	5	62	13	56	9	51

As to null subjects, the focus is on finite null subjects since only finite forms occur in questions. Crisma (1992) first pointed out that null subjects are not observed in Philippe's fronted wh-questions, a fact she used as evidence for a truncation account. In defense of the ATOM approach, it has been argued however (see Philipps 1995), that the predominance of auxiliaries in questions prohibits the occurrence of null subjects because auxiliaries activate T and so a PRO null subject should not be licensed. Since section 4.3 presented evidence that auxiliaries allow null subjects in French, null subjects should be possible in questions unless other structural constraints (as predicted by the truncation account) prohibit them. Table 11 shows the overall occurrence of null subjects in finite constructions in different question types for Philippe, Augustin, Marie and Louis.

In total, we find 31 null subjects in 280 in situ questions, which amounts to 11.1%, while there are 5 fronted null subjects in 262 questions, amounting to 1.9%. For declaratives, the rate of finite null subjects for these four children was about 27%. The lower rate for in situ questions may be due to two factors: the frequent occurrence of copulas in questions as argued by Phillips (1995);[23] or an observation going back to Plunkett (2000) that null subjects vanish faster from questions (in situ questions in her data) than from declaratives. Calculating the average of the whole period of observation therefore obscures the fact that there may be a period where null subjects in in situ questions are as frequent as in declaratives, which is clearly true for Augustin in the recordings from 2;4 to 2;6 where he produces 39.6% null subjects in declaratives and 34.3% null subjects in in situ questions, see Hamann (2006: 166).

23. Augustin's particularly high rate of such null subjects finds its explanation in the fact that he drops *c'* quite frequently, so that *est où* and *est quoi* alternates with *c'est où* and *c'est quoi*?

As to the occurrence of null subjects in different questions types, an asymmetry can be observed although this asymmetry does not appear to be very sharp. Two things may be said about this. First, this may again be due to the fact that null subjects occur with in situ questions in a shorter period than in declaratives, so that averaging over the whole period lowers the figures. Second, as discussed in depth in Hamann (2000, 2006), the occurrence of null subjects in fronted wh seems to be restricted to a specific question type, namely *pourquoi*, which presumably has a different status than other question words (see Ko 2006; Rizzi 1990, 1999; Thornton 2004; Treichler 2006). If the 4 null subjects occurring in *pourquoi* questions can be assimilated to null subjects in in situ constructions, as argued in Hamann (2006), then the asymmetry becomes very sharp indeed, and it can be said that null subjects in fronted wh questions do not occur – with some rare exceptions.[24]

As to the SLI children, results on non-finite verb forms and null subjects occurring in questions are not quite as clearcut as one would wish. The infinitive rate of especially the older children is quite low even in declaratives. Moreover, questions, especially fronted wh-questions, are rarely produced. Reliable figures are therefore hard to obtain. Nevertheless, Hamann (2006) sums up her findings by pointing out that infinitives are rare in the questions of SLI children, that they allow null subjects with in situ questions and that developmentally null subjects disappear faster from questions than from declaratives. However, SLI children also allow null subjects in fronted wh-questions.

6.4 Sketching an account of early question formation

Summing up the results of the spontaneous production of the 3 normally developing French children of the Geneva corpus and the SLI children discussed here, we observe that they prefer the more economical (colloquial) question types in situ and non-inverted fronted wh over the standard French construction with wh-fronting and inversion. In addition, infinitives do not occur and bare participles are rare in all types of questions. As to null subjects, they do not occur in the fronted wh-questions of the typical children, which are practically all non-inverted. They do occur with in situ questions for a short time in the recordings of all three children where they vanish faster than from declaratives. The same patterns have been shown for the SLI children, except that these children also seem to allow null subjects in fronted wh-questions.

Accounts of early syntax thus have to offer an explanation of the absence of infinitives from all question types, the different patterns concerning null subjects found in in situ and fronted wh-questions in typical development and the fact that null subjects occur longer in declaratives than in questions. Ideally, the explanation should also account for the SLI data.

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24. Levow (1995) gives one examples of a null subject in a fronted *où* 'where'-questions, Plunkett and de Cat (2001) report 5 null subjects in fronted wh-questions.

Let us assume that computational complexity plays a role in the acquisition of questions. This straightforwardly explains the strong asymmetry in favor of in situ questions in both normal and SLI populations. This assumption does not imply that children cannot form the more complex constructions if they have no choice. Since Philippe seems to have received little input of in situ questions from his parents (see Hamann 2002), he produced fronted wh-questions. He chooses the less complex non-inverted constructions, however, so that his question patterns do not constitute an exception to the Computational Complexity Hypothesis, but conform to its predictions.

The observation that null subjects first disappear from in situ questions and only later from declaratives immediately brings to mind that in questions, especially in fronted wh-questions, the child has firsthand evidence that this construction involves the CP layer of the clause. Under the assumption of Categorial Uniformity, the CP should be activated in all question types when the child acquires fronted wh-questions at the latest. This assumption thus strongly predicts that null subjects should vanish from in situ questions when fronted wh becomes an option for the child. Null subjects then might still linger in declaratives until these have also been identified as CPs.

In line with this argumentation, a truncation approach suggests itself also for the explanation of null subjects in in situ questions. However, a more articulated CP has to be assumed. If the higher functional structure of a clause does not only contain a Wh-Phrase (or Focus Phrase), but also an Interrogative Phrase (IntP, see Rizzi 2001, and possibly a special Reason Phrase in the order ForceP > IntP > ReasonP > Foc/WhP, as suggested by Shlonsky (in preparation), then truncation can account for the occurrence of null subjects with in situ and *pourquoi* questions. Let us assume that the child truncates down to the WhP in fronted wh and in situ, but not further for interpretative reasons. Then, the specifier of this projection is occupied in fronted wh, so null subjects are excluded. If the child had an adult analysis of wh-in situ, then a non-overt operator should occupy this position and equally exclude null subjects. So an additional assumption is needed, again involving economy as defined by Jakubowicz, stating that the child does not use an operator for marking the question interpretation, but achieves this marking through a silent Q-head in the WhP. Then, an Agree relation can be established for the interpretation of the in situ question and the child analysis is more economical than the adult analysis. In this analysis, a null subject could occur in the specifier of the WhP. In the case of *pourquoi*, the child truncates down to the ReasonP and again uses the Q-head analysis involving Agree, not internal merge. Children would abandon this analysis when fronted wh has been firmly established, because now it is more economical to treat all question types alike.

For SLI children, it can then be surmised that they extend this analysis to fronted wh-questions.[25] This explains the patterns found for the children from the Geneva project.

7. Summary and conclusion

This chapter attempted to provide an overview of some of the most discussed findings in the research on the acquisition of French while evaluating several theories of language development against these specific phenomena.

The first two phenomena I have discussed are the early availability of functional structure and the early setting of two parameters characteristic of French: verb raising and clitic placement. In section 4.1, I reported results from the literature observing that finite verbs as well as subject and complement clitics are always placed correctly, supporting the claim that parameters are set early. On the other hand, results from French also provide evidence for two phenomena of early grammar observed in many languages, namely the omission of subjects and the occurrence of optional infinitives. I argued that French shows a phase of optional infinitives, even if this phase is shorter than in other languages. I showed that null subjects occur with such infinitives, finite verbs, and even with auxiliaries in French. Data from young SLI children confirm these findings, since they display the same patterns, though sometimes to higher magnitudes.

Section 5 presented data on the early availability of subject clitics, the delay of accusative complement clitics, and the developmental similarities of reflexive and subject clitics. It was argued that the omission of complement clitics and the occurrence of infinitives should not be too closely linked, as supported by a comparison of these two phenomena in SLI children. Note that the delay in the acquisition of complement clitics is a characteristic of French language development, and that the even longer developmental delay in SLI children has been called a diagnostic criterion for this syndrome in French.

Finally, I presented data on the acquisition of different questions types. A preference for less complex constructions, namely in situ questions and non-inverted fronted wh, appeared. I also showed that infinitives do not occur at all in questions and that null subjects are restricted to in situ questions. Again, data from SLI children show essentially the same phenomena, except for an occurrence of null subjects in all question types.

These observations about early child language can be used as evidence of properties of the target grammar. The existence of a phase of infinitive use, the difference in the developmental profiles of subject and accusative clitics and the non- occurrence of null subjects in fronted wh-questions all indicate that it is unlikely that French is a prodrop language, as some analyses suggest. In a more direct way, the observations pro-

25. Data from an elicitation experiment conducted by Cronel-Ohayon (2004) with the Geneva SLI children supports this analysis since it showed that SLI children can only rarely repeat an inverted structure. This incapability can be explained if the Q-head is occupied and cannot take the auxiliary. See Cronel-Ohayon (2004) and Hamann (2006).

vide indications as to which theories of early language development are the most promising. It emerged that the Computational Complexity Hypothesis needs to be extended in ways which allow the accommodation of structures which are not part of the target grammar, or allowed only in highly constrained contexts, such as infinitives in declaratives, null subjects and the omission of complement clitics. In fact, only a few additional assumptions are necessary. For the delay of accusative clitics, I suggested that the additional factor of chain crossing should be considered as contributing to complexity (see Chillier et al. 2006). This allows the prediction that subject clitics should be acquired before object clitics and that reflexives seem to pattern with subject clitics. As to infinitives and null subjects, truncation explains the data in a way that can be easily adapted to the complexity measures. It creates structures that are clearly less complex than the adult structures, while adhering to UG possibilities as offered by certain registers of adult grammar. How the Computational Complexity Hypothesis and truncation can be made to complement each other emerges most clearly in the account suggested for the data found in wh-questions, especially the patterns of null subjects. The basic idea – children insert a Q-head and rely on Agree – is owed to the complexity metric, but could not explain the null subject pattern without the truncation option.

The data on the development of French show that the complexity of constructions plays a decisive role for the order of acquisition and the frequency of their occurrence. In building the complexity metric into a truncation account, I have argued that children choose less complex grammatical options in order to alleviate processing load.

8. Directions for future research

An enormous body of data inspired by Clark (1985) has been collected over the last two decades, so while it is time to go for the global picture and define a developmental profile for typically developing French children, refinement is still needed in many areas. As many researchers noted, it is especially difficult to determine from a transcribed corpus whether an infinitive or a past participle has been used or whether the context might not also allow a null clitic in colloquial adult speech. More and new video-taped corpora as well as empirical data would help confirm or disconfirm the trends outlined here. This is especially relevant in the case of clitic omission where decision procedures have been refined recently (see Paradis 2004; Pirvulesku 2006) and new experimental material has been used (see Grüter 2006). Very important in this context is the analysis of the input available to the children. Analyses of new corpora as well as reanalyses of older corpora should therefore focus on, or at least include, a careful study of adult speech used in the corpus or in the environment of the child.

Apart from careful input analyses and theoretical descriptions of colloquial French, there are several areas which have been explored only to a lesser extent and which should be the focus of future research. One of these is the study of the

development of subordination. Labelle (1990) started a discussion on relative clauses and the avoidance of movement by young children (see Guasti & Cardinaletti 2003; Guasti & Shlonsky 1995; Perez-Leroux 1995). Subordination can clearly provide decisive data for the question of the interaction of computational complexity, processing load, frequency of occurrence or avoidance of certain structures in language development. Hamann et al. (2007) presented initial data, but more data on older typically developing children (age range 3 to 8) from spontaneous and elicited production as well as experimental work are clearly needed. Again, a careful investigation of adult speech and the input provided to children should complement research on subordination.

Another area which needs investigation is the acquisition of the different tense forms and their uses. This is especially important as the 'optional infinitive' literature aims to explain the absence of tense in a certain phase so that it should be of equal interest to investigate the order in which tense forms start to be used. There are some interesting hypotheses put forward by Jakubowicz and colleagues which should be pursued in larger studies.

Appendix I

Generative assumptions about syntactic theory

The Principle and Parameters approach is especially suited for the modeling of acquisition and was designed to solve the logical problem of language acquisition. The idea is that Universal Grammar (UG) is innate. It consists of a set of universal principles and parameters distinguishing different languages. It constrains the hypothesis space of the language learner as to possible structures and parameter settings.

One of the principles assumed at the time is that all phrases have the X-bar structure: a **head** and a **complement** constituting the X-bar node, and a **specifier** and the X-bar node constituting the (X)-**Phrase**. Lexical and functional heads project their own phrases. Parameters mostly concern the functional categories and the strength of the functional features present in categories such as tense (T), agreement (Agr), determiner (D), or complementizer (C).

Much discussed parameters are the order of heads and complements which can describe the difference of English and Japanese or of **VO** and **OV** languages. Another parameter concerns the strength of the verbal inflectional features, giving rise to what has been called **V-to-I** or verb raising. Romance languages usually have verb raising because they have strong inflection. Most Romance languages also have the **pro-drop** property, the possibility not to pronounce a pronominal subject. In most Germanic languages, the finite verb occurs in second position in main clauses, a phenomenon known as **V2.** The traditional account for this property assumes the presence of certain features related to tense in the C-head of the complementizer phrase **CP** which attract the finite verb.

For acquisition it is assumed that input of the target language constrained by UG will enable the child to determine the feature strength of the functional categories present in the target language so that parameters can be set.

In the newer generative models, two operations play a central role in derivations: **external** and **internal merge**. **External merge** of two elements is essentially the operation known from categorial grammar where two elements from two different categories are put together and thus constitute an element from a new category. This is the basic structure building operation in minimalist theories.

In all generative models dependencies have been captured by the idea of **movement**. A moved element leaves a "gap" which traditionally has been called a **trace**, but is now treated as a phonologically empty **copy** of the moved element. Given the idea of a copy, it is only a small step to analyze movement as **internal merge**, namely merging an element already present in a structure (internal) to the top node of this structure.

Creating dependencies through movement will always complicate the derivation of a structure, which is why moving an element has to be well motivated. In minimalist terminology, movement is motivated by the **checking** of grammatical **features**. Assume that the verb form *travaillait* 'worked' has been selected from the mental lexicon. In the course of the derivation, it has to be checked that this form corresponds to the intended grammatical features such as "3rd person, singular, *imparfait*", for instance. These features are inserted in the appropriate functional positions reserved for tense information and verbal agreement. In order to check them off against the verb form, it is assumed that the verb moves to these functional positions to check the fit. If the features in the functional positions do not fit the features on the verb form, the derivation crashes. Since the functional layers related to the respective lexical categories are located higher in the structure than the lexical ones, the usual term for this sort of movement is **raising**. Note that languages may differ as to the whether such checking occurs before **Spell-Out** or after Spell-Out. Spell-Out might be considered to roughly correspond to what used to be called Surface Structure. However, it differs from the older concept because it is not a well-defined level. Whether checking occurs before Spell-Out depends on the feature strength. Strong features force movement before Spell-Out.

Another important notion is that dependencies created by movement can be thought of as constituting a **chain** with one or more links. A chain with one link arises when an element is moved once only, the chain is constituted by the moved element and its trace/copy. In many cases, and especially in the case of head movement (as in verb raising), elements move through several positions constrained by locality, type of position and structural properties of chain formation (Rizzi 1990).

Appendix 2

Terms and abbreviations

Agr	agreement, functional category hosting agreement features
Agree	relation proposed in minimalist theory establishing agreement between the features of related elements (in most cases it captures phenomena that used to be treated by covert movement)
AgrP	projection hosting subject-verb agreement
AgrOP	projection hosting object agreement, i.e., accusative case marking
Base insertion	an element is directly inserted into a position, not moved to it in the course of the derivation
Chain	dependency between two elements created by movement or the Agree relation, see appendix 1
Complement	position in the XP, sister of the head, see appendix 1
Copy	phonologically null representation (of the base position) of a moved element,
CP	complementizer phrase. In subordinate clauses, the complementizer occupies the head position of the embedded CP. In questions, the question word occupies the specifier of the CP.
DP, D	determiner phrase, functional layer above nominal phrases
Feature checking	see appendix 1
IP	inflectional phrase hosting verbal inflectional material
NegP	phrase hosting the negative markers *ne…pas* with *pas* analysed as the specifier and *ne* analysed as the head; the surface order of these elements is derived through movement (cliticization of *ne* to the verbal head)
Merge	basic structure building operation, see appendix 1
OV	the base position of the verb and its complement/object is complement+verb, parameter
pro	empty category with pronominal properties, referential
PRO	empty pronominal subject in infinitival constructions
Q-morpheme	morpheme, overt in some languages, silent in others, which marks question force
Specifier	position in the XP, see appendix 1
Spell-Out	point of a derivation where the structure can be fed into the phonological component
Split CP	splitting the complementizer phrase into different phrases with different heads related to question types, focus and topic
Split IP	splitting the inflectional phrase into several different phrases with different functional heads related to verbal morphology

TP	Tense phrase, hosting tense features
UG	Universal Grammar, see appendix 1
VO	the base position of the verb and its complement/object is verb+complement, parameter
V2	the finite verb occurs in the second position in main clauses, parameter
VP-internal subject hypothesis	assumption that all arguments of a verb are base generated inside the VP including the subject. As the subject usually occupies the specifier of the IP, subjects must be moved out of the VP in the course of the derivation.
V-to-I	the finite verb raises to inflection, parameter
Wh-question	constituent question, usually with an interrogative word beginning with the letters wh-

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PART 2

French in applied linguistics

CHAPTER 6

The role and status of the French language in North Africa

Farid Aitsiselmi and Dawn Marley
University of Bradford, University of Surrey

Ce chapitre traite du rôle et du statut de la langue française dans le Maghreb d'aujourd'hui en commençant par un rappel rapide du contexte historique pour essayer d'expliquer les origines et les causes des tensions qui existent dans ces pays en ce qui concerne tout ce qui touche les questions de langue et d'identité. Il apparaît clairement que malgré une politique d'arabisation visant à promouvoir la langue arabe et à réduire le rôle de la langue française ou même à l'éliminer complètement de la région, celle-ci continue à occuper une place prépondérante dans les trois pays maghrébins. Les conclusions que nous avons pu tirer ne peuvent être que des tentatives de simplification d'une situation complexe qui est en constante évolution et qui change au moment même où nous achevons d'écrire ce chapitre.

In this chapter we will examine the role and status of the French language in the Maghreb today, beginning with a brief historical overview to explain the background to this complex issue of language contact. It seems clear that despite an Arabization policy aiming to promote Arabic and reduce the role of French, or even eliminate it completely from the region, the French language continues to play a key role in the three countries of the Maghreb. Any conclusions, however, can only be provisional, as language contact situations are constantly evolving, and even as we complete this chapter new developments are occurring.

1. Introduction

Algeria, Morocco and Tunisia, the former *Afrique du nord française*, now known in French by the Arabic term, *Maghreb*, represent an unusual case within Francophone Africa. The term Maghreb was used in Arabic by Medieval Arab geographers to refer to the region: Morocco was known as *Al-Maghrib al Aqṣa* (The Farthest West), Algeria as *al-Maghrib al Awsat* (The Middle/Centre West) and Tunisia as *al-Maghrib al Adna* (The Nearest West) (Ibn Abd al-Hakam 1922). The term was adopted after Independence

to clearly mark the region's affiliation to the Arab world. In 1989, a new political and economic union known as the *Union du Maghreb Arabe* (Arab Maghreb Union) was created along the lines of the European Union. This entity included Libya and Mauritania, and the five countries together are referred to as *Le Grand Maghreb* (the Great Maghreb). It was supposed to be the precursor for the creation of a North African Common Market (also referred to as Maghreb Economic Space), but it appears to have done little or nothing to achieve this and has no apparent impact on the everyday life of Maghrebians.

After achieving independence from France, all three countries undertook a policy of Arabization, seeking to eradicate French from public life and restore Arabic to its role as national language. Despite this, French continues to play an important role in a number of domains, and its status is far from that of a mere 'foreign language', which is the only official role it retains. The relationship between the Maghreb and the French language is complex, the result of a long and fraught shared history, particularly in the case of Algeria. An Algerian linguist, Rabah Sebaa (1999: 9) claims that "*la langue française occupe en Algérie une situation sans conteste unique au monde*" ('the situation of the French language in Algeria is unquestionably unique in the world').

2. Overview of the language contact situation today

During the colonial era – 1830–1962 for Algeria, 1881–1956 for Tunisia, and 1912–1956 for Morocco– French was the language of power and prestige, but was limited to the elite. The democratisation of education means that more Maghrebians than ever before have learnt French over the last five decades, and vast improvements in mass communications mean that these people are increasingly exposed to French language and culture through a variety of means previously unavailable – satellite television, recorded material (videos, DVDs) and the internet. People in North Africa are aware, as never before, of the language, culture and civilization of France and the rest of the Western world. As Moatassime (2001: 19–20), among others, has noted:

> *Jamais le Maghreb n'a été autant francophonisé que pendant son indépendence, supposée être une période propice à sa (fausse) réarabisation. Mais aussi, jamais le Maghreb, notamment en Algérie, ne s'est autant interrogé sur son identité et son devenir culturel et civilisationnel qu'en ce début du troisième millénaire.*[1]

1. 'French has never been as widely spoken in North Africa as it has been since Independence, a period supposedly conducive to rearabisation. At the same time, however, the countries of North Africa, particularly Algeria, have never paid as much attention to their identity and the future of their culture and civilization as they are now at the beginning of the third millennium'.

Similarly Benrabah (2007b: 203) claims that "Algeria has done more to assist the spread of this language" [our translation] than the colonial authorities did throughout the 132 years of French presence.

However, it is equally true that literacy in Arabic has increased dramatically, and that the same mass technology enables greater exposure to Arabic. Improvements in communications and increased opportunities for travel mean that knowledge of and contact with other Arab countries is much greater than ever before. People in the Maghreb can and do regularly watch Middle Eastern television channels, and are exposed to the language and culture of the Middle East and the Gulf States. New ideas on Arab and Muslim identity can circulate freely, particularly among increasingly educated young people who have no problem understanding the Arabic of these channels.

The indigenous languages of the Maghreb, known to the West as Berber, are also now available on the internet, and cultural production in Berber is gaining a higher profile both in the Maghreb and internationally. Moreover, these languages, which have been marginalised for centuries, have in recent years experienced a dramatic change in fortunes. Once seen as the obsolescent languages of isolated and illiterate communities, these languages, collectively now known as Tamazight, are recognized by both Morocco and Algeria as valid languages for education and as worthy of study.

Another element which modern technology has brought in is, of course, the English language. As in most of the world today, English is increasingly evident in a range of domains in North Africa, adding to the variety of language choices available to people. Access to such linguistic and cultural diversity may be seen as enriching, or as adding to linguistic and cultural insecurity. As Skalli (2000: 33) points out, "the increasing connectivity between global/local experiences has given greater visibility to older anxieties about the purity or authenticity of cultural identity". In the Maghreb, as in other postcolonial countries, questions of cultural identity are a continuing matter of anxiety, and the role of the language and culture of the ex-coloniser is a particularly vexed question.

Algeria, Morocco and Tunisia were an important part of the French Empire in the nineteenth and early twentieth centuries, and despite having gained independence some fifty years ago (1956 for Morocco and Tunisia, 1962 for Algeria), they continue to be closely linked in a number of ways, and remain important members of the international French-speaking community, albeit reluctantly, especially in the case of Algeria. Each country has pursued policies of Arabization, destined to remove the French language from public life and replace it with Arabic, yet French continues to be an important language in many areas of life. The proximity of the Maghreb to Metropolitan France, the extremely high numbers of Maghrebian nationals living in France, and the volume of trade and business between France and the countries of the Maghreb all contribute to the continued impact of the French language and culture on the Maghreb.

To put the current situation into context, and to highlight socio-historical similarities between the three countries, we will give a brief historical overview. We will

focus more closely on Algeria and Morocco, as they share a similar sociolinguistic situation today, with a substantial Tamazight-(Berber) speaking population.

3. Historical background

Little is known about the earliest civilizations of the Maghreb: the Berbers are considered the indigenous peoples, but all that is known about them comes from outside sources, as they produced no written records of their own existence. It appears though that they have lived as tribes in the mountains and plains of North Africa for millennia, maintaining their distinctive language and culture despite numerous invasions and occupations.

The best-documented period prior to the Arab invasion was the era of Roman occupation, which lasted some five hundred years. The Romans saw this fertile region as a useful source of provisions – wheat, olives and wine – rather than as an area to be colonized. Nevertheless, despite the regular revolts from the Berber tribes, Roman culture and religious thought – both pagan and later Christian – flourished in the Maghreb.

The effects of this Christian occupation however were to be wiped out by the Arab armies which introduced Islam in the seventh century. The Arab invasion of the seventh century, which brought Islam to North Africa, may be seen as the defining moment in the history of the region; the processes of Islamicization and Arabization which began at this time have colored everything that has followed, and continue today to provide the basis of Maghrebian identity for the majority of Maghrebians.

By 670, Arab armies had established a capital in North Africa, Kairouan, and by 710, the area – together with Spain – was completely under Arab influence. According to Camps (1983: 12), most of the area was probably converted to Islam within two centuries. Arabization, linguistic and cultural, probably occurred relatively early on in towns, as it became the language of administration and generally of the ruling class, but elsewhere it was a slower process. From the middle of the eleventh century the Arab bedouins of the tribes Beni Hilal and Beni Solaïm occupied the plains, pillaged the towns and disrupted social structures, but at the same time, their presence established the Arabic language and way of life in the Maghreb.

Unlike the Maghreb, Spain did not remain under Islamic influence; by 1492, the Catholic Kings had 'reconquered' Spain for the Church, and then turned their attention to North Africa. The people of Algiers asked the Ottomans to protect them from the Spanish, at which point the history of the Maghreb was divided into two quite separate courses: the Central and Eastern areas – Algeria and Tunisia – came under the influence of the Ottoman Empire, where they would remain for the next three centuries, until the French gained power. Meanwhile, the Western Maghreb, Morocco, despite incursions and some occupations by the Portuguese and Spanish, continued as an independent and increasingly isolated state, until the arrival of the French in the early twentieth century.

Despite this division, Islam acted as a uniting force across the region. The Moroccan historian Laroui (1975: 63–64) summarizes the Ottoman era as one in which the Maghreb, despite the different regimes in place, became in some ways the united region it is today. He notes, however, that it was also united in what it lacked: a strong national army and a sound economy, and it is this common lack, Laroui argues, which explains why all three countries were colonized.

In 1830, the Maghreb as a whole was weak, with internal divisions in each country and there was little resistance to the French invasion. In a matter of weeks, the Ottomans were gone and the French were in control of Algeria. However, the problem of administering the country was one that would take the next half century, and ultimately was never to be resolved. Despite the initial conquest, the French met with resistance to their rule, but by the end of the nineteenth century, "the once relatively prosperous Muslim population of Algeria had been rendered second-class and dispossessed" (Stone 1997: 32). The French historian Peyrouton (1966: 201) was to write that by the turn of the twentieth century France saw Algeria as "*sa fille d'élection, le reflet de son propre génie*" ('her chosen daughter, reflecting her own genius').

The French did not invade Tunisia and Morocco, setting up protectorates instead – in 1881 in Tunisia and 1912 in Morocco – helping weak rulers to crush rebellion and modernize their countries, and effectively running them until their independence in 1956. Relations between the French and these two 'protected' nations were far more cordial than between France and Algeria, and independence was achieved without bloodshed, although nationalist movements had a long struggle before achieving their goals. In Algeria, however, the war of independence began with the insurrection of November 1954, under a single National Liberation Front (FLN) and did not end until 1962.

The history of independent Algeria can be divided into three periods. The first corresponds to the presidency of Ahmed Ben Bella (1962–1965) who was overthrown in a bloodless military coup by Houari Boumediene (1965–1978). During his thirteen years in power, Boumediene created a strong centralized government, based on a one-party system (FLN – *Front de Libération Nationale*). When he died in 1978, rapid progress had also been achieved in professional training, making possible the Algerianisation of managerial personnel and the Arabization of the education system.

The second period, from 1979 to 1992, corresponds to the presidency of Chadli Bendjedid, who began a policy of liberalisation of the regime. This period saw the emergence of numerous political associations supported by a flourishing press as well as independent publishing houses. It also witnessed the emergence of Islamism as an ideological alternative to the single party system. During this era, there were also two violent riots. The first erupted in March 1980 in the Berber region of Kabylia against Arabization and in favor of recognition of Berber as a national language. The second occurred in October 1988 in Algiers and other main cities, in support of democracy, leaving between 200 and 500 dead, and leading to 355 arrests (Stone 1997: 64). These events mark a turning point in Algerian political life, as they signal the "beginning of the Islamist bid for power" (Heristchi 2004: 116). The first free elections in December

1991 produced a landslide victory for the FIS (*Front islamique du salut* 'Islamic Salvation Front'), which in turn provoked the cancellation of the elections by the army, and the resignation of the president.

The third period, from 1992 to the present, corresponds to the period of terror unleashed by this breakdown in the democratic process and the various attempts at 'national reconciliation'. It revealed a society filled with rivalries and contradictions: "Islamist/ secularist, arabophone/ francophone, civilian/ army, Berber/ Arab, socialist/ liberal, patriarchal men/ 'liberated' women" (Naylor 2000: 193). Roberts (2003: 20) identifies five main currents of opinion: "the left, the Arabists, the Berberists, the feminists and the Islamists". This political instability seems to have reached a relative end with the election of Bouteflika in 1999 and his re-election in 2004.

In some ways, Tunisia is the country that has most successfully made the transition from protectorate to fully-fledged nation state. Politically, it has been stable, with Habib Bourguiba staying in power until his prime minister, Zine el-Abidine Ben Ali, took over in *a 'coup d'état médical'* in 1987, declaring that Bourguiba was no longer fit to govern, on the grounds of senility. Bourguiba was committed to transforming Tunisia into a modern country, and had a very secular outlook, firmly opposed to Islamic fundamentalism. He introduced many reforms, particularly in areas such as women's emancipation, making Tunisia one of the most secular of Muslim countries. Ben Ali also takes a firm line with fundamentalists, and is seen as a modernizer.

However, he too has been criticized for his authoritarian style, and the 99.9% results in elections. Tunisia is generally better economically developed than the other two countries and also has a higher standard of living – Tunisia was placed 87th in the United Nations' HDI (Human Development Index) report of 2007, compared to Algeria and Morocco, which came in 102nd and 123rd position respectively (http://hdr.undp.org/hdr2006/statistics/). Tunisia is now a predominantly urban nation, with an increasingly well educated population.

Like Tunisia, Morocco has been politically stable for most of the past half century. The first king of the independent state, Mohammed V, died in 1961, to be succeeded by his son, Hassan II. After surviving military coups in the 1970s, Hassan II ruled with a firm hand, and was criticized by human rights groups for his suppression of opposition within Morocco. In the final years of his reign, he did allow parliamentary democracy to develop, and promised greater freedoms. At his death in 1999, his son Mohammed VI took over, pledging to move the country towards greater political pluralism and economic liberalism.

Mohammed VI has not been totally successful in his attempts to bring about greater transparency in government and greater justice in society, but in many respects the country has modernized during his reign. One significant issue which was finally addressed in 2003 was the long awaited reform of the *Moudawana*, the family code which kept women in a subservient position. Moroccan women now enjoy far greater rights than ever before, although they are still no better off than Tunisian women. Since 2000, educational reform has seen rapid improvement in numbers of children in

school, but illiteracy rates remain high, and the gulf between rich and poor, as well as cities and rural areas, remains wide.

Today all three countries find themselves facing difficult cultural issues: despite having opted for Arabization and closer identification with the Arab world, some people in the region are more likely to aspire to adopt a European lifestyle; Morocco and Tunisia have been trying for years to join the European Union. In recent years, the issue of Islamic fundamentalism has become more acute, and the tensions which arise from trying to reconcile this tendency with the modernising tendencies are great. The majority Muslim population and the professed Islamic nature of the state have been no protection from terrorist attacks, which occurred again in Morocco and Algeria in April 2007.

We now move on to an overview of the language contact situation which has emerged over the centuries in the Maghreb, as different languages have found themselves not only in contact, but also in competition.

4. Language competition

The indigenous peoples of the Maghreb, the Berbers, resisted shifting to Latin or the language of any other invader until the seventh century, when the Arabs introduced Arabic, the language of Divine revelation. Although the Berbers did not rapidly shift to Arabic – even today there are still non-Arabic speaking Berbers – a diglossic situation evolved in which Arabic was the H language for religious, administrative and other formal functions. Over the course of several centuries, bilingualism also became the norm in towns, and much later in rural areas, as Arab settlers mixed with the indigenous population. Turkish, on the other hand, despite centuries of Ottoman rule in Algeria and Tunisia, seems to have had as little linguistic influence as Latin. This can be partly explained by the fact that there was never a large Turkish population in the region, nor any attempt to integrate it culturally. Moreover, the Turks, as Muslims themselves, would revere Arabic, and would not seek to undermine it. The French, on the other hand, did seek to assimilate Algeria culturally and linguistically, and to create a Francophone elite in the other two countries. The result of these policies can be described as a situation of triglossia, which still exists today, where French, like Standard Arabic, is the H language. Although French is rarely spoken as a mother tongue, its acquisition is regarded as valuable, and its use is widespread in various domains. Two other European languages also need to be taken into account, Spanish in Morocco, where it was once widely spoken, and English, which across the region is offering increasing competition to French. We will now look at each of these languages in turn.

The term 'Berber' actually covers a continuum of related but not always mutually comprehensible languages, belonging to the Hamito-Semitic family, which is distantly related to Arabic and other Semitic languages. Berbers themselves use another term to refer to the Berber community, *Imazighen* (singular, *Amazigh*), with the derivative

Tamazight for the language, to encompass all varieties, not just the one in Morocco (Middle Atlas) traditionally called Tamazight. This term is used in the modern Berber cultural movement which attempts to unite the different tribes and varieties, in their struggle for cultural recognition and survival. *Imazighen* live not only in the Maghreb but across a much wider area of North-West Africa, extending across Libya and down into the Sahara.

These languages, often referred to as 'dialects' or even 'patois', are still widely used in Algeria and Morocco, perhaps by as much as 40% of the population (Boukous 1995: 10). In Tunisia, however, probably less than 1% of the population is Berber-speaking. Estimates differ wildly, however, and in the absence of census data on the subject, it is impossible to know true numbers.

There is little documentary evidence of the presence of these languages in the Maghreb, since the script, Tifinagh, which was used in other parts of the Tamazight zone, has apparently never been known there. In the Maghreb, these languages have survived almost exclusively in spoken form, their cultural history being handed down orally over the centuries. This lack of a written form contributed to the development of a diglossic situation, as it meant that Arabic became the obvious language of administration and education, and therefore the H language, whilst Berber languages were relegated to the L domains.

This example of diglossia came into existence alongside another, 'purer' form, indeed, one of Ferguson's original (1959) examples, involving two varieties of Arabic: dialectal and classical. It must be mentioned that the term 'Arabic' refers to a continuum of language ranging from the Classical language of the Koran, through 'Modern Standard Arabic' to regional and national dialects which are not all mutually comprehensible. All these varieties are related, but there is a widespread belief among Arabic-speakers that only 'classical' Arabic, the language of the Koran, and the modern written form which is directly related to it, can be considered 'real' Arabic. The dialects which people speak, and which therefore change with time to reflect changes in society and influences from other societies and languages, are regarded as deformations of the 'true' language, and thus inherently inferior. However, as Mouhssine (1995: 52) points out, if the 'classical' language has succeeded in remaining 'pure', or untouched by change over the centuries, it is simply because the 'dialects' have changed, in order to cope with the realities of daily life.

A diglossic situation has thus arisen because the written language, used for religious purposes and, to a lesser extent, for education and administration, has remained relatively unchanged, whilst the dialects, widely used for everyday purposes, have evolved very differently. For centuries now, dialectal Arabic has functioned as an L language, being used for all types of speech in everyday life, but having no written form; classical Arabic holds all the H functions – religion, administration, education and media. The dialects are acquired as mother tongues, whilst the classical language is only acquired via schools and is only used in its written form, or in a liturgical function.

In addition to these two forms of diglossia, Tamazight-Arabic bilingualism inevitably developed across the region, as Arabs and Berbers interacted, traded, intermarried and lived together. Due to the higher prestige of Arabic, there has been a tendency to shift to Arabic, but bilingualism persists, and although there may not be many monolingual Tamazight speakers any more, there are still large numbers who are bilingual.

Despite the prestige and practical value of Arabic, European languages have become important in the Maghreb since the nineteenth century, notably Spanish and French. Spanish has a longstanding relationship with the Maghreb, and Spain tried to occupy parts of Morocco from the fifteenth century onwards. Spanish only really had a significant impact on Morocco, and only in the North, during the late nineteenth century and the first half of the twentieth century. There was considerable Spanish immigration to both Morocco and Algeria in the 1830s and 1840s, as a result of a long lasting drought in southeastern Spain, and the political upheavals of the nineteenth century (Sayahi 2004: 38). Today, however, only two Spanish enclaves remain, Ceuta and Melilla, on the Mediterranean coast of Morocco, and the Spanish language is generally in decline, although the modernization of Spain since the end of the Franco era, and its geographical proximity make it very attractive to Moroccans wishing to emigrate. This makes Spanish an attractive and useful language to people in the North of Morocco, if not elsewhere in the region.

French, on the other hand, has had a deep influence across the region, even if there has only been a French presence since 1830. The French belief in the *mission civilisatrice* 'civilizing mission' of their language led to a desire to create an elite who would think and act like them, whilst keeping the mass of the population illiterate.

The vast majority of the population in all three countries remained illiterate, since this suited the French and the local elites, but for those who aspired to power, French replaced Arabic. They thus turned an already diglossic situation into a triglossic one for a small percentage of the population for which French became a new H language. It could not supplant Arabic in terms of religious prestige, but it quickly became the H language for the administration, education and large areas of the economy and business. The rapid success of French was partly a simple case of French being the language of the most powerful group in society, but it was helped by the declining state of existing infrastructures, and the stagnant nature of standard Arabic.

The economy and the political system, as noted earlier, were weak, and indeed this had been the justification for French intervention in Tunisia and Morocco. The French therefore imposed their system and operated in their language. In Algeria, they simply took over from the previous colonizers and again imposed their own system and language.

The education system was also in decline, although in Algeria the literacy rate among men was estimated at 40–50% of the population (Wardhaugh 1987: 186). As part of their policy of assimilation and their administrative tradition of standardization, the French destroyed the existing education system in Algeria and imposed their own, in which French was the sole medium of instruction. The majority of the Algerian

population refused to send their children to French schools, for fear that it would not only lead their children to adopt French culture but, worse still, to adopt Christianity (Benrabah 1999: 49). Their fears were confirmed by the important role played in education by the Jesuit missionaries (*Pères Blancs* and *Sœurs Blanches*). Although this attitude was to change later, particularly after the Second World War, when many Algerians began to recognize the value of knowing the language of the colonizer and to demand better education in French, by the end of the colonial era, scarcely 15% of the population knew French.

In Tunisia and Morocco, different techniques were employed and the cultural trauma was far less severe than that experienced in Algeria. In both countries, the teaching of French predates the establishment of the Protectorate, where French schools were seen as "*un moyen de pénétration et d'assistance, un organe d'apprivoisement et de rapprochement*" ('a way of establishing a presence, a tool for 'taming' people and bringing them closer') (the words of Lyautey in 1916, quoted by G.Hardy, En hommage au Maréchal Lyautey, in "Le Maréchal Lyautey et l'enseignement", L'Afrique Française, Août 1934: 464, cited in Seux 1997:98). In Tunisia, the bilingual system was modelled on the *Collège al-Sadiki*, which produced the Westernized middle class nationalists represented by Bourguiba. In both countries, on the eve of Independence, only about 10% of the indigenous population was being educated. This meant that the elite, who were in power, tended to be bilingual in French and Arabic, and thus French was seen as a distinct asset in post-colonial society.

Although we have been using the generic term 'French' to refer to the colonial language, it should not be assumed that French is widely spoken with a high degree of proficiency. Sociolinguists such as Derradji (in Queffélec et al. 2002) and Benzakour (2004, 2007) refer to several levels of French in the Maghreb, using Bickerton's (1981) concept of a continuum. Thus there is the acrolect, or standard French, at one end of the continuum, and the basilect, or least prestigious variety, at the other. The acrolect is used in formal situation by the elite and more generally by people with a high degree of education. The basilect is the style of French used by those Benzakour calls the "*petit peuple*" – people with a low level of education, who have learnt French informally through contact with French speakers, for example in their roles as domestic staff, unofficial tour guides and so on (Benzakour 2007: 52). Between these two poles, there is an intermediate variety – or several varieties – known as the mesolect. Benzakour sees this variety as the most widespread in Morocco at least, describing it as the variety which has been adopted by Moroccans as their own: it borrows heavily from local languages, uses neologisms and, whilst it lacks the prestige of Standard French, it is valuable as a marker of identity, as it is essentially 'Moroccan French'.

5. Language planning in the postcolonial Maghreb

Language planning in the Maghreb is complicated by a range of ambivalent attitudes towards both French and Arabic. Boukous (1999: 61) summarizes the situation in Morocco as follows:

> *bien que l'arabisation constitue le fondement de la PL [politique linguistique], un compromis pragmatique est établi entre la francophonie et l'arabisation, c'est-à-dire entre les séquelles linguistiques et culturelles de la période coloniale et la volonté d'indépendance culturelle et linguistique qui caractérise la période postcoloniale. Cette situation reflète les ambivalences d'une PL qui tergiverse entre les pesanteurs de l'authenticité et les aspirations à la modernité, ce en quoi elle est plus symbolique et idéologique que rationnelle et efficiente.*[2]

Arabization was seen as the cultural counterpart to political independence, and therefore the governments of the newly independent states took urgent measures to replace French with Arabic as the language of education, administration and public life in general. At first glance, this would appear to be a logical language planning initiative, assured of success: Arabic had been the H language for centuries, and the mass of the population spoke a variety of Arabic. However, there are a number of factors which go some way towards explaining why it has not fully succeeded. They can be summarized as follows: the Arabic imposed as the new official language – MSA – is not the mother tongue of any group in society, even the ruling class; there was no 'communication problem' to be solved, as the majority of the population speaks dialectal Arabic; the motivation to discard French was weak, as French was perceived as useful in gaining access to a wide range of material in the modern world. Moreover, French is generally perceived as a modern language, whereas Arabic is not, and in fact is habitually associated with tradition and the pre-colonial past.

Finally, there is one major factor which cannot be ignored in the modern world: media and communications. Although all three states use their own television channels to promote their linguistic policy, they no longer control the media. Satellite television, improved telecommunications and the rapid growth of the Internet mean that even the poorest Maghrebians are regularly exposed to other languages and viewpoints from outside the Maghreb. This improvement in communications has helped the Amazigh Cultural Movement, and thus slowed down the disappearance of these languages; it has also given greater incentives to learn French and, increasingly, English, in order to access the materials available in these languages.

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2. Although the language policy is based on Arabization, there is a pragmatic compromise between the use of French and Arabization, that is to say between the linguistic and cultural consequences of the colonial era and the desire for cultural and linguistic independence typical of the postcolonial era. This situation reflects the ambivalence of a language policy which hesitates between the weight of 'authenticity' and aspirations to modernity, which makes it more symbolic and ideological than rational and efficient.

In wilful ignorance of many of these factors, the newly independent governments of the Maghreb pursued a policy of Arabization. Before looking at how they implemented the policy, we will look briefly at the ideology behind it.

5.1 The ideology of Arabization

Since the seventh century, the countries of the Maghreb have been Muslim, and the restitution of Arabic was seen a means of asserting their Arab-Islamic nature. Classical (Koranic) Arabic had been an important symbol for all the nationalist movements prior to independence, and it was widely felt that Arabic was the most appropriate official language of an Arab-Islamic state. Arabization was seen as the best way of restoring the 'authentic' identity of nations which had been 'depersonalized' by colonialism, and as a uniting force within each state. The countries of the Maghreb have, for over four decades, been trying to achieve national unity via linguistic unity, willfully ignoring the fact that such unity is not 'natural' and that the 'authenticity' ascribed to the national language has never been the only element in national identity. This is particularly the case in Algeria and Morocco, where large sections of the population had never been Arabic speakers at all, and nowhere has the Arabic of Arabization ever been a mother tongue.

Despite having no native speakers, Classical Arabic has proved to be "*un élément indispensable d'une construction nationale*" ('an indispensable tool for nation building') (Grandguillaume 1983: 34), largely because of the high status it enjoys in an overwhelmingly Muslim society. It does act as a unifying force because of its symbolic status as the language of divine revelation. It also symbolizes self-affirmation against (non-Muslim) foreigners, particularly the French, and national pride, since it is seen, perhaps oddly, as the 'natural' language of the Maghreb.

Some claim that there is another, largely unspoken, aspect to this ideology: the eventual elimination of those languages which might more reasonably be called 'natural', that is Tamazight and dialectal Arabic. This aspect of Arabization has been raised in recent years by linguists such as Boukous (1999) and Benrabah (1999), who accuse the governments of Morocco and Algeria respectively of seeking to eliminate Tamazight and even, in the long term, dialectal Arabic. They lament the fact that their governments should deny the reality of cultural and linguistic diversity which is the great richness of the Maghreb, preferring instead to promote what they see as a dead language, using it as a symbol of past greatness and of a past 'authentic' identity.

These same critics also suggest that the elites have promoted Arabization, cynically, as a means of maintaining power, knowing that French would continue to be necessary to social and economic success, and thus continuing to educate their own children bilingually (Boukous 1999: 53). Benrabah (1999: 160) goes even further in his criticism of Arabization in Algeria, claiming that it has had the same objective as Orwell's 'Newspeak': to deprive the Algerian people of their language and to impose a

language in which they would be unable to express themselves or even to think in a critical way.

Despite the indifferent success of this policy, all indicators suggest that the vast majority of Maghrebians believe that Arabization is ideologically desirable, and support it in theory, even if they recognize the practical difficulties of implementing it. Nevertheless, Benrabah (2007b: 207) suggests that "Algeria's elites have failed to promote Literary Arabic as an attractive 'product' to which a high 'value' would be assigned on the Algerian 'linguistic market'". In other words, Algerians are not convinced that using Classical Arabic would provide them with potential benefits such as social mobility or better of socio-economic life. As we will now see, the practice of Arabization continues to be problematic.

5.2 The practice of Arabization

Although all three countries decided to implement Arabization immediately, implementation of the policy has been sporadic everywhere, due to a variety of internal and external factors. The major areas affected by Arabization are the education system, the administration and the environment, this last being a rather vast area that could equally well be called 'public life'. It is the first area, education, which has received the most attention, as it is relatively easy to pass laws and implement them in this area. Even in this domain, however, Arabization has not always proceeded smoothly.

In Algeria, the first step towards Arabization was the introduction, in 1962, of seven hours a week of Arabic teaching in primary schools. This was increased to 10 in 1964 when it was also decided that the first year of primary education should be entirely in Arabic. This proved difficult to implement due to the acute lack of adequate teachers of Arabic. Any Algerian with a basic knowledge of Arabic could be called a *moniteur* ('instructor') and allowed to teach in schools, but even so the government was forced to recruit a thousand Egyptian teachers in order to achieve its aims. Although Ben Bella declared that Arabization did not mean Islamicization, in 1963 Islam was decreed the state religion, and his famous declaration "*Nous sommes Arabes*" ('we are Arabs') showed clearly that for him Algeria's identity would be firmly, and exclusively, bound up with its Arab and Muslim dimensions (Benrabah 1999: 79).

In 1965, Houari Boumediène seized power and began to implement much wider-ranging measures to promote Arabization. His clear aim was to eradicate French and replace it with Koranic Arabic. His Education Minister, Ahmed Taleb Ibrahimi, saw the Arabization of the education system as the way to:

> *anéantir ce mélange d'éléments de cultures disparates, et souvent contradictoires, héritées des époques de décadence et de la période coloniale, de lui substituer une*

> *culture nationale unifiée, liée intimement à notre passé et à notre civilisation arabo-islamique* (Taleb Ibrahimi, cited in Benrabah 1999: 95).[3]

Over the next two decades the school system was Arabized in fits and starts, and the last bilingual *baccalauréat* was organized in 1988. Despite this, the debate over the use of French in higher education is not yet over in Algeria.

Arabization in Tunisia has tended to be a less emotive affair, partly because Tunisia never lost its status as a nation, which meant that Tunisians did not feel quite the same need as Algerians to find their own authentic identity. It was also in large part due to Habib Bourguiba, the first president of independent Tunisia, who was himself bilingual and a known francophile, being one of the founding fathers of the modern francophone movement. However, he too was very much in favor of Arabization, as he stated in an early speech to the elite Collège Es-Sadiqi (where he, like most of the elite of his generation, had received a bilingual education):

> *L'enseignement dans les écoles secondaires sera orienté vers l'arabisation et l'emploi de la langue arabe, de sorte que celle-ci soit la langue d'enseignement de toutes les matières, sauf si la nécessité et les circonstances imposent – provisoirement – l'emploi de la langue française pour tirer profit des possibilités qui s'offrent à nous, en attendant de préparer les écoles normales et les cadres nécessaires pour l'enseignement en langue arabe de toutes les matières.* (cited in Grandguillaume 1983: 63)

As in Algeria, the Arabization of the education system has been fitful, and the whole process has been marked by ongoing debates between the proponents of total Arabization, and those in favor of bilingual education. The Arabization of the school system was completed by the end of the 1980s. This seems to have coincided with, or contributed to, a renewed interest in, and desire for, the French language. Although Tunisia is officially Arabized, unofficially it is very definitely bilingual, and continues to see itself as a key player in the francophone world. Tunisia continues to see, at an official level, the benefits of maintaining linguistic and cultural links with France.

In Morocco too, the Arabization of the education system and other areas has been marked by frequent hesitations and compromises, with the result that today there is still a *de facto* bilingualism in many theoretically arabized areas. Having given Arabic official status, the government proceeded to create a legislative framework to support this status. However, the numerous decisions to implement Arabization at various levels have almost invariably been followed by decisions to continue to use Arabic-French bilingualism.

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3. 'Teaching in secondary schools will be geared towards Arabization and the use of Arabic, so that this language can be the medium of instruction for all subjects, apart from when needs and circumstances dictate – temporarily – the use of French in order to take advantage of possibilities available, whilst waiting for teacher training institutes and the necessary personnel to enable Arabic to be used as the language of instruction for all subjects'.

There have always been two tendencies in the application of language policy: the desire for a rapid Arabization, favored by the Istiqlal Party, and a preference for maintaining French in science subjects and moving more cautiously. In 1978, for example, before a parliamentary commission, the king declared: "*Nous sommes pour l'arabisation. Mais si elle est un devoir, le bilinguisme est une nécessité*", 'we are in favor of Arabization. However, if Arabization is a duty, bilingualism is a necessity' (Quoted in Mouhssine 1995: 49); and a decade later was quoted in a national newspaper (*L'Opinion*, 1988) as saying:

> *Je considère que ceux qui ne cessent d'appeler à l'arabisation ne sont pas encore libérés car leur esprit est encore bourré d'infériorité [...] Le fait que je parle la langue française – et j'aurais aimé parler d'autres langues – ne signifie pas que je suis encore sous le Protectorat des Français.*[4]

In addition to the legislative framework, a number of organizations were set up to assist in the implementation of language policy, and numerous *ad hoc* commissions were created within the Ministry of Education to deal with the pedagogic implications of Arabization. The result of all this activity is that by 1990, primary and secondary education were fully Arabized, but science and technology were still taught in French at the university level. In administration, technical departments still functioned in French, whilst legal, social and cultural departments used Arabic as the working language.

Nevertheless, the language issue did not go away, and in the *Charte nationale d'éducation et de formation* ('National Charter for education and training'), the document setting out the framework for a decade of educational reform, the language issue is addressed among the *fondements constants* ('foundations') on the first page. The language policy set out in this document stresses the importance of Arabic as the national language, but also acknowledges the need to use 'other' languages where necessary, particularly in science and technology. Whilst the *Charte* does not advocate a 'francisation' of the system, it does effectively acknowledge that French may be a more useful tool for the teaching of science and technology. Clearly to renounce the Arabization of science teaching at this stage would be unthinkable; the charter therefore emphasizes that over the next ten years Arabic will become a suitable language for the teaching of science, and recognizes that in the meantime another language, logically French, is better suited to the task. It thus succeeds in remaining true to the principle of Arabization, whilst acknowledging that for the immediate future, bilingualism is a necessity.

To conclude this brief overview of Arabization, these words by Cheddadi, referring to Morocco, could be applied to the whole of the Maghreb:

> *Le souci identitaire imposa le choix de l'arabe comme langue nationale. Par chance, ce choix est sans aucun doute le meilleur possible. […] Mais tout d'abord, il n'allait nullement de soi. Il fallait le justifier clairement par rapport aux autres langues*

4. 'I consider that those who are constantly calling for Arabization are not yet independent, because they are still suffering from an inferiority complex […] the fact that I speak French – and I wish I could speak other languages – does not mean I am still under the French Protectorate'.

> *parlées au [Maghreb] et définir le statut de celles-ci. Ensuite, sa mise en œuvre posait d'énormes problèmes qu'il fallait exposer aussi clairement et exhaustivement que possible. Enfin, il fallait déterminer un plan de développement et dégager les moyens humains et financiers nécessaires à sa réalisation. Malheureusement, la plupart de ces questions furent éludées ou traitées superficiellement et sans esprit de suite.* (Cheddadi 2003: 93–94)[5]

Standard Arabic in a sense was the best, if not the only, choice of national language. However, the way in which this language policy has been applied has clearly not been satisfactory in any of the countries. As in all multilingual settings, opting for one national and official language is bound to be problematic, and it would appear that the governments of the Maghreb did not foresee any of the problems, and have been unable to cope with them. Thus after half a century, the national language question is fraught with problems, practical and ideological, most of which show no signs of abating in the immediate future. As a result, the French language, which governments had expected to eradicate in Maghrebian public life, continues to have a very particular role and status in the post-colonial Maghreb, as we shall now see.

6. The current role and status of French

Although it has lost the status it had during the colonial era, French has gained massively in numbers of speakers, since education in the postcolonial age is far more widespread, and French has remained an important element of the education system across the Maghreb. Despite half a century of Arabization, the French language retains a strong physical presence in the region. French appears, together with Arabic, on street names in town centers, and directions signs both in towns and on major roads outside towns. Many shops and cafes, banks and other businesses have their signs written in both French and Arabic, as do hospitals, schools and local and national government buildings. Official documents such as bills for utilities and taxes are bilingual, as are doctors' prescriptions and most medicines, postage stamps, coins and bank notes. French can be heard on radio and television, even on the official government channels, and French language publications are as common as Arabic in bookshops and newspaper kiosks. In Algeria, more than half the books published by the various

5. 'The identity issue meant that Arabic was the only option as national language. As it happened, this choice is undoubtedly the best possible […] However, this was not a foregone conclusion. This choice had to be justified and the other languages spoken in the Maghreb had to have their status defined too. Moreover, putting this choice into practice was fraught with problems, which needed to be clearly and comprehensively recognized and dealt with. Furthermore, a proper plan should have been thought out and the means to carry it out, both financial and in terms of human resources, should have been made available. Unfortunately most of these issues were evaded or were treated superficially without being adequately thought through'.

private and public publishers are written in French (Kadi 2004, quoted in Benrabah 2007b: 209). Moreover, as memories of the colonial era fade, attitudes towards French and its use are also changing, as demonstrated by the fact that in Algeria, President Bouteflika and Prime Minister Ouyahia recently delivered official speeches and press conferences in French (*Le Monde*, 18 April 2005: 6)

In the early days after Independence there were three major schools of thought regarding the role of French in Morocco (Benzakour, Gaade & Queffélec 2000: 59): the technocratic modernist idea that maintaining French was essential for Morocco's economic, social and cultural development; the traditionalist, Arab-Islamic viewpoint, espoused by Istiqlal, that maintaining French would 'denationalize' the country; the 'anthropological' idea that a balance should be sought, with French remaining as primary language in some areas, and Arabic taking over in others. As time has moved on, and Arabization has occurred, these views have developed. Most notably the pro-Arabization stance has moved closer to the 'anthropological' idea, accepting that the presence of French in some domains does not threaten the primordial position of Arabic.

These three tendencies can be identified in Algeria too. The 'bilingual group' believes that Arabization is a slow, progressive process during which Arabic-French bilingualism must be maintained in order to gain access to modern technology. The 'multilingual group' calls for the recognition and promotion on an equal footing of all the languages used by Algerians, that is, Algerian Arabic, Tamazight and French (Benrabah 1999: 347). The third tendency is a 'total Arabization group' which stresses that the major priority of the country is to re-establish Arabic, the sole national and official language, as the expression of the Arabic and Islamic identity of the Algerian people (Assous 1985 :123; Mansouri 1991: 35).

In the early twenty-first century, with the Arabization of education and administration largely completed, French is not resented as the language of colonial oppression, but seen by many, if not most, as an asset. French remains essentially an asset of the elites, rather than the majority, but even so "*il reste valorisé dans l'imaginaire marocain et l'engouement qu'il suscite trouve sa source première dans les enjeux qu'il représente*"[6] (Benzakour et al. 2000: 79). In Algeria, an education in French is seen as an *atout précieux* ('valuable asset') by the parents who pay for their children to attend the three hundred private schools which offer this (*Le Monde* April 18, 2005: 6).

Numerous studies over the last quarter of a century have indicated that French continues to be viewed very favorably by Moroccans, regardless of their own ability in this language. In his study of Arabic-French bilinguals in Morocco over 20 years ago, Bentahila (1983: 160) made the following comment:

> Moroccan bilinguals consider their knowledge of French to be a considerable asset, which offers them greater knowledge, wider experience, access to the Western

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6. 'It continues to be highly valued by Moroccans, and the passion it arouses can be explained primarily by the stakes that it represents'.

> world and to an endless supply of material which they would not otherwise be able to reach.

In 2007, with the technological advances which have brought satellite television and the internet into the most remote corners of the Maghreb, this is more true than ever, and it is not just the bilingually educated elite who see the advantages of knowing French.

The *enjeux* ('stakes') represented by French are both concrete and ideological, with the result that Maghrebians may wish to learn French for both 'instrumental' and 'integrative' motives. On a practical level, French is viewed as the key to social and economic success, whether at home or abroad. There is a clearly perceived link between speaking French and achieving success: people in power, be it in politics, the army, business, banking, public and private companies, always have a good command of French. Similarly, anyone engaged in scientific research, and indeed many other branches of university research, uses French, as do the liberal professions and most middle ranking executives. In short, French is the key to the modern job market even in the Maghreb, and obviously is essential for anyone hoping to find work outside the Maghreb, since traditionally 'abroad' has meant France or a French-speaking country.

In addition to these practical benefits, the French language is widely seen as a means of access to French culture, which in turn is representative of Western culture. Learning French is therefore seen not only as a way of securing a better job, but also as the means of participating in a more liberal, emancipated lifestyle, and the consumer society. Secondly, it is the means of access to the world of modern science and technology. French is simply a synonym for modernity for many Maghrebians, and speaking French is a means of improving one's social standing.

Some studies, even in the 1990s (Bentahila 1983; Elbiad 1991; Mouhssine 1995) have suggested a lingering resentment of the language, but this is usually outweighed by a desire to identify with the values it represents. Mouhssine (1995: 53), for example, found the attitudes of students at the University of Fez to be "*imprégnées d'une forte ambivalence*" ('riddled with ambivalence'): they rejected French as a cultural value, but wanted to maintain it as a tool for communication. Boukous (1999) found that many Moroccans were profoundly disillusioned by Arabization, and were firmly in favor of a bilingual education for themselves and their children. Moreover, attitudes towards French continue to be positive, among young people who have grown up in an Arabized system at least as much as among those who experienced the bilingual system of the 1960s and 1970s. In a recent study among school children in Khouribga (Marley 2004), the overwhelming majority of informants claimed to like learning French and believe that it is important for Moroccans to learn it, that it is useful for working in Morocco, and that it offers various advantages to Moroccans. An earlier study among a cross-section of Moroccan society (Marley 2000), indicated that most Moroccans, even those who have had no formal education, see French as a normal part of everyday life, and are favorably disposed towards it.

Similarly, a recent survey showed that Algerians have a positive attitude towards French and that they do not particularly value monolingualism since "literary Arabic alone does not ensure social mobility, which is considered possible mainly through the mastery of Arabic-French bilingualism" (Benrabah 2007a: 243). Moreover, the same survey showed that in spite of the high prestige that the English language currently holds, the attitudes of the respondents were favorable to French when they were offered English as an alternative to French as they "seem to reject policies that seek to displace French in favor of English" (Benrabah 2007a: 245).

The status of French in the Maghreb today is thus rather ambiguous. Whilst it may be seen as inappropriate for people in some social circles to use French, among many educated and professional people, French is almost as natural as Arabic, and many others aspire to this.

7. Code-switching and linguistic hybridity

Language contacts in multilingual societies are the source of a number of well-known linguistic phenomena such as borrowing or loan words (usually single-item terms but also phrases) from one language into the other as well as code mixing, the alternate use of two or more languages in a single utterance (intrasentential) or code-switching, the use of two languages within a conversation (intersentential) (Myers-Scotton 1997).

Borrowing is undoubtedly a common practice in North Africa, and even the speech of non-French speakers is influenced by French. In this case, the loan words should no longer be considered French since they lose their original phonological features when they are incorporated into local dialects of Arabic: they are assimilated into the phonology of Arabic. Many common words in everyday use are French, although they have been 'Arabized': *commissariat* (police station), *congi* (leave, holiday), *taubis* (autobus, bus), for example. Code-switching is different from borrowings in the sense that the French items used in Arabic preserve the pattern of the source language. Although this section focuses on the alternate use of Arabic and French, the same principle applies to borrowings and code-switching between French and Berber.

For many educated people, code-switching is a way of life. This has been documented in all three countries: Morrocco (e.g. Bentahila & Davies 2002), Tunisia (e.g., Lawson & Sachdev 2000), and Algeria (e.g., Queffélec, Derradji, Debov, Smaali-Dekdouk & Cherra-Bencheffra 2002). Code-switching between dialectal Arabic and French is often unavoidable, as so many words and expressions related to modern life, in particular to working world, are simply not available in dialectal Arabic. With the spread of Arabization, these words should increasingly be available in MSA, and people will be aware of them, but at present, and certainly for older generations, French often springs to mind more readily.

The following section presents some instances of code-switching taken from Moroccan women's magazines written in French, and from conversations during phone-in programmes on Radio Algiers (*Chaîne 3*).

Although the use of French in magazines limits the audience to a relatively small part of the Moroccan population, it is important to note that the target audience is clearly Moroccan, not French. Whilst any French speaker would be able to read and understand most of the text, there is also a degree of code-switching, primarily into Moroccan Arabic, which makes the language peculiar to Morocco. Code-switching occurs in various ways, and for various reasons, but the most obvious use here is to create a sense of belonging for Moroccan readers. "In other words, context-specific terms are used for the purposes of reinforcing the shared beliefs and practices within a community and rekindling the spiritual bond of its members" (Skalli 2000: 221). The type of readers targeted will certainly code-switch on a regular basis in their daily lives, even if they do not recognize this, and thus the language of the magazines reflects the language of certain Moroccans, even if it is true that the majority of Moroccan women do not have access to this mixed code.

Use of this mixed code is more marked when the subject matter is culture-specific, for example on the subject of Ramadan. This is not a subject that would normally occur in a European magazine, but it is an unavoidable cultural reality in Morocco. On the cover of the November 2004 issue of *Citadine*, the fashion pages are referred to as '*le meilleur du beldi*' ('country', here meaning traditional), whilst the Ramadan cookery feature in *Femmes du Maroc* is entitled *Mon ftour à moi* (the special name for the meal to break the fast). No explanation is given for either of these switches, since none would be needed for Moroccan readers, and there is no French word that expresses these concepts better.

Similarly, in the Algerian radio exchanges there is frequent use of Arabic terms which signal a religious reality for Algerian listeners that cannot be adequately expressed in French. As in the magazines, there is nothing in the Algerian radio exchanges to indicate that speakers are using a different language in the same utterance. Speakers communicate fluently without hesitation pauses, changes in sentence rhythm or intonation, for example: "*on réussira b-rebbi*" ('we'll succeed, God willing'), "*je te souhaite beaucoup de chance in sha Allah*" ('I wish you the best of luck, God willing') or, "*il se porte bien maintenant*, *el Hamdoullah*" ('he is feeling better now, thank God').

In the same issue of *Citadine,* a large number of Arabic words feature in an article referring to another important festival in the Islamic year, *Aïd el Kebir*. This festival celebrates the sacrifice of Abraham, and it is traditional for each family to sacrifice a lamb. The humorous title *Moi, mon mari, le mouton et la bonne, mchat congi!!* ('me, my husband and the maid who has gone on leave') will immediately be understood by all Moroccan readers, who will recognize the panic of the middle class housewife whose maid has gone to celebrate this festival in her village, leaving *Lalla Fatéma* ('madam') to cope with the arrangements concerning the *haouli* 'innocent' (lamb).

The use of Moroccan Arabic can contribute to a sense of community, a community of educated Moroccans who are all capable of speaking fluent French, but often find that the *mot juste* is in *Darija* (dialect). Examples of this can occur in interviews. Nassima Al Hor, journalist and television presenter, begins an interview (*Citadine*, February 2004) by saying she comes from a modest background but, *hamdoullah* ('thank God'), she and her siblings all went into higher education.

Similarly, although the conversations on the radio are held in French, the presenter feels the need to express his sense of membership with his Algerian listeners, and he begins the exchange with the Algerian greeting instead of *bonsoir*: "*msa l-xir. Vous nous appelez d'où*?" ('good evening. Where are you calling from?'). In the same way, a listener replies in French (*bonsoir*) but, by also using the Arabic greeting, expresses her sense of belonging to a larger community of Arabic listeners: "*Bonsoir et msa-l-xir' à tous les gens qui nous écoutent*" ('good evening and good evening to all the listeners').

The Moroccan women's magazines also appear to reflect the reality of life for modern working women who are trying to reconcile their modern working lives with Moroccan (Muslim) traditions. Being independent, educated women speak French but incorporate Arabic words to accentuate the Moroccan reality in which they live. This is particularly noticeable in humorous chronicles which appear in both *Citadine* and *Femmes du Maroc*. In April 2006, for example, Chama, the heroine in *Citadine*, addresses her would-be husband, who thinks too much of himself, as *ould nass*, literally 'son of people', but meaning from a respectable family, and then says *lghaleb Allah* 'Allah is the victor', in other words, it's out of your (or our) hands.

In November 2004, *Femmes du Maroc* introduces a modern couple who combine their busy Western lifestyle with a show of tradition. Abbas and Habiba (*aka* Olivette) are coping with the first day of Ramadan, which appears to be difficult in French: the special cakes and dishes are all named in Arabic (*kaâb ghzal, chebbakiya, briouates, rghifates, mlaoui*), while she refers to his mother as *al oualida* (slightly archaic term for mother). Olivette forgets to set the alarm for *shour*, the pre-fast meal, and is reminded by her husband of her 'Cartesian' education: "*mais où avais-tu donc la tête? A moins qu'à la Mission française, on trouve ça* ***beldi*** *de se lever pour le* ***shour?***" (what were you thinking? At the French Mission school did they think that getting up to eat before fasting was too 'native'?). When Olivette's mother arrives in the evening, she feels ignored by her son-in-law and says: "***A ouldi***, *tu manqueras pas un peu de* ***souab*** *par hasard?*" ('**son**, have you forgotten how to be **polite**?'). As they wait for others to arrive to break the fast, Olivette worries that *"il reste une minute pour la* ***zouaga"*** (just a minute to go before the **siren** that lets people in towns know it is time to end the fast). As the men tuck into the meal, Olivette comments: *"c'est quoi ces* ***jiaânines****, on dirait qu'ils ont jamais mangé de leur vie*!" ('how **hungry** they are, it's as if they've never eaten before!'). As in previous examples, all the Arabic words used convey either a concept not used in French, or one that is different in Morocco.

According to Queffelec and Derradji, the use of such a large number of Arabic expressions in the French spoken in Algeria or in the Maghreb can be explained by an

appropriation or "naturalisation" of the French language by the North African speakers and a need to give it national characteristics: *Ils contribuent à donner à la langue française un aspect national et algérien, un refus de la réduire à une langue étrangère.*[7] (Queffélec et al. 2002: 52). According to Bourhis, Lepicq, and Sachdev (2000), code switching is a form of intercultural communication which implies tolerance and promotion of linguistic pluralism while at the same time avoiding a focalisation on narrow identity issues raised by monolingual nationalism or global hegemony:

> *L'alternance codique constitue une forme de communication interculturelle qui implique la tolérance et la valorisation du pluralisme linguistique tout en évitant les crispations identitaires des nationalistes unilingues et puristes ou des mondialistes hégémoniques.*[8]

However, this is not always the case in the Maghreb and nowhere is this more apparent than in the educational sector.

8. French language provision in schools

To anyone from the English-speaking world, used to minimal teaching of other languages, it will appear that the French language is extensively taught in the state systems of the Maghreb. For increasing numbers of Maghrebian parents, however, provision is seen as quite inadequate, and increasingly those who can afford to do so prefer to send their children to private schools where bilingual Arabic-French education is the norm. In all three countries, there have been attempts in recent years to reform the education system, to improve standards across the board, in order to produce a well educated workforce. It is recognized that one of the major issues to be resolved is the language question, and in particular the mismatch between reduced provision of French in schools, and its continuing widespread use at university level. We will look in particular detail at how the situation has evolved in Morocco, and compare it with developments in Algeria.

Table 1 gives an overview of the situation across the region.

7. 'They contribute to making French a national language of Algeria, refusing to allow French to be reduced to a foreign language'.

8. 'Code-switching is a form of intercultural communication which is tolerant and values linguistic pluralism, whilst avoiding the tensions over identity experienced by monolingual nationalists and language purists, or by those seeking world hegemony'.

Table 1. Number of pupils/students learning French (Adapted from OIF 2007: 40)

Country	Population	% children in school	Primary schools	Secondary schools	HE
Algeria	33,339,000	72	3,000,000	3,300,000	1,500,000
Morocco	30,700,000	52	2,613,820	2,040,850	286,592
Tunisia	9,600,000	74	1,836,626	1,152,625	160,000

In Morocco, the provision of French became increasingly patchy during the 1970s and 1980s, as its role in the state system changed gradually from being the language of instruction to that of foreign language. From as early as the 1960s, complaints were voiced about the drop in standards, and by the 1980s, it had become commonplace to say that standards had fallen. Many people firmly believed that Arabization and the concurrent loss of French in schools were to blame for this. Whilst this was doubtless part of the problem, there were and still are, other equally serious factors which are responsible, not least the fact that the education system changed rapidly from being an elite institution to being open to the masses. At Independence, only 269 Moroccans had the *baccalauréat* and only 3669 the *Certificat d'études primaires* ('primary school certificate') (Benzakour et al. 2000: 51), whereas today over 90% of young people receive at least a primary education. The Moroccan Ministry of Education claimed in 2004 that the proportion of children aged 6–11 enrolled in full-time in schools had gone up from 79% in 1999–2000 to 92.2% in 2002–2003, and the proportion of children aged 12–14 had gone up from 58% to 68.8% in the same period. This national figure hides an enormous discrepancy between urban and rural areas, but this gap too seems to be closing: at primary level the increase was from 90% to 96.6% for urban areas, and 69.5% to 87.8% for rural areas, and for age 12–14 figures went from 83.2% to 87.3% for urban areas, against 34.8% to 50% for rural areas (http://212.217.136/men/progres_realises.asp). In a recent study (Marley 2004: 42), teachers at secondary schools expressed nostalgia for the excellent bilingual education they had received in the 1970s, claiming it produced better results than the current Arabized system. They failed to mention, however, the fact that they belonged to the small minority who had access to that education, and that the vast majority of Moroccans of that generation are not bilingual or even, in many cases, literate. The major cause of the perceived decline in standards must be the massive expansion with limited resources.

As far as French teaching itself is concerned, the decline in standards is relative: in absolute terms, the numbers of Moroccans who have learned French has risen dramatically since Independence. However, the way in which it has been taught has changed, both in theory and in practice. After Independence, French was no longer

seen as a 'language of culture' and was to be taught purely for practical purposes. According to the *Instructions Officielles* of 1960, French teaching would involve:

> *L' étude de la langue considérée non pas comme un objet d'examen et d'étude, mais le maniement correct d'une langue usuelle, conçu essentiellement comme un instrument de communication.* (cited in Chami 1987: 30)[9]

At the primary level, for example,

> *La langue française doit être enseignée en vue de son utilisation et non pour permettre la connaissance analytique de ses mécanismes. Elle doit être, à l'école primaire, non plus un objet d'étude mais un instrument d'expression. Elle doit être pratiquée et non démontée.* [10] (*Instructions Officielles*, cited in Chami 1987: 31)

The major objective of teaching French was to produce Moroccans who could speak French without a Moroccan accent; grammar was to be taught implicitly, and vocabulary and structures were to be functional and instrumental. The cultural context was to be realistic, related to the child's natural surroundings, and avoiding folkloric and 'exotic' images. The objectives at secondary level were similar, with a clear emphasis on the spoken language.

This insistence on the spoken language has serious consequences, according to Chami (1987: 9): although the major part of French teaching time is taken up with oral exercises, pupils are mainly tested in written form, so there is a mismatch between what they learn to do and what they are tested on, leading to poor results. Moreover, it is written French which is more likely to open doors to well paid jobs in Morocco, and which is needed for students going into higher education. There is thus a serious gap between what is taught in schools and what is needed in the outside world, caused by the gap between the official status of the French language and its real position in Moroccan society. Growing awareness of this mismatch was behind the change in direction proposed in the 2000 Charter for the Reform of the Education System.

This Charter, which covered the whole spectrum of the national education system, has a section on language teaching, with three major goals: "*perfectionner l'enseignement et l'utilisation de la langue arabe, maîtriser les langues étrangères et s'ouvrir sur le Tamazight*"[11] (*Charte nationale d'éducation et de formation* 2000: 50). Among other things, it proposes teaching science and technology in 'the most appropriate language'; at present this would mean French, although it can be assumed that in the future it

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9. 'Language study in order to learn how to use the language correctly as a communication tool, not as a serious object of study or for passing exams'.

10. 'The French language is to be studied for practical reasons and not for academic purposes. In primary school, French should not be a subject to be studied but rather a tool for expression. It should be practised and not analyzed'.

11. 'To improve the teaching and use of Arabic, to master foreign languages and to initiate the teaching of Tamazight'.

could mean English. There is also a proposal to introduce the first foreign language very early (in the second year of primary school), and a second foreign language in the fifth year. This seems to herald a return to Arabic-French bilingualism in all but name. This move is seen as pragmatic by some, such as Berdouzi (2000: 21), who claims that to continue to teach sciences in Arabic would be disastrous for future generations of Moroccans. Others, however, such as Moatassime (2002: 144) believes that this "*choix multilinguistique débridé [ ] risque de mener à l'impasse*" ('choice of unbridled multilingualism is likely to lead to a dead end'), and feel disappointed that the Charter did not make more radical reforms in language provision, rather than returning to what he sees as the unrealistic objective of producing future generations of Moroccans bilingual in MSA and French.

At secondary school (*collège*), students have three more years of compulsory education, during which French is taught for six hours per week (Arabic is also taught for six hours a week at this level). The MEN (*Ministère de l'Education Nationale*) website sets out a list of objectives for these three years, but language acquisition i not featured on it. The same is true of the list of objectives for the final three years of secondary education, leading up to the *baccalauréat*. There is, however, a preamble to the section on the programme, which makes the following claim:

> *L'enseignement secondaire est une phase de spécialisation qui donne à l'élève* ***la formation linguistique*** *et les notions scientifiques et techniques nécessaires* ***lui permettant d'accéder à l'enseignement supérieur*** *ou à la formation professionnelle et débouchant par la suite à la vie active.*[12] (our emphasis)

Clearly, to achieve this end, French would have to be used extensively, at least in science and technology subjects, at this level. Moreover, despite the lack of detail on the website, important changes in the teaching of French at this level had already been implemented, even prior to the 2000 reform. In 1997, a new *série option langue* 'language track' was created in fourteen pilot schools, with the objective of producing students who were not only accomplished linguists, but who could also understand and master different registers and appreciate esthetic and cultural dimensions of literary works. Such an initiative underlines the fact that the Moroccan government is conscious of the need not only to improve the quality of French language teaching, but also to introduce a new cultural dimension, and enable students to operate at a higher level in French.

The situation in Algeria developed more rapidly and dramatically, due to the higher level of political and religious tension there. Arabization of the educational system was pursued with great haste in Algeria, and with scant regard for the needs of the children affected by it. For example, any student failing the last bilingual *baccalauréat* in

12. 'The level of specialization in secondary school should give students the **language training** and the scientific and technical knowledge **needed to move into higher or further education** and then into the working world'.

1988 had no option but to retake it in Arabic the following year. At this stage, not only was French no longer used as a medium of instruction in state schools, but a decree forbade Algerian nationals from enrolling in the few remaining French *lycées*, making it difficult even for wealthy parents to ensure a bilingual education for their children.

This pro-Arabization, anti-French policy continued through the 1990s, culminating in the law of December 1996, which set the year 2000 as the date for eradicating French in education, even in higher education, and disciplines such as medicine, science and technology. However, since the election of Bouteflika in May 1999, the hard line on French seems to be softening slightly. The president himself has addressed audiences, both national and international, in French (*L'Express* 1999: 33), ignoring the 1996 law which makes it a punishable offence for politicians to use any language other than Arabic in their public speeches. Bouteflika has stressed the need to renew Franco-Algerian cultural cooperation, and has challenged the pro-Arabization lobby by saying that Algeria did not have an irreversible position concerning the French language. Most importantly, as far as education is concerned, his government seems to have taken into account the various reports that blame the policy of Arabization for the failure of the Algerian education system to produce young people with the necessary skills for the modern world. It could equally be argued that there are multiple factors explaining the failure of the Algerian education system, not least the fact that the system is hopelessly overcrowded: high birth rates – 20.07 per 1000 population in 2006 – mean that 63% of the population is under 30 years of age (ONS), and the number of teachers is quite inadequate to deal with this young population.

Whatever the reasons for the failure, the ministry of education has acknowledged it, and has followed Morocco's example, setting up a *Commission nationale pour la refonte du système éducatif* (May 2000) ('national committee for the reorganization of the education system') and initiating a thorough review of the education system. One of the reasons for the poor performance of Algerian schools generally was the widespread unrest throughout the 1990s and beyond. This had a significant impact on language teaching, with more than 50 % of schools not having any foreign language teachers. Many teachers of French and English, particularly in rural areas, had abandoned their positions, after receiving threats from fundamentalists, fearing for their lives (*Liberté* 2001: 3). The *Commission* recognized the need for adequate language teaching, and recommended the introduction of French from the second year of primary education. It also recommended that French should be the first foreign language taught in secondary schools and that science and technology should be taught in French at university level (*Liberté* 2001: 4). Although Bouteflika's government has implemented these recommendations, the pro-Arabization lobby appears to retain considerable influence, as indicated by recent comments made by Bouteflika concerning privately funded bilingual schools:

> *Je ne ferai pas de réforme au détriment de l'identité algérienne et de la langue arabe Nous avons perdu la langue arabe pendant cent trente deux ans et avons consenti*

> *beaucoup de sacrifices pour la récupérer. Aujourd'hui, il est tout à fait clair que je n'ai pas l'intention de jouer avec ça!*[13] (*Le Monde*, April 18, 2005: 6).

This continued uncertainty over the language issue underlines the reality that any changes tend to be dictated by political, rather than pedagogical, concerns. As Miliani has pointed out (2005: 138), "language policies and reforms have usually mirrored the struggle for power at the highest level". He suggests that this is particularly acute, and distressing, in the education system which has become "a living laboratory where language problems are posed and tentative answers are experimented with, but where no lasting solution is likely to be found because of the divided positions of decision-makers" (Miliani 2005: 134). In an interview with a newspaper (*Le soir d'Algerie*, August 19, 2007), Abderrazak Dourari, an Algerian linguist, said, '*Hélas, les étudiants ne maîtrisent aucune langue. Mon expérience dans le département de traduction me confirme cela*.[14]

9. The Maghreb in the Francophone world

Despite this type of pessimism from many within the education system, French clearly is widely taught and spoken in the Maghreb. Indeed, there are more 'real' Francophones in the Maghreb than in Western Europe: 23.6% of the population in the Maghreb, compared to 17.25% in Western Europe. The three countries of the Maghreb feature among the ten countries in the world with the most French speakers (*État de la Francophonie dans le monde* 2004–2006).

Not only is the Maghreb a significant French-speaking area, two of the countries are involved in the official Francophone body, the *Organisation Internationale de la Francophonie*. The OIF brings together 53 states and governments *ayant le français en partage* ('which share the French language'), for the most part former French colonies. Habib Bourguiba was one of the heads of state who first suggested the creation of such an organization in 1960, and thus, Tunisia has been a full member of the organization from the outset. Morocco has not played such a central role, but has been an associate member since 1981, and has attended the biannual summits since they began in 1986. Algeria, on the other hand, has never joined the organization, but in recent years has demonstrated a change of attitude towards it. Despite being the second largest French-speaking country in terms of numbers of speakers (Bertoin 2005), Algeria resolutely refused involvement with the OIF until the Beirut summit of October 2002, when it attended as an 'observer'. It was assumed that this move heralded a return to the Francophone fold, but the foreign affairs minister, Abdelaziz Belkhadem, announced, prior

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13. 'I will not undertake any reform which would be detrimental to Algerian identity or to the Arabic language… We lost the Arabic language for 132 years and made many sacrifices to get it back. Today, it is absolutely clear that I have no intention of risking losing it again!'

14. Alas, our students are not fluent in any language. My personal experience in the department of translation confirms this (F. Aitsiselmi).

to the Burkina Fasso summit in 2004 that Algeria would not be changing its status as an observer, apparently yielding to the Islamist and pro-Arabization lobby. Bertoin (2005) comments:

> *Mais sans doute était-il alors trop tôt pour "consommer" ou même pour formaliser l'accord, compte tenu du contexte politique et religieux dans lequel s'inscrivait là-bas cette idylle naissante: islamistes et arabisants du sud de la Méditerranée mêlaient leurs protestations pour dénoncer les "soubassements idéologiques" encore présents dans la Francophonie, et le mariage – l'adhésion – fut repoussé une nouvelle fois, au grand regret des cinquante invités à la cérémonie.*[15]

Agents of the OIF, notably the ACCT (*Agence de coopération culturelle et technique*) are very active in the Maghreb, particularly in Morocco, ensuring that French linguistic and cultural influence remains strong. The French government is also keen to maintain various types of link with the Maghreb, and so invests heavily in education and language provision, as well as remaining the first foreign trading partner.

To conclude our assessment of the current role and status of French, we will consider the domains in which French is still important.

10. Domains where French is still important

10.1 Administration

French remains a *de facto* working language in many departments, although the use of Arabic is becoming increasingly the norm. In Morocco and in Algeria, all official texts (constitution, laws, decrees, ministerial decrees) are produced in both Arabic and French. The *Bulletin Officiel* (the government publication listing new acts and laws, etc) is published in both Arabic and French. On the other hand, documents produced by the political parties are published only in Arabic (Benzakour et al. 2000: 86). One area of the administration where Arabization is fairly complete is the justice system; although it is still true that most judges and lawyers are French speakers, French is no longer an acceptable language in courts and all official legal documents must be in Arabic. The Ministry of Islamic Affairs is of course also completely arabized, but in many other areas of the administration, both national and regional, code-switching (Arabic-French) remains common among educated people, since many, if not most, were educated and trained in French, and often find it easier to express concepts in this

15. 'It is probably too early to confirm or even to formalize the agreement, given the political and religious context in which this emerging idyl has occurred. Islamic militants and the pro-Arabization lobby south of the Mediterranean are joining forces to protest against the 'ideological bases' still present in the Francophone movement, and the marriage – joining – was put off once again, to the great regret of the fifty guests at the ceremony'.

language. Official correspondence is in Arabic, but informally, French is still acceptable and often used (Benzakour et al. 2000: 86–87)

10.2 Education: private sector and higher education

As we have already seen, French continues to be an important part of the curriculum in state schools from an early stage, but is still just one subject among a number of others. In both the private sector, from nursery school onwards, and in much of higher and further education, French is used as a language of instruction. This is not what the policy-makers had expected: it had been assumed that Arabization would work its way through the education system including universities. However, the university sector has remained far from fully arabized, although in the humanities it has progressed further than in sciences, which creates a real demand for bilingual Arabic-French education at secondary and even primary level. In addition to the home-grown private sector, there is a growing network of French schools, particularly in Morocco, which claim to respond to a strong demand for bilingual education.

The network of French schools in Morocco is viewed by France as one of the most important elements in its programme of cultural exchange and cooperation in Morocco, *lieux à la fois d'échanges, de formation et d'ouverture* ('places for cultural exchange, training and opportunity'). For Jacques Sénécat, Director General of the *Mission Laïque*, 2000–2003, "*Le Maroc est [..] une terre d'avenir pour la Mission Laïque*". ('Morocco is a land of opportunity for the Secular Mission') (*L'actualité de la Mission Laïque française et de l'OSUI* 2003). Although the largest schools are in Casablanca and Rabat, where the majority of the French community lives, they also have schools in eight other smaller towns, and of the 20,000 pupils registered (2004–5), 13,000 are Moroccan. There are 16 primary schools, 11 *collèges* (lower secondary schools) and five *lycées* (upper secondary schools) across the country.

There are also a small number of private Moroccan schools which are recognized by the French Ministry for Education, and must be inspected every year to ensure that they conform to French standards of educational practice. Morocco is at present the only Arab country where pupils at the secondary schools can take the *Option Internationale du Baccalauréat*, a fact which is attracting increasing numbers of students.

In contrast, Algeria has only one French educational establishment, the Lycée Alexandre Dumas in Algiers. All French schools were closed in the 1990s for security reasons, during the civil unrest and fundamentalist threats, and Alexandre Dumas was reopened by the Minister for Education in December 2002. At the start of the school year in 2004, there were 18 classes with a total of 600 pupils. The Algerian government does not officially try to promote the development of the French language, and has not encouraged the proliferation of French schools. However, in recent years, private

schools offering French education have been increasing in numbers. According to Tselikas (2005):

> *le phénomène est massif: on recense plus de 2,000 écoles, jusque dans les coins les plus reculés. A tel point que le gouvernement s'apprête à légiférer dans ce domaine, sans remettre en question, du moins officiellement, la politique d'arabisation entreprise après l'indépendance.*[16]

There could be as many as 80,000 Algerian schoolchildren in these private schools (Kourta 2004). Algerian parents know as well as Moroccans that an education in French can open the door to studying and working abroad, and are prepared to pay for it. France also began reopening its cultural centers in Algeria: Algiers in 2000, Annaba and Oran in 2002, Constantine and Tlemcen in 2005, thus enabling adults to attend French classes too.

Higher education, as mentioned earlier, continues to be only partially arabized, and increasingly private institutions are offering specialized higher and further education in French. In Morocco, French remains the language of instruction in science and technology, medicine and economics. The *Guide de l'Etudiant Marocain* (2002/2003) gives some idea of the extent to which higher education is dominated by French. Firstly, the *Guide* itself is published in French; the majority of institutions listed in it are private and operate in French – Moroccan universities (*facultés*) account for 19 pages of listings, right at the back, whereas other institutions account for over 200 pages. Among these, around 25 institutions, such as medical and veterinary schools, are public. This suggests that higher education in Morocco is primarily for wealthy bilinguals. Another interesting feature of this Guide is the fact that it devotes several pages at the beginning to information on how to go about applying for a grant to study overseas – both from the Moroccan government and from a number of overseas governments, including the French government.

10.3 The media

French continued to be an important language of the press after Independence, for ideological, practical and technical reasons. As the colonial press gradually disappeared, however, the national French language press did not follow suit, but in fact continued to grow and develop. In 1981, for example, the French press in Morocco had a circulation of 130 000 compared to only 62 000 for the Arabic press. Throughout the 1990s, a variety of new publications appeared in French, both newspapers and magazines, and

16. 'It is a massive phenomenon: there are more than 2,000 schools, even in the remotest areas. It has gotten to the point that the government is about to legislate on this issue, without questioning the policy of Arabization pursued since Independence – not officially, at any rate'.

leisure and special interest magazines. This continued choice of French as a language for the news is no accident; according to Benzakour et al. (2000: 94), French

> *n' est plus perçue comme la langue du colonisateur mais bien comme la langue du journaliste bilingue, s'adressant à un lectorat bilingue dont le français constitue l'une des composantes du patrimoine linguistique et culturel; c'est un idiome "revu et corrigé" à la dimension socioculturelle locale, que le journaliste marocain peut adapter à des fins expressives ou ludiques, pour mieux atteindre et toucher le public ciblé mais aussi pour rivaliser avec la presse étrangère, en particulier française.*[17]

The Moroccan press also continues to publish in French as well as Arabic, and new titles continue to appear in French, although they are now well outnumbered by titles in Arabic. In 2000–2001, more than 70% of new publications were in Arabic. The remaining 30% were mainly in French, but English, Spanish and Tamazight were also used (Ben Ali 2002).

In the mid-1990s, it was estimated that the French reading public and Arabic reading public in Morocco were of roughly the same size: about 100,000 each (cited in Benzakour et al. 2000: 96). These estimates are based on sales of the daily papers in each language, and it can probably be assumed that larger numbers actually read them. Nevertheless, the press is not widely read in any language: the francophone press is only read by "*un lectorat compétent, socialement influent mais réduit*" ('a small readership, but highly influential in Moroccan society') (Benzakour et al. 2000: 97).

In Algeria, French continued to be the more popular choice among readers of daily papers into the 1990s: in 1993, there were 220,000 readers per day for the press in Arabic, compared to 625,000 for the French language press (Benrabah 1999: 271).

Radio in Algeria remains under state control, with coverage strongly in favor of state policies. However, the law now allows the licensing of private stations. State Algerian Radio (*Radio-Algérienne*) has three stations, one broadcasting in Arabic, one in Tamazight and one in French, and operates an international service broadcasting in Arabic, English, French, and Spanish (Algeria Press Overview 2001). Since 2004, it also operates two thematic stations and thirty regional FM stations.

The national radio company in Morocco, RTM (*Radio Télévision Marocaine*), broadcasts on two stations, one in Arabic and one in French. According to Ghazi (2001: 82), apart from the news and the occasional programme on a national or regional issue, it is hard to tell that this is a Moroccan, rather than a French, station.

Another station widely listened to across the Maghreb, is *Médi I* (*Méditerranée Internationale*), a private station based in Tangiers. Linguistically, it is unusual in that

17. 'Is no longer seen as the language of the colonizer, but as the language of the bilingual journalist, who addresses a bilingual audience, who see French as part of their linguistic and cultural heritage; it is a language which is 'tried and tested' in the local sociocultural context, and Moroccan journalists can adapt it for expressive and playful ends, as a better way of reaching their target audience, but also as a way of competing with the press from other countries, particularly France'.

it frequently uses Arabic-French code-switching although it does also have time slots for each language. This use of language was justified by the station manager in an interview when it was set up in 1982: '*Nous avons opté pour le mélange tel que les Marocains le pratiquent, utilisant alternativement français et arabe.*'[18] (quoted in Ghazi 2001: 83). According to its own website (www.medi1.com/medi1) it has 23 to 24 million listeners across the Maghreb, and this figure increases during the summer holiday period. One reason for the large audience is the fact that the station was set up at the express wish of the late king, Hassan II, as a Franco-Moroccan venture, to prove his tolerance of uncensored news. It therefore has a reputation for broadcasting reliable national and international news.

Television in the Maghreb has been largely modelled on the French system, and in each country remained a state-controlled monopoly from the outset until the advent of satellite television in the mid 1980s. These national channels were all essentially instruments of state propaganda, poorly financed and ill-equipped to deal with the competition of the satellite age (Mostefaoui 1995: 15). France, on the other hand, saw the value of television as a means of maintaining a voice and influence, and invested heavily in coordinating broadcasting in this part of the world. The French see television as a vital tool for maintaining Francophonie in the Maghreb, as it is a means of gaining direct entry into people's homes. In societies where school systems are struggling, French television may be seen as an important source of information and cultural knowledge, and "*comme une fenêtre ouverte sur la modernité et la connaissance*" ('as a window opening onto modernity and knowledge') (Mostefaoui 1995: 251).

Despite the increasing availability of other channels, the state channels continue to attract audiences, and seek to influence them. Due to lack of financing, they tend to be highly dependent on foreign imports, which is a major reason for the continuing widespread presence of French.

In Algeria, the state-run ENTV (*Entreprise nationale de Télévision*) is governed by the Ministry of Communication and Culture and is a public service. It did have a monopoly on terrestrial channels in Algeria, but the law allows private channels to operate since 1998.

The arrival of satellite television meant that Algerians had access to numerous Arab and French channels, and was seen as a threat to national identity by some, particularly fundamentalists, who attacked satellite television as an instrument of western influence or 'westoxification' (Ciment 1997: 142). In 1994, Algeria launched its own satellite channel, *Canal Algérie*, targeting the Algerian community in Europe, and aiming to provide a cultural link with Algeria. According to a survey by Institut Abassa in 2001, *Canal Algérie* is the sixth most popular channel in France, and has been recognized as an important international Francophone channel. Since 2002, it has also been broadcast in Algiers as a terrestrial channel. In 2001, channel A3 was launched

18. 'We opted for the kind of mixture that Moroccans actually use, alternating French and Arabic'.

via the Arabsat satellite, targeting the Algerian community in Arab countries. A recent opinion poll conducted by Institut Abassa found that Algerians have a preference for Algerian channels, but that they also watch 27 French-speaking channels and 24 Arabic-speaking ones (Iddir 2006).

In Morocco, the state channel, RTM (*Radiodiffusion Télévision Marocaine*) broadcasts mainly in Arabic, but also in French. News broadcasts are in Arabic, but once a day, there is a ten minute bulletin in French, and another one in Spanish. Since 1994, there has also been a short news summary in each of the three major varieties of Tamazight after the 1pm news. Although the majority of programming is in Arabic, French features regularly in a number of types of broadcasts. French films, documentaries and series are shown frequently, without dubbing or sub-titling, underlining the fact that French is seen as a natural part of the Moroccan linguistic landscape.

Since 1989, state television has had competition from 2M International. The French content on this channel was from the outset far higher than on RTM: originally 71%, but reduced to 50% in 1992 (Benzakour et al. 2000: 99). The news bulletins are in both French and Arabic. Ghazi (2001: 77) suggests that the continued and regular use of French on Moroccan national television is indicative of "*la place qu'occupe la langue française et, par voie de conséquence, la culture française dans le bain linguistique et culturel marocain*".[19]

11. Conclusion

This chapter has described the evolution of the sociolinguistic landscape of the Maghreb, focussing on the way in which French, despite being such a latecomer, has had a widespread and far-reaching impact. It is clear, and understandable, that French quickly became the language of prestige in a number of important domains during the colonial era. Less understandable, however, is the fact that French has not disappeared in the half century following Independence. Although the displaced elites of the Maghreb were quick to emulate the French in imposing a language policy, the Arabization process has not achieved the desired results and French retains an important linguistic influence in many significant domains.

Officially, French has no status in any of the three countries of the Maghreb, the only official language being Arabic. Nevertheless, it does enjoy a privileged status and

19. 'The place of the French language and therefore of French culture in the linguistic and cultural environment in Morocco'.

is far from being just a foreign language. In Morocco, for example, the *Instructions Officielles* for 1987 underline that French has a special status:

> *il n'est ni une langue étrangère au sens strict du terme ni une langue officielle. Il a le statut de langue étrangère privilégiée ou première langue étrangère au Maroc*[20] (Benzakour et al. 2000: 85).

In Algeria:

> *Sans être la langue officielle, elle véhicule l'officialité, sans être la langue d'enseignement, elle reste une langue de transmission du savoir, sans être la langue d'identité, elle continue à façonner de différentes manières et par plusieurs canaux, l'imaginaire collectif*[21] (Sebaa 2002: 9).

Although not recognized as a working language:

> *il est de notoriété publique que l'essentiel du travail dans les structures d'administration et de gestion centrale ou locale, s'effectue en langue française*[22] (Sebaa 2002: 9).

As this chapter has indicated, French is widely perceived as the language of social aspiration and mobility; it is also the means of access to a different – better – way of life, and the modern world generally. We have looked in some detail at the ways in which French continues to pervade the domains of education, administration and the media, but could equally have examined cultural production, in particular literature, since Maghrebian literature in French holds an important place in the Francophone literary canon. We have also not dwelt on the cultural interactions between the Maghreb and the Maghrebian diaspora in France, interactions which must increasingly be conducted in French, as the diaspora shifts away from Arabic. For this reason, as well as the others stated, French is likely to continue to hold a special place in the sociolinguistic landscape of the Maghreb.

12. Directions for future research

As we have indicated, the role and status of French in North Africa has evolved in a way not foreseen by the language planners of the newly independent states some fifty years ago, and its continuing role as a prestige language means that there are still several

20. 'It is neither a foreign language strictly speaking, nor an official language. It has the status of privileged foreign language or first foreign language in Morocco'.

21. 'Although not the official language, it conveys officialdom, although not the language of education, it conveys knowledge, although not the language of identity, it still shapes the collective imagination, in different ways and by different means'.

22. 'It is a well known fact that most of the work in the civil service and in central and local government, is conducted in French'.

interesting areas of research to pursue. One is the issue of borrowing and code-switching, touched on briefly in this chapter. As in all multilingual societies, language contact is constantly changing, and there is a rich field of research to be pursued in the ways in which code-switching between French and dialectal Arabic is developing in North Africa. These developments are affected by many factors, such as the democratization of education, increased contacts with France as well as with the Middle East, and the rapid development of texting and online communications. Linked to this would be the development of the media in French, both traditional print media and 'new' media, notably the internet. As we have noted here, since the 1990s, the use of French on national television channels has declined, and the Arabic language press is growing more than before, but French continues to be widely used in television, both in the public and private sector, and even now new titles in French appear in the kiosks. There is thus a wide field of research to be undertaken in the use of French in the media.

Another field of interest would be a comparative study of French among people living in North Africa and their relatives in the diaspora. It is increasingly the case that so-called second and third generation immigrants are monolingual French speakers, and yet strong links are often maintained with the 'home' country. Algeria has justified its use of French in satellite channels on the grounds that the target audience is Algerians and their descendants living in France; the existence of a large North African diaspora in France does contribute to the maintenance of French among families 'back home', and there are interesting studies to be conducted on language attitudes on both sides of the Mediterranean.

A third interesting direction would be to examine the impact of English: whilst French has held its own despite Arabization, there are growing indications that the next generations may find English a more useful language, given that it assumes many of the roles currently fulfilled by French, and undoubtedly gives access to greater realms of cultural material, scientific research and other aspects of the modern world.

Finally, the effects of language planning in the post-colonial Maghreb is an area that has been widely researched, but primarily with a focus on the process of Arabization. In recent years, Morocco and Algeria have given official recognition to Berber languages, and all three countries seem to have implicitly recognized the value of retaining French in the education system. These developments open up new areas of research into how education and other areas of life in North Africa may be affected.

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CHAPTER 7

Anthropological linguistic perspectives on writing Guadeloupean *Kréyòl*

Struggles for recognition of the language and struggles over authority

Kathe Managan
Louisiana State University

L'anthropologie linguistique considère l'utilisation des langues et l'aménagement des langues comme des pratiques sociales qui sont influencées par la culture et l'idéologie. J'utilise une perspective anthropolinguistique pour analyser les efforts de propagation d'une orthographe standardisée en créole guadeloupéen qui le distingue nettement du français. Les conflits sur l'écriture du créole et sur les formes que cette écriture devrait prendre font partie d'une plus vaste lutte idéologique sur le créole et l'identité guadeloupéenne et les rapports avec le français et l'identité française. L'éducation de l'écriture et de la lecture du créole se répandent, mais les opinions sur l'écriture du créole restent ambivalentes et, d'ailleurs, la plus grande partie de l'écriture en créole n'utilise pas les conventions de l'orthographe standardisée. Néanmoins, les donnés que j'ai pu recueillir entre 1998 et 2006 montrent que les aspects les plus contestés de cette orthographe gagnent du terrain et sont même mobilisés comme des emblèmes de l'identité guadeloupéenne.

Anthropological linguistics approaches language use and language planning as culturally informed, ideologically shaped social practice. Drawing on an anthropological linguistic perspective, I analyze efforts to disseminate a standardized orthography for Guadeloupean *Kréyòl* that clearly distinguishes it from French. Conflicts over writing *Kréyòl* and the forms it should take are part of a broader ideological struggle over *Kréyòl* and Guadeloupean identity in relation to French language and French identity. *Kréyòl* literacy education is becoming more widespread, but views on *Kréyòl* writing remain ambivalent and most *Kréyòl* writing does not adhere to the standardized orthographic conventions. Nonetheless, my data, collected between 1998–2006, indicate that the most contested features are gaining ground and are even mobilized as emblems of Guadeloupean identity.

1. Introduction

Guadeloupe is a DROM (*département et région d'outre-mer* or 'overseas department and region'), located in the Lesser Antilles. As a part of the French Republic, French is its official language, used in schools and all official communication. Guadeloupean *Kréyòl*, on the other hand, is widely spoken, but traditionally it was not written. It is only in the past thirty years that a standardized orthography for *Kréyòl* was developed and disseminated through classes, which became widespread in 2002 as a result of French legislation instituting a CAPES teaching degree in Creole regional language and cultures. The CAPES (*certificat d'aptitude au professorat de l'enseignement du second degree*, 'certificate of aptitude for the professoriate of teaching at secondary level') exists with a specialization in many different subjects, and before 2002, Creole languages were included under the French language specialization. The new legislation allowed for Creole regional language and cultures to be a separate specialization.

One day during my fieldwork in Guadeloupe in 2000, I returned home to find my neighbors – a husband and wife and their grand-daughter – gathered around the newspaper, laughing. They called me over and asked me to look at an ad. They wanted to see if I could help them read what was written, because I was taking *Kréyòl* classes. The text was an advertisement for car accessories, with the main line written in *Kréyòl* (see Figure 1).

It said: "*<u>L'Auto</u> en mwen, séy ki pli bèl*" ('My car, it's the one that is the most beautiful').[1] The rest of the ad was in French. As I read it aloud, they laughed, then explained that these words, which they did understand, did not look like *Kréyòl* to them (cf. Fenigsen 1999, who noted similar reactions to written Bajan in Barbados, albeit to mainly pejorative and caricatured depictions of written Bajan). I noted that the writing did not in fact conform completely to the orthography I was learning in class, the GEREC orthography (created by the *Groupe d'Etudes et de Recherches de la Créolophonie* 'Creole Study and Research Center'). But as they explained how they thought it should be written, it was obvious that their rejection was based more on the fact that the *Kréyòl* did not conform to the French orthographic conventions with which they were most familiar. The man commented that he did not normally write in *Kréyòl* – he wrote in French instead – but that if he were to write something in *Kréyòl*, he would write it more like he wrote French.

This anecdote illustrates how Guadeloupeans commonly react to seeing *Kréyòl* written. Few Guadeloupeans learn to read or write *Kréyòl*. During fieldwork for my dissertation (1998–2002), Guadeloupeans repeatedly commented how easy it should be to learn to speak *Kréyòl*. Most Guadeloupeans believe that learning *Kréyòl* is instinctive and comes through interacting with *Kréyòl* speakers. My consultants said that reading and writing *Kréyòl* was another matter; they all knew how to write in French and found that, in their experience, reading or writing in *Kréyòl* is extremely difficult. My experience was quite the opposite. I had learned the GEREC orthography that is commonly used for *Kréyòl* in educational settings and could imagine the words without

1. Transcription conventions: *Kréyòl* words are written using GEREC orthography.

relating them to French orthography. For all but a small minority of people in Guadeloupe, however, these orthographic conventions are shrouded in mystery. Even those who are familiar with the GEREC conventions sometimes find writing *Kréyòl* difficult because French orthographic conventions are so ingrained in them that they have trouble adapting to GEREC conventions and using them consistently. I heard several people familiar with the GEREC orthography say that writing in *Kréyòl* using the GEREC orthography consistently required a huge effort on their part, whereas they could write in French more spontaneously.[2] In fact, most writing in *Kréyòl* uses variable orthographies that only partially and inconsistently adhere to GEREC guidelines.

The standardized GEREC *Kréyòl* orthography, created in the late 1970s, has only widely been disseminated through classes since 2002. By 1999, optional *Kréyòl* classes were available in the junior high schools of only two towns, Capesterre-Belle-Eau, which had begun offering classes in the mid-1980s, and Petit-Bourg, where I did fieldwork. *Kréyòl* writing classes were also available at the local teachers' training academy, along with *Kréyòl* language classes for non-Guadeloupeans. In 2002, most Guadeloupean towns began to offer optional junior high classes in creole language and culture and a teaching certification program was established for this subject.

The GEREC orthography – like the Haitian official orthography (Schieffelin & Doucet 1994) – highlights differences between French and *Kréyòl* through a phonemic orthography that represents an idealized basilectal standardized version of *Kréyòl*, as I will explain. This idealized basilectal standard also underscores the autonomy of *Kréyòl* from French. Because the *Kréyòl* standard, now taught in schools to a limited extent, does not always represent the way Guadeloupeans speak the language, and because the orthography used to write it differs from the French orthography to which they are accustomed, the writing of *Kréyòl* – a basic aim of *Kréyòl* activism and education – has been very contentious in Guadeloupe. Guadeloupeans question especially the form of the written *Kréyòl* being promoted. This conflict and its underlying sets of logic are the subject of the present chapter. Drawing on metalinguistic commentary of *Kréyòl* language planners and ordinary speakers, examples of written *Kréyòl* from various sources and previous studies of written *Kréyòl* (Hazaël-Massieux 1993; Ludwig 1989; Prudent 1989, 2003), I demonstrate that there are signs that the authority of GEREC's orthography is being slowly accepted, however reluctantly. In fact, the most disputed features of the GEREC orthography have come to be used as emblems of Guadeloupean popular culture and of Guadeloupean creole identity.

2. Winer (1990: 258) argues that a phonemic orthography for English-lexicon Creoles might be difficult to write consistently because it would represent sounds that not all perceive and because it would require a unique spelling for words that are the same in English. Jaffe (2000: 510) points out that any non-standard orthography (including newly developed orthographies) puts the reader in a position similar to that of a child learning to read for the first time and requires them to operate in "a decoding mode".

Figure 1. Mr. Bricologe ad

2. Linguistic anthropology and the study of literacy

Linguistic anthropology is one of the four traditional branches of anthropology, which also includes sociocultural anthropology, physical anthropology and archaeology. As indicated by its name, linguistic anthropology is an interdisciplinary subject. It draws

from and covers subjects of interest to both linguistics and anthropology, as well as other fields such as sociology, psychology and communications. Originally, linguistics as a branch of anthropology referred to any type of study of language conducted by anthropologists. But it has developed its own identity as a discipline, with its own theoretical interests and methodologies. As it has developed, it has come to be referred to as linguistic anthropology or anthropological linguistics, to differentiate it from linguistics, which is usually a separate discipline in most universities.[3] Linguistics, as the study of language, has many subfields, but has traditionally focused on language structure and use. By the 1960s, linguistic anthropology began to differentiate itself from formal linguistics. Developing from the work of Dell Hymes (1997) on the ethnography of speaking, linguistic anthropology differs from formal linguistics in that it begins from the viewpoint that language and speaking are cultural practices.

Thus, the sociocultural context remains at the center of studies of language that are classified as linguistic anthropology. This is not to say that linguistics as a whole ignores culture. In fact, the discipline of sociolinguistics has much in common and often overlaps with linguistic anthropology. Sociolinguistics emerged as an effort to highlight socially relevant differences in language use. While this is also a concern in linguistic anthropology – and indeed many sociolinguists also consider themselves linguistic anthropologists and vice versa – linguistic anthropological studies are more likely to be based on extensive fieldwork, as well as to explore the contextual meanings of linguistic differences or their patterns of use among different segments of a group of people with whom the researchers have worked.

One interest in linguistic anthropology, as in applied linguistics, has traditionally been language revitalization. Developing literacy in a lesser-used language is often a primary focus in language revitalization efforts, as language planners seek to establish the legitimacy of the language (e.g., Ahearn 2001; Brown 1993; Cook-Gumperz & Keller-Cohen 1993; Jaffe 2000; McKeown 2006; Winer 1990).[4] Fishman (1980, 1991) suggests that literacy in a minoritized language can contribute to its maintenance, but argues that literacy in a minoritized language is ultimately of lesser importance in reversing language shift than the intergenerational transmission of the language.

There is a body of linguistic anthropological literature that views literacy as a set of socially embedded cultural practices, and that stresses the ideological nature of both choice of orthographic representations and reaction to them (e.g., Besnier 1995; Heath 1983; Schieffelin 1995; Sebba 1998). The analysis of the present chapter is inspired by that line of research. The pedagogical issues involved in orthographic choice are also worthy of consideration. As Schieffelin and Doucet (1994) point out, deciding which orthographic conventions to use to represent a language is never a neutral matter; it involves ideological choices often linked to issues about representing group identity and

3. In Europe, the term ethnolinguistics is preferred.

4. The development of literacy in lesser-used languages has also been a primary concern of missionaries seeking to spread their message (e.g., Irvine 1997; Schieffelin 2000).

relationships between different group identities (e.g., Brown 1993; Fenigsen 1999; Jaffe 1999, 2000; Sebba 1998, 2000). The conflict over writing *Kréyòl* and the forms it should take are part of a broader ideological struggle over *Kréyòl* and Guadeloupean identity in relation to French and French identity. *Kréyòl* is valued in some way by all Guadeloupeans – it is a large part of the very definition of Guadeloupean identity – but whether and how it should be standardized, developed and promoted, remain topics of discussion.

3. Guadeloupe's linguistic situation

In Guadeloupe, French has traditionally been seen as the language of prestige, spoken, as well as written and read, by the elite and the educated. In contrast, *Kréyòl*, spoken among family and friends, historically evoked images of solidarity and intimacy, but also of poverty and backwardness. The linguistic landscape of Guadeloupe and Guadeloupean attitudes toward their languages do not, however, divide so neatly up into simple dichotomies. Furthermore, they are currently in flux.

It is very difficult to obtain reliable statistics on the languages spoken by the Guadeloupean population, and any potential study would have to deal with issues of how fluency is defined, how the population is defined and how different language varieties are defined. But studies over the past thirty years, including my own research, indicate that there has been a shift from *Kréyòl* monolingualism to French-*Kréyòl* bilingualism. All but a handful of the Guadeloupeans I worked with or met during my fieldwork can speak or at least understand both French and *Kréyòl*. While nearly all Guadeloupeans can at least understand both languages, competence in the two varies. Only some members of the oldest generation, perhaps five percent of the total population, are monolingual in *Kréyòl* today. It is common for Guadeloupean youth to be raised speaking exclusively French, but given the fact that so much of Guadeloupean life takes place in *Kréyòl*, unless they were raised outside of the island, they are likely to have at least passive competence in *Kréyòl*.

Despite widespread bilingualism, the linguistic landscape of Guadeloupe is extremely rich and varied. There exists great variety within French and *Kréyòl* as they are spoken. Some speak a variety of *Kréyòl* whose grammar and vocabulary are highly influenced by local French (which Guadeloupeans refer to as *kréyòl fransizé*, 'Frenchified *Kréyòl*') or even metropolitan French (a cover term used by Guadeloupeans to refer to all varieties of French used in mainland France). Others speak a form of *Kréyòl* less influenced by French which many idealize as a purer, more authentic *Kréyòl*.[5] The latter, usually called *gwo kréyòl* ('coarse creole'), is thought by many to be dying out or

5. Consultants variously referred to such *Kréyòl* in evaluative terms as good *Kréyòl* (*bon kréyòl*) or true *Kréyòl* (*vrai kréyòl*). None of my consultants ever claimed to speak good, true *Kréyòl* though.

at least changing under the influence of French. For example, Frenchified *Kréyòl* often uses reflexive verbs, which do not exist in *gwo kréyòl*.[6] The French phrase 'I recall':

Je	*me*	*rappelle*
1sg	1sg-obj	recall

becomes in Frenchified *Kréyòl*:[7]

an	*ka*	*raplé*	*mwen*
1sg	IMP	recall	1sg-obj

In *gwo kréyòl* one would express the same idea with the verb *sonjé*:

an	*ka*	*sonjé*
1sg	IMP	recall

In my interviews with consultants, I asked each person to translate a series of sentences from French into *Kréyòl*. I specifically targeted constructions that are often expressed with French-influenced forms, especially reflexive verbs and relative clauses. For reflexive verbs I included *se rendre compte* ('to realize') in French. Most of my consultants gave *vwé* ('to see') or *kompwann* ('to understand') for *se rendre compte*, but one of my younger consultants gave the Frenchified *Kréyòl yo ka rann yo kont* (3rd pl IMP render 3rd pl account) instead, and one older consultant noted that some people use this French-influenced form, although that isn't the way she would say it. *Gwo kréyòl* is more likely to be heard in the countryside and from older speakers. Individual speakers may command more than one variety of Kréyòl and use one of the other depending on the context and one interlocutors. It is, however, rare to hear anyone speak exclusively *gwo kréyòl* in practice whereas it is very common to hear code-switching between French and *Kréyòl*.[8] Given this very complex linguistic situation, I prefer to describe it as a continuum, with metropolitan or local French at one end, representing the acrolect, and *gwo kréyòl* at the other end, representing the most basilectal variety (Managan 2004; cf. Prudent's 1981 discussion of Martinique's linguistic situation and the existence of an interlect).

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6. Reflexivity in *gwo kréyòl* may also be expressed with the construction VERB + *kò* ('body') + Possessive pronoun (cf. Carden and Stewart 1988, 1989). Thus "I wash myself" would be:

an	*ka*	*lavé kò*	*a'mwen.*
1SNG	IMP	wash	body POSS-1SNG-obj

I wash my body.

7. *An* is simplified form of *mwen*. *An* is generally used in the subject position, whereas *mwen* is used for the 1sg object. When *mwen* is used in the subject position, it expresses emphasis.

8. Most Guadeloupeans speak one variety of French and one variety of *Kréyòl* and often code-switch between the two. Even speakers of *gwo kréyòl* who are not monolingual engage in some code-switching between varieties of French and *Kréyòl*.

4. Early *Kréyòl* writing

Few examples of early written texts in *Kréyòl* from Guadeloupe exist, but texts in French-lexicon creoles from other former French colonies in the Caribbean have been documented. Edicts by the French government were occasionally written in *Kréyòl*, to be read aloud to the slaves (Hoffman 1990). The first text written in a French-lexicon creole (in Haitian Creole) was *Lizette quitté la plaine*, written in 1757 by Duvivier de la Mahautière, a white Creole planter. In Guadeloupe, the first text in *Kréyòl* appears to be dated a hundred years later. In 1860, Paul Badot – a Guadeloupean *béké* ('descendent of the white planter class') – wrote *Oeuvres Créoles* (cited in Prudent 1980: 32).

In the late 1940s in Guadeloupe, a group of mulatto elites created an organization, *l'Académie Créole Antillaise* ('Antillean Creole Academy'), or ACRA for short, to study popular Guadeloupean culture (Chamoiseau & Confiant 1991: 105–106).[9] The group's slogan was "*tout sa qi créôl sé tan nou*" ('that which is Creole is ours'). They focused primarily on *Kréyòl*, as they collected folktales, proverbs, songs, and so on. Several members were writers who composed their own plays and poems, in *Kréyòl* or French, or a combination of the two. They were most active in the 1950s and 1960s, but one of the members, Germain William, continued to organize conferences and publish into the 1970s.

ACRA and its members were the main actors writing in or about *Kréyòl* until the 1970s,[10] when writing emerged that reflected of the militancy of the times, as an independence movement had become quite active in Guadeloupe. For example, the language activist Hector Poullet published a bilingual text of poems and a journal called *Mouchach*. Sony Rupaire also published poems in *Kréyòl* starting at this period. The two trends represented by ACRA and *engagé* ('militant') writers have continued today: much writing in *Kréyòl* is either archival in nature (e.g., the collection of folktales) or of an activist bent. But other uses for written *Kréyòl* exist as well, such as in ads, flyers, and the like. I focus on examples of the latter in this chapter (see Prudent 1989 for an analysis of similar texts in the French West Indies). It is significant that written *Kréyòl* in ads and flyers is much less likely motivated by a desire to preserve *Kréyòl* than are texts written by activists or archivists. *Kréyòl* activists explicitly state that their goal is to preserve a variety of *Kréyòl* that they see as dying out. Their explicit goals are to preserve and publicly present a pure *Kréyòl*. Ads, on the other hand, presumably have as a goal to sell a product to an audience and to communicate a message to them; they are not likely to be motivated by linguistic purism.

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9. Founding members include Rémy Nainsouta, Bettino Lara and Gilbert de Chambertrand.

10. Despite their focus on local culture, the Antillean writers associated with the Négritude movement writers wrote in French.

5. The GEREC *Kréyòl* standard and its orthography

One of the primary goals of *Kréyòl* language planners is to establish a written standard for *Kréyòl* and to spread knowledge of it through education. A focus on writing a standard version of *Kréyòl* also serves to preserve a variety that language activists see as dying out, as influence from French changes the lexicon and grammatical structure of *Kréyòl*.

The model of *Kréyòl* that language planners use for the standardized *Kréyòl* they promote is *gwo kréyòl*. To write this standard, they use the orthography developed in the late 1970s by GEREC. Their creation of a standardized orthography is part of a greater linguistic study of *Kréyòl*. In an effort to codify and develop a standard of *Kréyòl*, GEREC and other *Kréyòl* scholars create neologisms based on etymology (by seeking related terms) and on *Kréyòl*'s derivational morphology, designed to enable literary and scholarly texts to be written in *Kréyòl* (Bernabé 1977a, 1977b; Ludwig & Poullet 1989). Rather than referring to French as a source for new terms, they seek out specifically *Kréyòl* lexemes that have a semantic range that is somehow related to the new term and either adopt the *Kréyòl* lexeme with a new meaning or create a new *Kréyòl* term based on it, using *Kréyòl*'s derivational morphology. Highlighting the pan-Creole image that such scholars often seek to create, neologisms also draw on other French-lexicon creole lexemes and morphology. For example, an organization that was created to promote French-lexicon creole scholarship was called *Bannzil Kréyòl* (a neologism meaning 'creole archipelago'). The name was created from the Indian Ocean Creole root words *zil*, 'island' and *bann*, a plural marker combined with the Caribbean Creole word *Kréyòl*, 'Creole'. The name thus is intended to exemplify the unity of the French-lexicon creoles of the Indian Ocean and the Caribbean. Since neologisms would not be commonly known to readers, authors using them commonly include a definition. So, for example, in an article from the journal *Mofwaz*, the author includes several expressions followed by a definition in French, including *dékontrolay* (*paradoxe*, 'paradox'), *menm woté-a* (*même grade*, 'same grade, in school') and *ti lapouyé pawòl* (*petites précisions*, 'small precisions') (Lawou 2004). The stated goal of these language planners is not to reflect the way that people speak, which includes much variation, but to provide a reference point as well as to give *Kréyòl* a literary standard that can hold its own against French (Poullet interview 6/04/02; see also Confiant 2001).[11]

The GEREC orthography does not hold official status *per se*. That is to say, no document has decreed that this orthography and one particular variety of *Kréyòl* are to be used for writing *Kréyòl*. Indeed, there were initially several propositions for a *Kréyòl* orthography (e.g., Bebel-Gisler 1975; Hazaël-Massieux 1993), but they are rarely used today. The GEREC orthography was selected for use in the state-sponsored creole language

11. To promote its position, GEREC has published, since the late 1970s, two academic journals, in French and *Kréyòl*: *Espace Créole* and *Mofwaz*. Other efforts of *Kréyòl* language scholars to promote writing in *Kréyòl* include the magazine *Grif-an-tè*, published from 1977 to 1981.

and culture education program; pedagogical materials for this new program were developed by GEREC (e.g., Bernabé 2001; Confiant 2001; Ramassamy 2002).

In creating an orthography for *Kréyòl*, GEREC proposed orthographic guidelines that stressed the differences between French and *Kréyòl*, based on the principle of *déviance maximale*, 'maximal deviation' from French (Bernabé 1977a, 2001; GEREC 1982). As Jaffe (2000: 505) observes: "orthography both differentiates a code from other codes, and displays the internal coherence and unity (sameness) of that code. In this respect, orthography is one of the key symbols of language unity and status itself". Just like the Haitian official orthography (Schieffelin & Doucet 1994), the GEREC system was phonemic rather than etymological, basing the spelling on distinctively *Kréyòl* phonemes rather than on resemblance to French words. Indeed, this was an explicit goal: to highlight the autonomy of *Kréyòl* in relation to French as the dominant language, while combating decreolization (Confiant 2001).

The GEREC orthography resembles the Haitian official orthography to a large extent. It was developed by French West Indian scholars with reference to the Haitian system. GEREC scholars also collaborated with language activists from Dominica and Saint Lucia on the development of their creole orthographies (Bernabé 1983; Christie 2003: 28–29; Prudent & Schnepel 1993; Restog n.d; Winer 1990). There are, however, some notable differences between the GEREC orthography and the official Haitian orthography. The GEREC orthography, as taught in *Kréyòl* classes I attended or observed in Guadeloupe in 1999–2000, consists of the following:

> Oral vowels: a [a], é [e], è [ɛ], i [i] o [o], ò [ɔ], ou [u], (u [y] optional for regional varieties which use this phoneme)
> Nasalized vowels: an [ã], en [œ̃], on [õ]
> Semivowels: w [w] and sometimes u [u], y [j]
> Consonants: b, ch [ʃ],d, f, g, h, j [ʒ], k, gy [gʲ] or [ʤ], ky [kʲ] or [ʧ], l, m, n, gn [ɲ], p, r, s, t, v, z

The Haitian *òtograf ofisyèl* ('official orthography') consists of the following (Schieffelin & Doucet 1994):

> Oral vowels: a, e, è, i, o, ò, ou
> Nasalized vowels: an, en, on, oun
> Semivowels: w, y, u [ʏ] (in the diphthong ui)
> Consonants: b, ch, d, f, g, h, j, k, l, m, n, ng, p, r, s, t, v, z

Both orthographies exclude the front rounded vowels and selectively use the *accent grave*, the è and ò, to represent the sounds in French *tête* and *côte*, respectively. (The acute accent for e as in *té ké* is only used in the GEREC system.) In addition to the alphabet, both include guidelines for representing grammatical relations with written symbols. While hyphens and apostrophes are optional in the Haitian system, GEREC uses both. The GEREC system uses the apostrophe to indicate an abbreviated form (e.g., *té'é* instead of *té ké* 'would'). In the GEREC system, the article, which follows a

noun in *Kréyòl*, is set off with a hyphen (e.g., *tab-la*, 'the table'). This includes nouns that retain the French agglutinated article, which, as part of the *Kréyòl* word, is not marked with any punctuation (e.g., *lékol-la*, 'the school'). The GEREC system, as I observed it taught, also uses hyphens to link prepositions with pronouns (e.g., *asi-y*, 'on it', also the possessive form, e.g., *a-y*, 'his/her'), as well as verbs and their object pronouns (e.g., *touvé-y*, 'found it').

Once the CAPES for *Kréyòl* was established, GEREC published a new, updated orthography (Bernabé 2001) which includes the vowels *éu*, *èu* and *un*, as optional graphemes. These represent the front rounded vowels /ø/, /œ/, /œ̃)/, respectively. Apostrophes also replace the hyphen in all cases except to link a noun and its determiner. These changes perhaps reflect a recognition of public and scholarly reactions to their initial proposals. Although the GEREC orthography is designed to represent each sound with a specific symbol (either a monograph or a digraph) and to use each symbol to represent only one sound, there is an exception: when the second person singular object pronoun is linked to a preposition or verb, it is spelled *w* rather than *ou,* but still pronounced /u/.

6. Ideological underpinnings of the GEREC orthography

I argue that ideologies of society and geography are bound up in the logic that underlies the GEREC orthography. As Schieffelin and Doucet (1994) note, social variation is not reflected in the Haitian Creole official orthography. Its creators chose to represent only the basilectal variety, associated with rural and less educated speakers. The GEREC orthography was developed to represent all the French-lexicon creoles of the Lesser Antilles and used the Haitian Creole official orthography as a model. It was also designed to highlight the autonomy of *Kréyòl* from French. I contend that the ideology that underlies the GEREC orthography encompasses a vision of the local geography that notes regional differences, but downplays them in the face of the larger differences between France and the Antilles. This serves to stress the autonomy of Guadeloupe from France and of *Kréyòl* from French, as well as to play up pan-Creole and pan-Caribbean relations. This can be seen in the insistence on *déviance maximale* ('maximal deviation' from French), the guiding principle behind the choices made by GEREC regarding orthographic conventions for *Kréyòl* (Bernabé 1977b, 2001; GEREC 1982).

The principal of *déviance maximale* from French extends to the erasure of Frenchified *Kréyòl* in the GEREC orthography. Alternate pronunciations are accounted for with alternate spellings, but only when this applies to regional or individual differences, <u>not</u> to variations that mark a distinction between *gwo kréyòl* and Frenchified *Kréyòl*. For example, the French front rounded vowel *eu* and nasalized front rounded vowel *un* were not represented in the alphabet at all, until the revised version came out in 2001, and then they were only optional, viewed as part of the less widely used "maximal" system of pronunciation (Bernabé 2001: 33). The front rounded *u* [y] is also

optional; it is said to represent a feature of the speech of those from the southern part of the western side of the island (called *Basse-Terre*) and from the islands of Les Saintes, not the Frenchified *Kréyòl* of speakers from the rest of the island. But even *gwo kréyòl* shares much of its phonology with French. Nonetheless, the GEREC orthography contains many letters that are not commonly used in French. Thus, sounds that French and *Kréyòl* share are often written differently in the two systems (see Sebba 1998).[12] Examples of differences include the *k* and *w* GEREC uses to represent the sounds /k/ and /w/ (where French uses *c*/*qu* and *ou*),[13] and what phonologists refer to as the "open o", written in the GEREC orthography *ò*, but often written in Standard French as *ô*. The letter *ò* does not exist in French. These differences were included in the GEREC orthography specifically in order to highlight that *Kréyòl* is separate and different from French, in order to combat the stigma attached to *Kréyòl* seen as broken French. But when most Guadeloupeans see written *Kréyòl*, they comment on the differences between *Kréyòl* and French conventions, focusing on the letters *k* and *w*. There are, moreover, many other ways in which French orthography, GEREC's orthography and the variable writing strategies used in Guadeloupe differ – differences that are not elaborated on in metalinguistic commentary, as I demonstrate below.

7. Writing *Kréyòl* in Guadeloupe today

As Jaffe (1999) points out for Corsican, it is important to understand the literacy practices in which speakers of minoritized language do engage when considering efforts to promote literacy in that language. Most Guadeloupeans living today have attended school for at least a few years. Among the population aged fifty and above, it is common for people to have a basic elementary school education. During the lifetimes of the oldest generation, one could attend school until about the age of 14 and receive a *certificat d'études*, 'certificate of studies'. Then one could attend high school. Younger Guadeloupeans are more likely to have attended and finished high school, if not college or other post-secondary training. In school, they learned to read and write in French.

Aside from educational spheres, literacy practices vary. Some Guadeloupeans read novels and/or the local newspaper, but for many, especially older Guadeloupeans, radio and television replace these past-times. In general, literacy practices are confined to educational spheres (including helping children with schoolwork), religious purposes, employment requirements, administrative functions and bureaucratic paperwork (e.g., Chesire 2002). Letter-writing no doubt played a role in certain people's lives in the past,

12. Sebba (1998) notes that there is no established system for writing English-lexicon creoles, but that in Britain he found variable orthographies used that often stressed the differences between Creole and Standard English. He suggests this might be the creation of an 'anti-standard'.

13. The *w* does exist in French, to spell certain words of foreign origin, such as *wagon* (pronounced vagon) and *walkman*.

but today most prefer to keep in touch with those living far away by telephone. A growing number of Guadeloupeans also use e-mail as a means of communication. It is mainly Guadeloupean youth who have access to and use the internet, for web browsing, chatting and e-mail correspondence. Internet chats, forums and instant messages are written in French and/or *Kréyòl*, and sometimes include expressions in English. Many Guadeloupean youth also communicate through text messaging via cell phone.

Thus, literacy practices (in any language) only play a large role in the everyday lives of Guadeloupean youth and those whose work require such practices. Given this fact and the fact that the literacy skills that most have are in French, it is not surprising that reactions to written *Kréyòl* are often negative. Like the Martinican *créolité* literary movement (Managan 1999; Prudent 1989), the main efforts at producing periodicals and other texts in *Kréyòl* have had little success because there is not a sufficiently large readership. Martinique and Guadeloupe have high literacy rates, yet attempts at increasing literacy in *Kréyòl* have only recently spread beyond a few schools. Educated Antilleans who are likely to read novels and other works in *Kréyòl* (e.g., by the *créolité* writers) are literate in French. Guadeloupeans to whom I spoke in Guadeloupe often commented on the foreign-looking *k* and *w* they saw in written *Kréyòl* (reflective of GEREC conventions), which are not commonly written in French. Furthermore, many question the efforts of *Kréyòl* promoters, including the need to develop a separate, phonemic orthography. *Kréyòl* is nonetheless appearing more and more in print in a variety of contexts and for a variety of purposes. When *Kréyòl* is written today, some people do use the orthography proposed by GEREC, or a close approximation to it, but many others use different writing strategies. There are signs, though, that the GEREC orthography is slowly being accepted. As I will demonstrate, the very letters that Antilleans are most likely to point out as being 'strange' are the ones that are used most consistently and are also now used as emblems of contemporary Guadeloupean popular culture, as seen in youth culture and marketing.

7.1 *Kréyòl* texts

During a total of twenty-six months of fieldwork in Guadeloupe between 1998–2007, I have compiled a wide variety of examples of written *Kréyòl*. Although *Kréyòl* is not seen widely in print – the vast majority of writing is still in French – the variety of *Kréyòl* writing examples is noteworthy. The most prominent use of written *Kréyòl* is political graffiti – often containing the tag of the independentist group KLNG (*Konvwa pou Libérasyon Nasyonal Gwadloup*, 'Collective for the National Liberation of Guadeloupe') – calling for Guadeloupean independence, for the metropolitan French and/or *békés* to leave or urging Guadeloupeans to support specific union activities. For instance, between 1998–2001, I saw graffiti in French directed at the metropolitans such as "*Français vous n'ëtes pas chez vous*" ('French you are not at home') and "*blancs dehors*" ('whites get out'). Graffiti in *Kréyòl* directed at the local population includes messages such as "*Tansyon péyi-la envayi*" ('Beware, the country has been invaded').

But *Kréyòl* is also seen in ads, in flyers, on assorted printed or handwritten signs, in CD liner notes, on public service posters, in academic journals, in titles written on the few *Kréyòl*-language television programs, or in titles or quotes in newspapers. Most often it appears along with or in alternation with French (the most common strategy), or in separate 'bilingual' versions (the strategy used most often by *Kréyòl* language planners). The use of *Kréyòl* in these contexts indicates that *Kréyòl* texts are aimed at – and even written by – a wide variety of *Kréyòl*-speakers, not just the small number of people on the island who have training in writing *Kréyòl*. At this point in time, though, the authority over how *Kréyòl* is to be written is still effectively in dispute, and discussions over writing *Kréyòl*, which take place most often among activists and the well-educated, are tied up with conflicting visions of what *Kréyòl* is and what it should be, as well as what Guadeloupe's place in the world is and should be.

In this section, I look at texts I collected during my fieldwork that include written *Kréyòl*. These examples demonstrate how similarities and differences between the visions of *Kréyòl* held by *Kréyòl* language planners and other Guadeloupeans manifest themselves in the different strategies used for writing *Kréyòl*. My data sample for this article consists of sixty texts. These include flyers, signs, public service posters, CD liner notes, graffiti, event program booklets, newspaper articles and letters to the editor. Only a small percentage of texts written in *Kréyòl* found in Guadeloupe use the GEREC orthography. Most texts use more variable writing strategies that often resemble French orthography, clearly departing from the ideology of *déviance maximale*. These texts often contain code-switching or only a line or two of *Kréyòl* in a French text (e.g, Sebba 2000; Winer 1990). The few that used the GEREC system consistently were generally written by someone directly involved with *Kréyòl* language planning. Examples include a promotional flyer for a book written by Guadeloupe's most well-known language activists, Hector Poullet and Sylvian Telchid; another example is the text chosen for the televised 1999 *dictée* ('dictation contest', discussed in more detail below), or the titles of the television program *Koud Zyé* (see Managan 2004 for details) and a pamphlet for the Bettino Lara Caribbean multimedia library written in several languages (for which Poullet wrote the *Kréyòl* portions). Figure 2 shows a copy of an excerpt from the library pamphlet.

This text is written in four languages (French, English, *Kréyòl* and Spanish), considered by the authors to be the four languages of the Caribbean. One should note that the *Kréyòl* text contains several words written in French, set off with quotation marks ("*Pères des Carmes*", "*Magasin du Roy*", "*magasin général*", "*Imprimerie Officielle*"). The words "*Magasin du Roy*", "*magasin général*" are also written in quotes in the French version of the text, but the other two are not. Since these words are all written in French in the *Kréyòl* text, the use of quotation marks is significant as it highlights the fact that these are words in another, separate language. In the English version of the text, these are all translated. In other non-GEREC texts, such as those that that include code-switching or bivalent items, the separateness of French and *Kréyòl* is not always maintained and the boundaries between the two languages are sometimes blurred.

Le Bâtiment

FRANÇAIS

A quelques encablures du lycée Gerville Réache, de l'Eglise des Carmes et du Fort Delgrès, la Médiathèque Caraïbe se situe au cœur du quartier historique du Carmel à Basse-Terre, chef lieu de la Guadeloupe.

L'architecture militaire du bâtiment reflète la vocation de tout le site du Carmel créé aux environs de 1650 par Charles Hoüel de Petit-Pré.

A l'emplacement de la première église des Pères des Carmes détruite vers 1759, la colonie implante le "Magasin du roy". Le bâtiment est figuré pour la première fois sous le n° 13, sur l'Atlas des établissements militaires de décembre 1889. Sa forme caractéristique en fer à cheval et sa disposition ne trompent pas. A l'époque il devient "Magasin général". Il abrite alors le parc à boulets et les bureaux de l'intendance.

En 1891, l'Imprimerie du Gouvernement y fut installée. En 1930, elle devient Imprimerie Officielle. La totalité des actes administratifs et réglementaires de la colonie y était alors imprimée. Les activités de cet organisme furent interrompues en 1969.

L'édifice se dégrade considérablement. Il héberge encore provisoirement les services de la DASS et de la Poste. C'est en 1995 que le Conseil Général rend effective sa volonté de sauvegarder le bâtiment.

Sa réhabilitation fut réalisée par l'architecte Jean-Claude Pancrassin dans le respect de l'esprit des lieux.

Installée en 1997 et baptisée du nom de Bettino Lara, dernier directeur en exercice de l'Imprimerie Officielle, la Médiathèque Caraïbe offre un cadre agréable à ses visiteurs et à son personnel.

8

KRÉYOL

Bik-kaz-la

Batiman otila Médyatèk Karayib-la yé la, ka touvé-y toupré Lisé Gerville Réache, pa lwen Légliz Carmel é pa sitèlman lwen Fò Dèlgrès ; kivédi an plen-mitan vil Bastè ola, prèmyé vil gwadloup, vwè jou.

Asi konstriksyònman a batiman-lawmé lasa, ou ja ka vwè poukisa Charles Houel de Petit-Pré pasi 1650, té konswa tout kawtyé Karmèl-la .

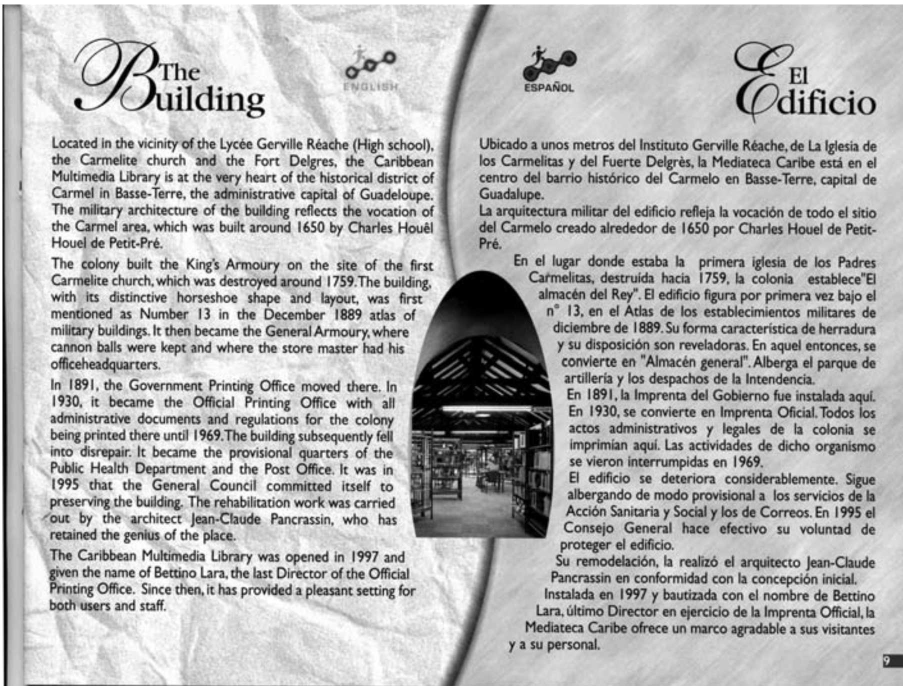
Okomansman té ni prèmyé légliz a sé Pè-la yo té ka kriyé : " Pères des Carmes ". Légliz-lasa touvé krazé pasi 1759 kifè asi lanplasman a-y yo konstrui batiman-lasa té ka touvé-y " Magasin du roy " . Asi granliv dokiman a tout batiman-lawmé yo mété dèwò an 1889, ou ka vwè-y parèt pou prèmyé fwa èvè liméwo 13. I ni on fòrm èspésyal ka sanm on fè a chouval kifè pa ni mwayen pa woukonnèt-li. An tan-lasa i té ka sèvi " Magasin général ", sé la yo té ka mété boulfè- kannon atoupannan té ni amenmtan biro finans é pwovizyonnman.

Sé menm koté-la yo mété an 1891 Enprimri a Gouvèlman yo kriyé an 1930 " Imprimerie officielle ". Sé la tout lak-lamistrasyon, tout règlèman a koloni Gwadloup té ka enprimé jis an 1969.

Lèwgadé adan tousa, batiman té ja konmansé dègrenné bon dégrenné-la. Kanmensa yo fè-y sèvi pou kèk tan ankò biro a la DASS èpi anmenmditan ta Lapòs. An 1995 Konsèy Jénéral désidé, poubon, fo té sové moniman-lasa .

Sé Jean-Claude Pancrassin on architèk, ki san dérèspèté batiman-la é lanviwonnaj a-y ki wou nèfté-y.

Kifè, dépi 1997, sé la Médyatèk Karayib-la ka touvé-y. On koté ola moun ka travay pou Médyatèk-la menmjan ki moun ka vin la pou li, obenswa pou chèché, toutmoun ka touvé sé on koté plézab pou woulé. Yo ba Médyatèk Karayib-la non a misyé Bettino Lara poudavwa sé-y dènyé dirèktè a Enprimri ofisyèl-la ki dirijé-y.



The Building

ENGLISH

Located in the vicinity of the Lycée Gerville Réache (High school), the Carmelite church and the Fort Delgres, the Caribbean Multimedia Library is at the very heart of the historical district of Carmel in Basse-Terre, the administrative capital of Guadeloupe. The military architecture of the building reflects the vocation of the Carmel area, which was built around 1650 by Charles Houêl Houel de Petit-Pré.

The colony built the King's Armoury on the site of the first Carmelite church, which was destroyed around 1759. The building, with its distinctive horseshoe shape and layout, was first mentioned as Number 13 in the December 1889 atlas of military buildings. It then became the General Armoury, where cannon balls were kept and where the store master had his officeheadquarters.

In 1891, the Government Printing Office moved there. In 1930, it became the Official Printing Office with all administrative documents and regulations for the colony being printed there until 1969. The building subsequently fell into disrepair. It became the provisional quarters of the Public Health Department and the Post Office. It was in 1995 that the General Council committed itself to preserving the building. The rehabilitation work was carried out by the architect Jean-Claude Pancrassin, who has retained the genius of the place.

The Caribbean Multimedia Library was opened in 1997 and given the name of Bettino Lara, the last Director of the Official Printing Office. Since then, it has provided a pleasant setting for both users and staff.

ESPAÑOL

El Edificio

Ubicado a unos metros del Instituto Gerville Réache, de La Iglesia de los Carmelitas y del Fuerte Delgrès, la Mediateca Caribe está en el centro del barrio histórico del Carmelo en Basse-Terre, capital de Guadalupe.

La arquitectura militar del edificio refleja la vocación de todo el sitio del Carmelo creado alrededor de 1650 por Charles Houel de Petit-Pré.

En el lugar donde estaba la primera iglesia de los Padres Carmelitas, destruida hacia 1759, la colonia establece"El almacén del Rey". El edificio figura por primera vez bajo el n° 13, en el Atlas de los establecimientos militares de diciembre de 1889. Su forma característica de herradura y su disposición son reveladoras. En aquel entonces, se convierte en "Almacén general". Alberga el parque de artillería y los despachos de la Intendencia.

En 1891, la Imprenta del Gobierno fue instalada aquí. En 1930, se convierte en Imprenta Oficial. Todos los actos administrativos y legales de la colonia se imprimían aquí. Las actividades de dicho organismo se vieron interrumpidas en 1969.

El edificio se deteriora considerablemente. Sigue albergando de modo provisional a los servicios de la Acción Sanitaria y Social y los de Correos. En 1995 el Consejo General hace efectivo su voluntad de proteger el edificio.

Su remodelación, la realizó el arquitecto Jean-Claude Pancrassin en conformidad con la concepción inicial.

Instalada en 1997 y bautizada con el nombre de Bettino Lara, último Director en ejercicio de la Imprenta Official, la Mediateca Caribe ofrece un marco agradable a sus visitantes y a su personal.

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Figure 2. LAMECA library pamphlet excerpt

In this chapter, I focus on examples that indicate differences between the phonemic GEREC orthography and commonly used more variable, more etymological writing strategies, because these are most common in my data. These are not standardized in any way and, although they contain some commonalities, the conventions used in them tend to vary between texts and even within texts. I feel that their authors do seem to be aiming more at the GEREC script as a target, since texts written during my fieldwork include features of the GEREC orthography that one does not find in older texts written before the GEREC orthography was developed and publicized (see Hazaël-Massieux 2001 and 2005 for detailed discussions of the orthographies used in early texts in *Kréyòl*). These texts were written by professional and amateur writers, journalists, independentists and others (authorship unknown). In these examples, I highlight different strategies for representing sounds such as /w/, /k/ and the "open o" /ɔ/ and for representing grammatical relations such as the apostrophe. I focus on specific conventions that diverge from GEREC guidelines, but also highlight which GEREC conventions are commonly followed. For each section, I have underlined examples of the features being discussed. GEREC conventions are also noted for each example.

7.2 Varying diacritics with o: grave accent vs. circumflex

While certain GEREC conventions, such as those for *k* and *w,* which I discuss below, seem to have achieved some acceptance, other conventions that are generally not the subject of metalinguistic commentary are not widely taken up in usage. A common example of how written *Kréyòl* diverges from the GEREC orthography is the use of the circumflex in the place of the grave accent as in è, especially with *o*.[14] Whereas the GEREC system uses *ò*, and texts I collected did have examples of this convention, in non-standard written texts, the open o is often either written without any accent, or, more commonly, it is written with a circumflex, just as in French (*ô*). Indeed, the circumflex seems to hold a special place in the hearts and minds of the French as well as those colonized by them (Jaffe 1999; Schieffelin & Doucet 1994). In fact, few languages besides French use the circumflex (Romanian is one example), and the use of the circumflex is strongly associated in many people's mind with something specifically French. The written texts I collected indicated that the use of the circumflex is very common and is likely considered by many Guadeloupeans to be the correct way of writing *Kréyòl*. An early example of *ô* in my corpus is the slogan of the group ACRA quoted above: '*tout sa qi créôl sé tan nou*" ('that which is Creole is ours'). Early texts in *Kréyòl* analyzed by Hazaël-Massieux also include examples of the *ô*.

An example of *ô* from 1999–2001:

(1) *En pa vlé mô si la wout* ('I don't want deaths on the road') – Poster for highway safety, from the Guadeloupean regional government
In GEREC this would be *An pa vlé mò si (la)wout-la*

14. This is also true for *a* and *e*. I found no examples of *î* or *û* in my data.

An example of the use of *ò* (following the GEREC orthographic convention):

(2) *Epi vitès kolon débakyé, yo réyisi envayi toupatou, é près pa rété KARAYB encò* ('With the speed with which the colonists debarked, they succeeded in invading all over, and there remained hardly any Caribs') – a description of the early history of Guadeloupe in a Guadeloupean booklet in French and *Kréyòl*, a bilingual text, apparently written for tourists, purchased in 1998 (Poux 1995)[15]

(3) *Fò sòti an kabann pou vwè jou lévé!* ('You must get out of bed to see the day break') – in the title section of an independentist paper, *Nasyon Gwadloup* (Jan/Feb 2000)[16]

An example of *o* (where GEREC would use *ò*):

(4) *Tou pré kaz a zot* [original written in all capital letters] ('Right by your house') – from an ad for a bakery (Epicentre), with the rest of the text in French
In GEREC this would be *Tou pré kaz a zòt*

In the following example we can see that the writer alternates between the use of *ô* and *ò*:

(5) *Men an pé ké mò tousèl, jôd la! Pawôl a zéli!* ('But I will not die alone this day, Zeli's word') – comic strip in *Kréyòl* language 'zine, *Migan* (Duport 2002: 12)
In GEREC this would be *Men an pé ké mò tousèl jòdi-la, Pawòl a zéli!*

7.3 Examples of the apostrophe

Kréyòl texts evidence intriguing uses of the apostrophe. As noted above, at the time of my research, GEREC only suggested the use of the apostrophe for abbreviations, but this has since changed. While I found this in some texts, I observed that the apostrophe is often used in place of the hyphen to mark grammatical linkages. For example:

(6) *Chak kout pédal i fè on chanté ka pran'y* ('each time he pedaled a song came over him') – from a folktale printed out and given to me by a consultant who was not the author of the tale
In GEREC (at the time the text appeared) this would be *Chak kout pédal i fè on chanté ka pran-y*

15. I am not sure who the targeted audience is for this publication. Presumably, a Guadeloupean would be familiar with the information included. Perhaps it is written for Martinicans, Saint Lucians, Dominicans or even Haitians.

16. This paper is written mainly in French with *Kréyòl* titles, but contains a few phrases in *Kréyòl* in the articles and one segment about the organization's aim entirely in *Kréyòl*. The organization that publishes this is connected to the group KLNG.

The apostrophe is also often use indicate nasalization[17] (to note a nasalized vowel followed by a nasal consonant), for example:

(7) *Kan'nida* – name of *gwo ka* traditional drumming group (from CD liner Kan'nida 2000)
In GEREC this would be *Kannida*

The previous examples in this section show how the apostrophe is used in written *Kréyòl* in ways that diverge from French conventions, but which do not represent influence from French conventions. The apostrophe may also note the absence of letters that would exist in the French version of the word, thus indicating reference to French orthographic conventions (e.g., Jaffe 2000; Sebba 1998, 2000; Winer 1990):

(8) *on ti tou a bicilett' épi tout moun*[18] ('a little bike ride with everyone') – title of an article in France Antilles 7/13–14/00
In GEREC this would be *on ti tou a bisiklèt épi tout moun* [19]

In written *Kréyòl,* I also found that the French singular definite article which has been attached to the *Kréyòl* noun through agglutination is represented with an apostrophe to set it apart from the main noun, reflecting a French spelling.[20] For instance:

(9) *L'Auto en mwen, séy ki pli bèl* ('My car, it's the one that is the most beautiful') – automotive parts ad (one mentioned in anecdote at beginning of chapter)
In GEREC this would be *lòtò an-mwen, sé'y ki pli bèl*

7.4 Examples of k and w

My examples indicate that despite many Guadeloupeans' comments about the strangeness of *k* and *w* – or perhaps because of them – most texts represent /k/ and /w/ as the GEREC system requires.[21] Some, however, choose to use more French-influenced ways of writing these sounds. Older written texts in *Kréyòl* are most likely to use French-influenced conventions, often using a variety of different conventions for

17. Perhaps influenced by a variation of the Pressoir orthography for Haitian Creole (see Schieffelin & Doucet 1994 :185).

18. Note also the use of c for /s/.

19. The French word is *bicyclette*.

20. I did not see examples like *z'anmi* ('friend'), where the French plural definite article has been incorporated into the *Kréyòl* word. Also, in my observations, words where the article has been incorporated into *Kréyòl* and where the French stem is not vowel-initial are never written in *Kréyòl* with an apostrophe or a hyphen. Thus, one does not see something like *di-ri la* or *di ri'la*.

21. Irvine (1997) and Schieffelin and Doucet (1994) discuss negative reactions to these letters in other former French colonies.

representing the sound /k/. One example of a poem written in 1973 had the sound /k/ written with *c*, *k* and *qu*:

(10) *Vélo ka cassé quà* ('Vélo [name of a famous traditional drummer] is breaking his drum, really playing it hard') – from a poem by Guy Cornély
In GEREC this would be *Vélo ka kasé ka*

While Cornély chooses to write the word *ka* ('drum') with *qu*, it is difficult to imagine that anyone in Guadeloupe today would think of writing *gwo ka* (a type of traditional drumming) any other way than using GEREC conventions. *Gwo ka* drumming was taken up by Guadeloupean activists and independentists as one of the main icons for Guadeloupe identity along with *Kréyòl*, and the term is now commonly seen in print. Another early example of multiple French-influenced strategies for writing /k/ comes from the slogan of the group ACRA:

(11) *tout sa qi créôl sé tan nou* ('that which is Creole is ours') – (cited in Chamoiseau & Confiant 1991)
In GEREC this would be *Tou sa ki kréyòl sé ta(n)'nou*

Other examples are more recent:

(12) *Dé wou, pridens! Véyé cô aw!* ('two wheelers, be careful! Watch out for yourselves!' lit. 'watch out for your body!') – road safety pamphlet urging bicyclists to practice safety measures
In GEREC this would be *Dé wou pridans! Véyé kò a'w!*

The sound /w/ is normally written today following GEREC guidelines, with *w*. In the previous example, for instance, the word *wou* is written with a *w*. Other examples can be found in the CD liner notes for a CD by a local *gwo ka* group (Kan'nida 2000), which use *w* for /w/ in most cases.[22] The transcribed lyrics even contain a few technical terms taken from French and English but written in a way that reflects a local pronunciation, in which the French /ʁ/ is sometimes pronounced more like /w/, even when not followed by /a/, /o/ /u/; these words include *owdinatè* (Fr: *ordinateur*, 'computer') and *entewnèt* (Fr and Eng: internet).[23] But /w/ is also occasionally written *ou*, as it is in

22. In the lyrics for one song the word *konpwann* ('understand') is spelled *konprann*, even though the singer consistently pronounces it with the /w/.

23. In this particular instance, it is hard to tell how the singer pronounces these words, because he is singing over the music of several drums. It is possible, though, that he did pronounce these words with /w/ or something close to it. I have heard Guadeloupeans pronounce something like /w/ before a consonant in some words. I did not conduct detailed linguistic analysis of this pronunciation, but based on my own impressions and the comments of Guadeloupean consultants, it is clear that the pronunciation of such words includes a sound that is not the French /ʁ/. That is to say, while Guadeloupean may not pronounce exactly /w/ in a word like *owdinatè* or *kawtyé*, they do not pronounce the French /ʁ/ in its place and they also do not simply say /ɔdinatɛ/ or /katie/.

French. In early texts this was common. An early example of /w/ written as *ou* is a phrase in a book by Dany Bebel-Gisler. In this example *w* is used also:

(13) *Sé la an vouè papa zanfan an mwen* ('It was there I saw the father of my children') – from Bebel-Gisler (1985: 34)
In GEREC this would be *Sé la an vwè papa zanfan an'mwen*

While more recent texts use *w* for /w/, some do still use *ou*. An example from 2000 is:

(14) *Dansé, Chanté, Konnyé, évé plèsi é bonè. Sé sa nou ka souété'w*[24] – ("Dance, sing, drum with pleasure and happiness. That is what we wish you') – flyer for the year-end recital for a traditional dance and drumming school
In GEREC this would be *Dansé chanté kognyé évé plèsi é bonè. Sé sa nou ka swété'w*

Regarding the representation of the sound /w/, sometimes words are written with *r*, instead of *w*, reflecting similarities between *Kréyòl* words and their French complements – which would be an instance of etymological orthography rather than phonemic orthography, which reflects pronunciation (e.g., Restog n.d.; Schieffelin & Doucet 1994; Winer 1990). For example, in a quote from *France Antilles* 8/3/03, there is the word "*prop*" ('clean'), but most likely the man quoted using this word actually pronounced it as *pwòp* (the GEREC spelling), since nearly all Guadeloupeans pronounce /w/ in front of an *o*, or an open o, when speaking *Kréyòl* and sometimes when speaking French.

As the above examples indicate, the letters *w* and *k* are common in written *Kréyòl*, whatever the source. As Schieffelin and Doucet (1994: 177) point out, "[l]anguage ideology often determines which linguistic features get selected for cultural attention and for social marking, that is, which ones are important and which ones are not." These letters have been singled out in Guadeloupe for ideological elaboration and have been taken up by some Guadeloupeans as distinctive markers of local identity.[25] Indeed, words written with *w* and *k*, especially the term "*Gwada*" for Guadeloupe, are quite popular, even trendy; they are seen in ads, product and company names and writing by and/or aimed at Guadeloupean youth.[26] Examples of uses of the term *Gwada* from my data include:

(15) *Gwadavenir* – the name of an association, discussed in *France Antilles* 8/14–15/00

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24. Note that the *w* also represents the personal pronoun "ou" /u/ in this sentence.

25. The letter *k* is similarly used in other minority languages to mark a distinction from a dominant language with which it is associated. See, for instance, Hornberger (1995) for Maya and Sebba (1998) for British Creole. It has been similarly used in the United States by African American artists and participants in the black power movement, in words like *Afrika*.

26. On recent trips to Guadeloupe, I have also heard a new variation, *Gwadada*, which may have originated in the lyrics of Admiral T's song of the same name.

> *Rando Gwada* – an adventure race organized to celebrate Earth Day 2001, seen on a flyer
> *Jèness Gw@da, nou kay mèt sa o!* (Guadeloupean youth, we're going to put that in place, oh [emphatic]!) – from a flyer for a youth group meeting, written 8/28/00

The use of the @ symbol in the word "Gw@da" is of particular interest in understanding the symbolic meaning of the term. As mentioned above, the term *Gwada* is closely associated with cool Guadeloupean youth culture. The use of the @ symbol adds to this image of coolness (cf. Bucholtz 1997, 2001; Buszard-Welcher 2001: 337–38; Guardado 1997: 58; Eisenlohr 2004: 13 on language and coolness in youth culture), as it is used in French and *Kréyòl* only in e-mail addresses. I suggest here it indexes contemporary, internet-savvy youth culture. Indeed, in another flyer given out at the same meeting, the e-mail address of the organizer is given. This is significant because few people I worked with in Guadeloupe had internet access or an e-mail address at the time of my dissertation fieldwork. Fewer still had a computer. Only one ISP provided internet access on the island and it was expensive, slow and unreliable. The only internet cafés were in tourist centers; most schools did not have internet access. Internet access was, however, provided at youth centers run by town governments. Today, municipal computer centers have been opened in some towns. Although open to the entire public, they attract mainly youths.

Another name for Guadeloupe is *Karukéra*, from the Carib name the island was called before Columbus renamed it (which meant 'land of beautiful waters'). This name is used especially in product and company names. The Guadeloupean telephone book for 2000, for instance, lists five companies in the town of Abymes whose names draw on the word *Karukéra*: *Karu Médicale*, *Karuk'Auto*, *Karuk Construction*, *Karukéra Car*, and *Karukéra Transit*. Words with *ka*, either meaning 'drum' or the preverbal imperfective marker, are also common. A company that rents items for construction in the town of Jarry, for instance, was called *K'Loué*. The *k* here would be pronounced /ka/ because that is the name of the letter and thus could be read as the preverbal imperfective marker *ka*. Here the apostrophe indicates that the letter *a* is missing from the word *ka*. The word *loué* is a *Kréyòl* verb for 'rent'. Thus, the name of the company translates to something like 'is renting' or 'rents/does rent (habitual)'. Sainton (2000: 110) suggests that the popularity of words with "*gwa*" and "*ka*" represent a reinvestment in African sounds, spurred by a valorization of local culture and re-understanding of its origins. I do not completely agree with this suggestion. Most of my consultants did not recognize the African origin of elements of *Kréyòl*. If anything, the *w* and *k* were thought to come from English. But, I do think that the use of *w* and *k* serves to highlight the non-French aspects of Guadeloupean culture, which is part of the valorization of local culture. These letters are distinctively Guadeloupean and *Kréyòl*. This is also what GEREC members had in mind when designing the orthography for *Kréyòl* the way that they did.

8. Reactions to written *Kréyòl*: Struggles over authority and reluctant acceptance

The development of an orthography for a lesser-used language may be carried out for different purposes by different people. Linguists (locals or outsiders), teachers, writers and activists may play a role in deciding the form that an orthography takes and the language variety that it is designed to represent, either with or without input from the wider public. These choices may include practical considerations (what characters may be used with existing printing technologies), but letters, diacritics, and other markers often have important indexical values (e.g., Brown 1993; Hornberger 1995; Jaffe 1999, 2000; Powers 1990; Schieffelin & Doucet 1994; Sebba 1998, 2000; Winer 1990).

Ideologies of language, identity and literacy thus come into play in debates over orthography. Since many different people may be involved in this process – all with differing opinions of how the language should look and which variety of the language should be used in deciding what the base phonology is that the orthography will represent – orthographic debates often represent multiple language ideologies (Schieffelin & Doucet 1994). In the end, the public must accept any decision that is made about an orthography if it is to succeed. For this to happen, the authority of an orthography (and consequently, those who developed it) must be recognized. When orthographic conventions are initially being developed, this authority is often tenuous and may even be contested. This has been the case with the GEREC orthography.

> Lambert-Félix Prudent, a Martinican scholar who was once involved with GEREC, later criticized GEREC's program: "GEREC's entire effort rested on the valorization of Creole through writing according to a model that was, in the end, very French: it was a matter of inventing an alphabet, of spreading it through systematic usage in schools with the aid of manuals and various instructional methods" (Prudent 1993: 144).[27]

Prudent (1989, 1993, 2003) notes that small-scale, individual efforts to write *Kréyòl* in ads, in comic books, and in the flyers of zouk bands have been much more successful than GEREC's efforts. Unlike GEREC's efforts, these non-elite, non-academic attempts at writing *Kréyòl* use a much more variable orthography, based on etymology, which did not differ greatly from French. These texts also draw from and mix fluidly with French. Here Prudent's observations are in line with my data.

A variable orthography is certainly not the most practical or useful from a pedagogical point of view and, as Jaffe (2000: 506) points out, it "[undermines] the non-standard language's claims for linguistic parity with dominant codes". However, variable writing conventions for *Kréyòl* are what one most commonly sees. Nonetheless, the GEREC orthography and associated efforts to promote a standard written *Kréyòl* have had some limited success in recent years. The existence of books and classes in *Kréyòl*,

27. This is similar to what Jaffe (1999) says about Corsican language planners.

moreover, has had exactly the effect that GEREC wished: most of my Guadeloupean consultants now see *Kréyòl* as a language in its own right and point to the existence of scholarly works on *Kréyòl* as evidence of this.

Marie-Christine Hazaël-Massieux (1993) – a French linguist and creolist (and the widow of Guadeloupean linguist and creolist Guy Hazaël-Massieux) – has also written about the choice of the GEREC orthography. Like Prudent, she concluded that the audience which *Kréyòl* language planners are trying to reach may not respond positively to their efforts because the public is not literate in *Kréyòl* (see Winer 1990 on the advantages and disadvantages of etymological and phonemic orthographies for English-lexicon creoles in the Caribbean) and the genre that the language developers are promoting (first and foremost, literature in *Kréyòl*) is not what the public is familiar with or valorizes. She notes, however, that the GEREC orthography has influenced ideas of how *Kréyòl* should be written even though Guadeloupeans she surveyed in 1984 indicated they did not prefer most GEREC spelling conventions.[28] She also suggests that GEREC's Martinican focus is influencing language use in Guadeloupe as previously exclusively Martinican pronunciations and lexemes are coming to be used in Guadeloupe (Hazaël-Massieux 2000: 52). Hazaël-Massieux (1993 :90) is very critical of GEREC's propositions, suggesting they seek to impose a particular variety of *Kréyòl* on Antilleans through their orthography while claiming that they use a scientific approach.

Not surprisingly, Hazaël-Massieux has been criticized in turn, particularly because she is seen as an outsider since she is from metropolitan France, is not of Antillean descent, and is based at the University of Aix-en-Provence. Confiant (2001) denounces the views of certain non-native researchers who have been especially critical of GEREC. He also makes clear that the promotion of the GEREC orthography, and of writing in *Kréyòl* more generally, should not be seen as an effort to force speakers to speak a certain way (although if GEREC's efforts were to slow or stop decreolization, it would be for the better). He defends the motivations for an orthographic representation of *Kréyòl* based on *déviance maximale* and notes that the difficulties of establishing this orthography were well known to GEREC activists.

Since *Kréyòl* has been primarily an oral language and was not widely taught in Guadeloupean schools until 2002, print media in *Kréyòl* have a restricted audience. Notable publications that have insisted on a *Kréyòl*-only policy have not attracted a large audience. An obvious reason for this is lack of literacy in *Kréyòl*.[29] The divergence between *Kréyòl* language planners' goals and the concerns of other Guadeloupeans

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28. But she notes also that ads use the orthographic conventions that people prefer (Hazaël-Massieux 1993: 98, fn 95).

29. One newspaper, *Lendépandans*, uses *Kréyòl* in its headlines but not in its articles, for exactly this reason: "Written Créole, therefore becomes a code restricted to the elite and the paper wants to attract all sectors of the population not only the intellectuals and the well-informed, politically sophisticated public" (Ruprecht 1990: 225).

becomes particularly obvious when it comes to writing *Kréyòl*. Unlike the use of spoken *Kréyòl* in the media (Garrett 2000, 2007; Managan 2004), written *Kréyòl* presents a significant break with previous convention. *Kréyòl* has traditionally been an oral language (Hazaël-Massieux 1993; Ludwig 1989) and the orthographic representation chosen by Antillean language activists draws not on the literacy skills Guadeloupeans already have but instead uses the form of written *Kréyòl* to forge links with other communities where a French-lexicon creole is spoken.

Given the politicization of the language issue in Guadeloupe and the practical difficulties of learning new orthographic conventions, reactions to written *Kréyòl*, as I offered at the beginning of the chapter, have not generally been positive. All but the *Kréyòl* language planners who promote writing *Kréyòl* highlight the difficulty of writing *Kréyòl* correctly (i.e., consistently according to GEREC conventions) and several of my informants said that it was pointless to learn to do so since they already had literacy skills in French and, besides, French can appeal to a wider, international, audience (cf. Hazaël-Massieux 1993).

In seeking to create a written standard of *Kréyòl*, based on basilectal *Kréyòl* written in an orthography quite distinct from French, activists risk inadvertently distancing themselves from the very speakers whose language they are using as a model (speakers of *gwo kréyòl*). These speakers are, after all, mainly older *Kréyòl* monolinguals who often did not learn French in school and thus do not have literacy skills at all. Those who master the GEREC orthographic system are most often educated and/or young (and thus more likely to speak Frenchified *Kréyòl* in everyday contexts). Of course, this is only one aspect of language promotion in Guadeloupe and activists such as Bebel-Gisler have made efforts to help *Kréyòl* monolinguals gain literacy skills (and then French language and literacy skills). Also, giving Guadeloupean youth a means to develop and display their skills in *Kréyòl* is significant since they often feel (and are told) that they don't speak *Kréyòl* well. But the unequal distribution of the knowledge of *Kréyòl* orthographic conventions along generational and socioeconomic lines plays a role in resistance to written *Kréyòl* and *Kréyòl* language classes more generally. When I discussed the *Kréyòl* classes offered at the local teachers college with one consultant in 2001, for instance, she suggested that only those of a certain class would attend those courses, and that *Kréyòl* risked becoming seen as a "*langue huppée*" ('chic elite language'). Confiant (2001: 7–8) addresses the issue of elitism in a book of *Kréyòl* neologisms, aimed at writers. In countering criticisms that GEREC's efforts are overly attached to the past (i.e., *passéiste*), he replies that it would be closer to the truth to call them elitist, because rather than focusing on the *Kréyòl* spoken by sugarcane cutters, they attempt to create a new *Kréyòl*, a *créole savant* ('scholarly *Kréyòl*').

Despite some negative reactions, however, written *Kréyòl* is gaining ground in Guadeloupe, particularly now that it has been approved for use in schools. A few of my adult consultants expressed a desire to learn to write *Kréyòl*, for instance. And those who win *dictées* ('dictation contests') are lauded for their skill. One factor in the acceptance of the GEREC orthography is the fact that it draws on the authority of the school

(a French model of authority in language matters). I noticed, for instance, that when Guadeloupeans unfamiliar with GEREC conventions saw something written in *Kréyòl*, they assumed it was written by someone who knew the correct way to write it and thus assumed that whatever was in print was correct and adhered to some standard. There is little awareness that *Kréyòl* is not written in a consistent manner or that there is and has been a debate among scholars about how it should be written. When I spoke with the participant (and third-place winner) in one *dictée*, however, he did raise this issue, and he expressed resigned frustration over it.

The fact that *dictées* exist and are reported on in the local news reinforces the impression that *Kréyòl* has an established standard form and an established orthography (e.g., Jaffe 1999). Guadeloupeans do not speak as though there are alternative ways of writing or that they themselves could influence the way that *Kréyòl* is written. In fact, the changes in GEREC conventions in 2001 suggest that others' opinions were taken into account. Thus, the public debate about written *Kréyòl* is not about how *Kréyòl* should be written exactly, but about whether or not people like the way it is written or feel that they can or would want to learn how to write it. I suggest that conflict over the writing of *Kréyòl* is easing, however, as more Guadeloupeans gain access to knowledge of the orthography.

9. Conclusions

Hazaël-Massieux (2001) argues that an orthography for *Kréyòl*, or any language, should represent the *langue*, in Saussure's terminology, but I content that orthographic choices are always ideological. As Jaffe (1999: 216) points out:

> Orthographies are never simply transparent vehicles for getting a language down on paper; they are selective representations of linguistic form in a language that always (implicitly or explicitly) invoke a comparative framework. That is, orthographies by definition symbolize, naturalize and legitimize differences and/or similarities of a cultural or political origin.

I agree with Hazaël-Massieux that the GEREC choice for an orthography has an ideological basis and has not been easily accepted by the Antillean public, but I do not agree that any other choice would be any less ideological.

Fenigsen notes that the codification of a standard language often accompanies the creation of a modern nation-state, as discussed in Anderson (1983) and Bourdieu (1991), but points out that the recognition of the legitimacy of the standard language by speakers of other varieties can be problematic (Fenigsen 1999: 62; Silverstein 1987). Although Guadeloupe is not independent, we see the same problem with written, standardized *Kréyòl* there. In the case of the GEREC orthography, initially there were many critics, but today most scholars have accepted it. However, its acceptance and adoption for use by the public is still uncertain (as pointed out in Hazaël-Massieux 1990 :32).

In this chapter, as in Managan (2004), I have detailed the major underlying issues in this conflict. Written *Kréyòl* serves as the emblem of a distinctive French West Indian identity for *Kréyòl* language planners, but for others simply as a tool to allow them to express themselves in a language they commonly speak, whether they wish to express Guadeloupean identity or something else in it, such as another aspect of the identity or one of the associations that *Kréyòl* brings to mind. GEREC's focus on a separate orthography for *Kréyòl* presents an obstacle to those who already have literacy skills in French. GEREC's vision of a pure *Kréyòl* as an ideal, moreover, is at odds with the current linguistic reality of the island. But, that is the point: they would like to change the current linguistic reality. Change is often uncomfortable. For others who write in *Kréyòl*, this is not their primary concern in writing. They use *Kréyòl* to express themselves, and in doing so, often represent the heterogeneous language practices common in Guadeloupean speech in their writing, which includes code-switching, interference and Frenchified *Kréyòl*. The vision of Guadeloupean identity presented through this writing is thus also heterogeneous.

The GEREC system is the orthography being taught in schools and other classes today and is used in texts written by activists connected with GEREC. The majority of written *Kréyòl* one sees in Guadeloupe, however, is not in schools or GEREC-authored texts. It is instead seen in ads, flyers and graffiti and uses variable orthographic conventions as I have described. Certain features of the GEREC system seem to be gaining ground (e.g., '*w*', '*k*'), despite negative comments about them. They are the ones that are seen as the least "French", the most identifiably "Creole" (see Hazaël-Massieux 1993). These are features that are seized upon for ideological elaboration. Different diacritics, on the other hand, are rarely commented on, and the use of the GEREC conventions for them varies greatly in actual practice. In the end, no matter which orthographic representation is used, Guadeloupeans usually understand written *Kréyòl*, even if they consider it strange-looking at times and find reading long passages cumbersome. It remains to be seen what will happen now that *Kréyòl* literacy education is becoming more widespread. For now, views on *Kréyòl* writing are ambivalent, but the most contested features seem to be gaining ground and are even mobilized as emblems of Guadeloupean identity. At this point, it would be almost unthinkable to suggest that writers of *Kréyòl* represent /k/ or /w/ as in French.

Beyond Guadeloupe, this study has implications for the broader study of French applied linguistics. It highlights the importance of French and European Union policies on minority languages. Although language activists had been working to allow for the introduction of *Kréyòl* into the schools, it was not until the European Union emerged and created the Charter for Regional or Minority Languages (which France has signed but not ratified due to conflict with its Constitution), that these efforts saw any success (see Määttä 2005 for a discussion of French regional language policies and the indirect impact of the Charter for Regional or Minority Languages). In recognizing the rights of speakers of regional and minority languages, France paved the way for *Kréyòl*, the language of French citizens living in Guadeloupe and Martinique, to be

officially viewed as a language in its own right and one worthy of study.[30] This study also stresses the impact of French ideologies of language on the efforts of language activists working in former French colonies and public reactions to them. While orthographic standardization and literacy in a minority language are often significant goals in language revitalization, the specific tactics used by those engaged in language standardization and reactions to them are mediated by ideologies of language. It is this point that I hope to have demonstrated in the present chapter.

10. Directions for future research

Education in and of Guadeloupean *Kréyòl* continues to expand and, thus, the knowledge of GEREC orthographic conventions continues to spread, especially among Guadeloupean youth. It will be interesting to see how these young Guadeloupeans, some of whom will no doubt take part in shaping the future of *Kréyòl* language activism, go on to use written *Kréyòl*. My research (Managan 2004) demonstrates that Guadeloupean youths are more likely than older Guadeloupeans to take for granted *Kréyòl*'s status as a fully fledged language. Recent studies by teachers of the Regional Language and Culture classes established in 2002 note that this is especially true for those who choose to include these classes in their studies, whereas other youths hold more negative views of *Kréyòl* (see e.g., Van Berten 2004). Guadeloupean popular culture, which is marketed to and often created by Guadeloupean youth, celebrates a distinctive Guadeloupean identity. The need to mark Guadeloupean *Kréyòl*'s difference from French through orthographic conventions may not have the same resonance for them as it did for an older generation brought up in an environment where *Kréyòl* was stigmatized as inferior to French and where *Kréyòl* was never celebrated in the public sphere. At the same time, Guadeloupean youth, especially those who take Regional Language and Culture classes, are being exposed to GEREC orthographic conventions and the purist, academic *Kréyòl* (based largely on basilectal *Kréyòl*) that it is designed to represent. It will be interesting to see if and how the purist ideology of *Kréyòl* imparted through such programs impacts on how Guadeloupean youth think about and use *Kréyòl*. We might wish to study, for instance, if the academic *Kréyòl* of activists taught in schools is actually taken up by Guadeloupean youth and used outside of the classroom. Or, will this variety come to be associated with certain contexts of use? Future research would do well to attend to the perspectives of Guadeloupean youth on *Kréyòl* activism, especially among those who are actively participating in its different facets.

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30. The creole languages of the DOMs have been recognized indirectly as French regional languages in the Law of Overseas Departments (Law 2000–1207 of December 2000, section 34). The Regional Councils of the DOMs have also been given the authority to establish educational and cultural activities to promote their regional languages in the General Code of Territorial Collectivities, sections L4433–25 and L4433–27).

Another potentially fruitful area of research would be the changing foci of *Kréyòl* language activism. As I've mentioned, one of the first and primary aims of *Kréyòl* activism was the establishment of literacy conventions in *Kréyòl* and the development of a body of literature in *Kréyòl*. This focus on literacy has been the target of criticism (see e.g., Prudent 1989; Hazaël-Massieux 1993). Sainton (2004), has also written about how difficult it was for her students at the local teacher's college (IUFM) to adapt to writing in *Kréyòl* about *Kréyòl* literature, in part because students are not used to writing exclusively in Kréyòl, but also because these genres of analytical academic writing and of literature have for so long only been associated with French. While it is true that *Kréyòl* language activists have also written plays and collections of folktales and proverbs that draw on traditional practices of orality, in focusing on *Kréyòl* literacy, they have stressed the valorization of practices that are not traditionally associated with *Kréyòl*. In recent years, however, *Kréyòl* orality has been given more and more public attention. Oral skills in *Kréyòl* are highlighted through performance, with plays and sketches, "cultural" wakes (as opposed to traditional funerary ones), rap and the telling of folktales by skilled *conteurs* ('story-tellers'). Dictations in *Kréyòl* are still rare, while poetry slams and joke-telling contests are becoming more and more common. Indeed, between 2006 and 2008, I've observed the emergence and spread of the poetry slam genre in Guadeloupe. During research in summer 2006, I attended a poetry slam at a nightclub. At that time, poetry slams were relatively new in Guadeloupe and few people outside of a small circle of young adults and performers knew what slamming was. By summer 2007, the genre had become quite popular. Certain individuals have become known for their skills and these "official" slammers were often invited to perform at major public events, such as those commemorating the abolition of slavery. Such oral skills often rely on the ability to write in *Kréyòl* as well, even though the final product is performed orally and the original texts may never be published or otherwise made public. In this way, the writing of *Kréyòl* is propagated through these practices, even as orality is celebrated. In consequence, the writing of *Kréyòl* becomes merely a tool and not an end in itself. As the skills and ideas that the *Kréyòl* language revalorization movement sought to disseminate become more widespread and are taken for granted, it will be interesting to see if and how social practices that include *Kréyòl* change. Does the ability to write in *Kréyòl* make it easier for artists to express and share their ideas without resorting to French? Will traditional practices of orality be transformed as the ability to write in *Kréyòl* spreads? Will youth language practices, such as Guadeloupean youths' use of slang and borrowing of English into *Kréyòl* impact on *Kréyòl* language standardization and activism?

This is a very exciting time to be studying the impact of *Kréyòl* revalorization in Guadeloupe, as so many changes are taking place. The findings of such research will also certainly contribute to the broader literature on applied linguistics and on language revitalization, in the Francophone world and beyond.

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CHAPTER 8

Literacy and technology in French language teaching

Issues and prospects

Richard Kern
University of California, Berkeley

La mondialisation et Internet ont énormément diversifié les occasions de contact interculturel, un contact qui s'établit souvent par écrit. Ce chapitre présente la littératie comme un ensemble de pratiques cognitives, sociales et culturelles qui interagissent avec des supports matériels de l'écriture. La discussion, illustrée par des données empiriques, se centre sur quatre dimensions du rôle de la littératie dans des contextes de communication médiatisée par les ordinateurs: la venue de nouvelles formes de langue, les jeux de langue, la communication interculturelle en ligne, et la communication multimodale. Constatant que les nouvelles cultures de lecture et d'écriture dans la communication électronique sont de plus en plus caractérisées par des normes dynamiques et multiples, le chapitre conclut par une discussion des implications pour la recherche sur l'acquisition des langues secondes/étrangères.

Globalization and the Internet have greatly diversified the opportunities for intercultural contact, and this contact is very often mediated by writing. This chapter frames literacy as sets of cognitive, social, and cultural practices that interact with material technologies of writing. Four issues related to the role of literacy and technology in French language learning are reviewed and illustrated with data: new online language forms, language play, online intercultural communication, and multimodal communication. Suggesting that the new cultures of reading and writing in electronic environments are increasingly characterized by multiple, dynamic norms, the chapter concludes with a discussion of implications for research in second/foreign language acquisition.

1. Introduction

Literacy lies at the interface between language and technology. Since the origins of writing over 5,000 years ago, myriad uses of language have developed that do not depend on the physical co-presence of interlocutors. Visible and recorded language has allowed people to communicate across space and time, and has expanded the very processes of creation and interpretation by introducing new affordances. With writing, language became loosened from the context of its initial articulation – it could be reread, rewritten, recontextualized, and thereby rethought. Indeed, our capacity to analyze language itself (i.e., to develop metalinguistic notions of words, structures, and rules) is born of the concrete, material nature of writing. This has led some scholars to argue that writing and literacy have begotten nothing less than a transformation of human consciousness. "Without writing," Walter Ong writes, "the literate mind would not and could not think as it does, not only when engaged in writing but normally even when it is composing its thoughts in oral form" (1982: 78). Whether or not one is comfortable with the deterministic ring of Ong's statement, it is clear that cultures of reading and writing co-evolve with technologies of literacy, and that just as a technology may influence culture, so does culture influence the configurations and uses of that technology.[1]

Two important ideas come out of this notion of co-evolution. One is that reading and writing are not just cognitive processes, but also crucially social and culturally-embedded activities. The second, which follows from the first, is that writing systems reflect the social and cultural needs of their users, and will change as needs change. So when we look at technologies of writing, we also have to look at the cultures of reading and writing that surround them and co-evolve with them.

These two ideas lead us to rethink what we mean by literacy. Literacy is not just the ability to inscribe and decode words, or a particular set of academic skills. Rather, it has to do with cultures of reading and writing – that is, reading and writing in their variable social contexts of use. So if we are interested in literacy, we must attend to the full range of practices associated with written communication, which would include thinking, talking, and interacting with others.

The purpose of this chapter is to explore how old and new values, norms, and meaning-making practices interact in the context of computer-mediated

1. For example, for about 700 years in Ancient Greece and Rome literary manuscripts (bookrolls) had no spaces between words (despite writing being taught with spaces and a brief Roman experiment with spaces in literary texts). Reading was the specialized work of professional lectors, who preferred uniform columns of text as they read aloud to their audience (Johnson 2000). Moreover, literary bookrolls did not include headings, sections, punctuation, or indexes. The reading culture of the day did not require such features, since were rarely used for reference. By contrast, today so much of our reading is for informational purposes that navigational aids (tables of contents, indexes, headings, paragraphs, hotlinks, frames, etc.) seem essential to reading, even though they might have been irrelevant to the ancients.

communication (CMC), and to speculate on what relevance these interactions have for 21st century language learners. We will begin by outlining some key features of literacy. Then, we will consider some technology and literacy issues for language learning (focusing mainly on new literacy practices), and will conclude with a discussion of implications for research.

2. Characterizing literacy

To elaborate on the notion expressed above that literacy has to do with cultures of reading and writing, we can posit seven principles that highlight relationships between readers, writers, texts, culture, and language learning (Kern 2000).

1. Literacy involves interpretation. When we write we interpret the world (events, experiences, ideas, and so on) from our unique vantage point, and when we read we interpret a writer's interpretation (based on our own conception of the world).
2. Literacy involves collaboration. We write for a reader, even if that reader is ourselves. Our decisions about what we must say, and what we can leave unsaid, are based on our understanding of our reader. Readers in turn must contribute their motivation, knowledge, and experience in order to make a writer's text meaningful.
3. Literacy involves conventions. How we read and write texts is not universal, but is governed by cultural conventions that vary across contexts, evolve through use, and are modified for individual purposes.
4. Literacy involves cultural knowledge. When we read and write we act within particular configurations of attitudes, beliefs, customs, ideals, and values. Readers and writers operating from outside a given cultural system risk misunderstanding or being misunderstood by those operating on the inside of the cultural system.
5. Literacy involves problem solving. Because words are always embedded in linguistic and situational contexts, reading and writing involve figuring out relationships between words, between larger units of meaning, and between texts and real or imagined worlds.
6. Literacy involves reflection and self-reflection. When we read, and especially when we write, we are forced to think about language and its relations to the world and to ourselves.
7. Literacy involves language use. This is obvious, but the point is that literacy is not just a matter of knowing how to use a particular writing system, nor just having lexical and grammatical knowledge. Literacy requires knowledge of how language is used in a range of spoken and visual contexts to create meanings.

Although these principles are here framed in terms of reading and writing, they can be applied broadly to human communication in general. Indeed, as Brandt (1990: 14) points out, literacy is "not the narrow ability to deal with texts but the broad ability to deal with other people as a writer or reader". This seven-point linkage between literacy and communication has important implications for language teaching as it provides a bridge to span the gap that so often separates 'communicative' language teaching at introductory levels and 'literary' and 'cultural' teaching at the advanced level. By practicing literacy in a non-native language (and by that I mean engaging in real literacy events, not just rehearsing reading and writing skills), students learn not only about vocabulary and grammar, but also about the stories, myths, cultural schemata, and collective imaginings that make the language understandable. They learn to deal with uncertainties and ambiguities, rather than relying on simplistic and rigid form-meaning correspondences. They learn new, alternative ways of organizing their thought and their expression, ways that go beyond just learning facts about the second culture. They learn not only to problem solve, but also to problematize.

Where does technology fit in?[2] The 'new' media in Marshall McLuhan's day were radio, television, and film. Now the 'new' media are largely written (email, chat, instant messaging, SMS, blogs) or hybrid, multimodal environments that combine writing, speech, and visual communication (e.g., videoconferencing). In some contexts, electronic forms of writing are used more than the telephone (or even face-to-face contact) for personal communication. Some scholars have gone so far to predict that computer-mediated, written communication may quantitatively outstrip spoken communication in generations to come (e.g., Crystal 2001; Harris 2000). Reading and writing are therefore more important than ever, and as we look to the future, literacy will demand more symbolic sophistication and more critical thinking than ever before.[3]

3. Literacy and technology issues for foreign language learners

To date, the role of literacy in learners' development of a new language system has been relatively little explored in second language acquisition, due to that field's tendency to focus on spoken language production. However, this bias toward orality and overt interaction may obscure from view potentially important – even if less easily observed – dimensions of language learning and language use. The traditional expectation was

2. A note on what I mean to include in the term "technology" in this chapter: just as literacy is not merely a *technique* of encoding and decoding language but a wide range of practices that have linguistic, cognitive, social dimensions, we cannot limit our view of technology to just hardware and software but must view it in relation to the linguistic, cognitive, and social dimensions of practices that evolve through, around, and with it.

3. For accounts of the nature of electronic writing see Anis (1998), Anis and Zara (2005), Bolter (1991), Bolter and Grusin (2000), Danet and Herring (2007).

that if learners were really to use a foreign language, it would be in face-to-face encounters with native speakers. But globalization and the Internet have greatly diversified the opportunities for intercultural contact, and, as mentioned above, this contact is very often mediated by writing. Indeed, communities can now be virtual, bringing together people from around the world, with physical distance masked by instantaneous transmission of messages and images. Because computer-mediated communication is both written and interactive, the forms and functions of writing and speech overlap to an unprecedented degree, problematizing strict orality/literacy dichotomies. Networked communication also means that learners are not just in contact with native speakers, but also with people of varying degrees of competence in the language of communication, a reality that problematizes the notion of a monolithic language norm. Added to the challenges of pluriculturalism (within and between interlocutors) are the challenges of new multimodal texts that incorporate sound, graphics, animation, or video, demanding interpretive skills that are not just linguistic but semiotic in nature and scope.

In this section, we will review a number of issues related to the role of literacy and technology in language learning. Given the huge range of potential topics, I have limited the review to four issues I consider most closely tied to language learners' communicative use of technology: new language forms that online users of French must contend with, language play, online intercultural communication, and multimodal communication (with a specific focus on desktop videoconferencing). Due to space limitations, I have not included research on such topics as computer-based tutorials, correction programs, glossing and multimedia annotations, corpus analysis programs, and testing programs. I refer the interested reader to Levy (1997), Heift (2004), Chun and Payne (2004), Granger and Petch-Tyson (2003), and Chapelle (2001), for reviews of these topics.

3.1 New language forms

One of the first things that one notices about computer-mediated communication is that it presents new forms and conventions. CMC does not involve a single, uniform genre of language use, but rather a constellation of genres related partly to the particular medium (e.g., instant messaging, e-mail, chatgroups, blogs, game environments) and partly to the particular social and cultural contexts of a given act of communication. These genres range along a continuum, with forms somewhat resembling paper-based writing such as websites and most e-mail on one end as well as more interactive discourse that shares many features of speech (e.g., chat, instant messaging) on the other end (Baron 2000: 158). Because dynamic, interactive CMC is usually either space-limited (e.g., SMS messaging on cell phones) or time-pressured (e.g., chat

rooms), a plethora of reductions, abbreviations, acronyms, neologisms, emoticons and amalgams of letters and symbols have sprung up. For example, the SMS message *G 1 ID pR 7 AM: 6 on allait o 6né?* translates into standard French orthography as ‘*J’ai une idée pour cet après-midi: si on allait au ciné*?’[4]

French is a particularly interesting case to examine, because the French have a longstanding tradition of deep pride in the beauty, logic, and purity of their language. (Hence their reputation for being sticklers for language norms, especially in writing, as reflected in the systematic use of the *dictée* in French schools.)[5] What one currently finds in digitally-mediated French writing is a remarkable degree of variability and instability in forms. Some see this as a threat to the language. For example, Gabriel de Broglie, a former vice-president of the *Haut Comité de la langue française,* expressed the threat as follows: “*L’ordinateur peut réduire la langue en sabir, mais il peut aussi en assimiler presque toutes les nuances . Il devrait y avoir une convention internationale de protection des langues contre l’informatique*” ‘Computers can reduce language to gibberish, but they can also take on almost all its nuances…. There should be an international convention to protect languages from computer technology’ (cited in Noreiko 1993: 174–175, translation mine). The stance I adopt in this chapter, however, is that these new forms express the vitality of the French language as it is adapted to new online cultures of communication.

To get a sense of some of the features of interactive CMC, we will examine a sample of one type – Internet Relay Chat (IRC) – from a corpus developed by Chenu (2003). IRC allows multiple participants to carry on a written conversation in real time on one of thousands of ‘channels’ (or chat rooms). The following excerpt involves two interwoven conversational threads: one involving a Canadian who inquires about jobs and the cost of living in Paris, and the other between two IRC adepts talking about authorizing and deauthorizing nicknames.

1	<PBY>[6] *j’aurais besoin de savoir les salaires à paris.. quelqu’un peu m’aider?*	<PBY> I would need to know about salaries in paris.. can anyone help me?
2	<PCJ> lol PBY.. *c débile ta question*	<PCJ> laughing out loud PBY.. your question is stupid
3	<PAD> *boujour*	<PAD> hello
4	<PAD> PCJ:)	<PAD> PCJ:)

4. See Anis (2001, 2007), Dejond (2002) and Chenu (2003) for plentiful examples of French cyberlangue.

5. The French word for spelling, *orthographe*, derived from the Greek *ortho-* (straight, right, correct) and *-graphia* (writing), reflects this attachment to normativity.

6. Participant names (e.g., <PBY>) have been encoded.

5	<PCJ> *c hyper variable d'une boite à l'autre... c comme partout!*	<PCJ> it's super variable from one place to another... it's like everywhere else!
6	<PAD> #### DCC	<PAD> #### DCC
7	<PCJ> aaaaaaaarf PAD.. *change de nick où je te vire mdr...*	<PCJ> aaaaaaaarf PAD.. change your nick[name] or I'm going to get rid of you lol...
8	<PCJ> (*vite vite*)	<PCJ> (quickly quickly)
9	<PAD> *mais heu*	<PAD> but um
10	<PAD> *je peux pas* lol	<PAD> I can't lol
11	*** PAD is now known as PAD[7]	*** PAD is now known as PAD
12	<PAD> *pfuuu*	<PAD> phew
13	<PCJ> *bon c déjà mieux ça*	<PCJ> OK, that's much better
14	<PCJ>;)	<PCJ>;)
15	<PAD> *t cvontent je vais avoir mlein de prive* now lol	<PAD> you're happy I'm going to have lots of private stuff now lol
16	<PBY> *je suis québécois j'ai aucune idée du cout de la vie en France*???	<PBY> I'm from Quebec, I have no idea about the cost of living in France???
17	<PCJ> *lol bah oui... moi j'ai envie que tu sois toute belle, même sur IRC.. y'a pas de raison*!	<PCJ> lol well yeah... I want you to be all pretty, even on IRC.. there's no reason!
18	<PCJ>:o)	<PCJ>:o)
19	<PAD> mdr	<PAD> lol
20	<PBY> *est-ce que 18 000 fr à Paris c'est assez pour vivre à deux*?	<PBY> is 18 000 francs in Paris enough to live on as a couple?
21	<PCJ> PBY: *bcp plus cher qu'au québec.. pour comparaison, qd un trio au McDo vous coute 5$, ici ça coute 9$ pour la meme chose*	<PCJ> PBY: much more expensive than in québec.. for comparison, when a 'trio' at McDonalds costs you $5, here it costs $9 for the same thing
22	<PAD> *bon tiens je te confie la lourde tache de surveiller le nick PAD lol*	<PAD> okay well I confer upon you the heavy task of watching out for the nick[name] PAD lol
23	<PCJ> PBY: *largement*	<PCJ> PBY: easily
24	<PBY> *18000 fr par mois*	<PBY> 18000 francs per month
25	<PCJ> PAD: *ouep*	<PCJ> PAD: yup
26	<PAD> *des qu'il est dropper ZOU tu le register si je le fais pas* lol	<PAD> as soon as ZOU is dropped you register him if I don't do it lol

27	<PAD> *'tain tu as fais quoi aux zautre aop*? lol	<PAD> Geez, what did you do to the other AOPs (Auto-Operators)? lol
28	<PAD> *ils sont pas tous deop par ma faute qd meme mdr*	<PAD> they're not all deop'd [removed from operator status] because of me, though lol
29	<PCJ> *ben kestu veux, je suis le seul gars irréprochable sur ce chan, c pas ma faute*!! LOL	<PCJ> well what do you want, I'm the only blameless guy on this channel, it's not my fault!! LOL
30	<PAD> *c vrai* (Chenu 2003)	<PAD> that's true

One notices immediately the short utterances, reminiscent of spoken banter, necessarily punctual to maintain the rhythm and pace of interaction in real time. Speed of typing is also suggested by typos (e.g., *boujour, cvontent, mlein*). Because of the multiple participants and multiple conversation threads, one also notices that responses are often separated from initiating utterances, making it sometimes difficult to determine who is addressing whom. Also remarkable is the extensive use of phonetic representation, with accompanying loss of some morphological endings (e.g., *quelqu'un peu m'aider*) or the redundant insistence on others (e.g., *aux zautre*). For the uninitiated, these kinds of utterances might seem either off-putting or intimidating, but for insiders they are conventional and transparent. As with all forms of literacy, the process of becoming familiar with and socialized into specific language practices provides participants with a special identity and sense of belonging to a particular discourse community.

A generic feature of chat (and SMS) is the frequent use of abbreviations (*c* for *c'est*, *bcp* for *beaucoup*, *qd* for *quand*, etc.) and non-standard spellings (e.g., *kestu veux* in the above excerpt). Abbreviations most often delete vowels, taking the word down to its "consonantal skeleton" (Anis 1998) such as *slt* for *salut*, *tt* for *tout*.[8] 'Standard' reduced forms to represent spoken forms (e.g., *t'es* for *tu es*) are further simplified in chat (e.g., *t pas sérieux*). Some abbreviations can have multiple referents, however. For example, *vs* usually stands for *vous* but it can also stand for *vais*, *vas*, *viens* (e.g., *allo pat tu vs bien l'ami?* vs. *bon je vs laisse bonne fin d aprém bizoooooooooo* (Krautgartner 2003). Although qu- is frequently spelled with k in relatives and interrogatives (Krautgartner 2003),[9] *que* is most often abbreviated by the letter q rather than ke (e.g., *le match n'a*

7. Although PAD changed nicknames in the original IRC interaction, the change is not reflected in Chenu's transcript presumably so that the reader can more easily follow the participants' identities.

8. Anis (2001: 37), discusses how abbreviated words are much more readily recognized by their consonants than by their vowels.

9. A striking parallel is found in Italian, all the more remarkable since k is considered a "foreign" letter (Ross 2003).

duré q 12 mns). It is interesting to note that this is not new; *q* (with a macron above it) can be found as an abbreviation of *que* in medieval manuscripts.

Emoticons (e.g., :) :o) ;) expressing smiles and a wink in the above excerpt) have grown in number to designate a wide range of emotions. Although there is a common core set of basic emoticons in North America and Europe, special emoticons vary across languages to accommodate particular cultural phenomena. For example, French makes a distinction between :-) and :-> (the latter being diabolical, laughing sarcastically or mockingly). Kisses on the cheek are indicated variously by :-x or :-* or xxx or xox, and drunkeness is signified by :^). Like abbreviations, some emoticons can mean different things in different contexts and therefore require interpretation (e.g., :-D can signify laughter, mockery, or talking too much, whereas :-(can signify displeasure, sadness, disappointment, or disapproval).

Acronyms (e.g., *lol* and *mdr* in the above excerpt) are particularly fascinating. *Lol* is a well-known English acronym for 'laughing out loud'. What is interesting is that it is used in French chats far more often than the French equivalent *mdr* ('mort de rire'), and in fact is the most frequent IRC-specific acronym in Chenu's (2003) corpus.[10] It is subject to modification (e.g., lolol, lool) and can be combined with emoticons (e.g.,;lolololool, lol)), whereas *mdr* cannot, suggesting that *mdr* is more verbal and less iconic than *lol* (Chenu 2003). One of my students who recently spent two years teaching in a French *collège* in Lille told me that *lol* is even used in spoken form on school playgrounds. It is also commonly used in Portuguese (Benedito 2002). Similarly, the acronym FAQ (Frequently Asked Questions) is found not only on English language websites but also on French, Italian, and German websites. With the exception of French (which has assimilated the acronym to mean *Foire Aux Questions*), FAQ, like *lol,* serves as an icon, whose meaning is made clear through experience and socialization in particular electronic environments.

Such spelling and morphological reductions are less common in e-mail and even most blogs, where time and space are not pressing issues. This mirrors the historical comings and goings of abbreviations, which were frequent in the days of scribes writing on expensive parchment (in fact, some of the very same abbreviations, such as *q* for *que* noted above), but which became much rarer when paper and print technology reduced costs.

The argument that acronyms and abbreviations are used for economy of time, effort, and space only goes so far, however. Some variant chat spellings are longer than the original word (e.g., *moua* for *moi*). Even in the case of abbreviations, for experienced typists, it may take appreciably longer to type novel spellings like *koa* for *quoi* since one no longer relies on automatic typing habits, but instead must think about representing sounds. (Similarly, for fluent readers, interpretation is effectively slowed

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10. *Lol* was also more frequent than *mdr* in Krautgartner's corpus. She hypothesizes that its greater frequency is due to its greater ease of typing—*lol* can be typed with just the right ring finger, whereas *mdr* involves the use of three fingers on two hands.

by new spellings – reading becomes literally a decoding game, especially for the newly initiated.) Moreover, one finds elongated forms imitating phonetic characteristics of expressive speech (e.g. *aaaaaaaarf, pfuuu* in the above excerpt, or *ptaiiiiiiiiiiin j'arrive pas a lancer mon eggdrop ca m'ënerveuuuuuh* from another part of Chenu's corpus (p. 135) where prolongation of the second syllable of *putain* and of the schwa at the end of *énerve* [ø] or [œ] reflect frustration or irritation.) The use of typographic characters to approximate letter forms, as in § å£µt £ë§ Fî££ë§ (Chenu 2003: 88), offers a different, graphically-based, form of expressiveness. Because all of these forms involve extra processing effort on the part of both writer and reader, economy cannot be seen as the sole motivation for special forms.

A strong contending motivation is inventiveness. As we will see in the following section, language play is highly valued in CMC, and especially in its most interactive forms such as IM and chat. Cleverness accrues prestige to the individual and reinforces the aesthetic dimension of online communication. The French *chatteur* who signs off with '*baille baille*' instead of the standard French 'bye bye' is being witty by altering the spelling, but may also be signifying either a 'bored' or 'tired' goodbye (playing on the verb *bailler* 'to yawn'). Being able to successfully participate in 'coded' and playful communication is personally satisfying, it creates a sense of membership in an exclusive club, and it thereby provides its own intrinsic motivation.

In sum, the kind of writing produced in synchronous CMC environments is first and foremost social interaction, and its form reflects that purpose. Like speech, written chat exchanges are characterized by direct interpersonal address, rapid topic shifts, and frequent digressions. Similarly, the functions expressed in chat frequently overlap with purposes normally associated with speech. Writing becomes a channel for lively, spontaneous exchange of thoughts, feelings, ideas, and wit – and tends to be oriented toward developing social relationships and entertaining others more than informing, explaining, or persuading. In language learning contexts, synchronous writing is not done just to display language knowledge or for teacher validation, but for a variety of other communicative purposes.[11]

So it would appear that the language inventions found in chat, IM, and SMS environments (which occasionally bleed over into blogs, e-mail, discussion lists, etc.) are not so much a *simplification* of the writing system as an *adaptation* of the writing system to allow inclusion of features needed by the online *culture of communication*. That is, when a new function of writing is introduced that is not adequately served by the writing resources of print culture (i.e., quick-paced social interaction), new resources are added to the stock. While this adaptation has introduced some new forms, there is

11. From a language acquisition perspective, Chun (1994) reports that learners engaged in synchronous written discussion gave more feedback to one other, and exhibited a broader range of their sociolinguistic competence in greeting and leave-taking, requesting confirmation or clarification, and apologizing, than in their oral classroom discourse.

nothing new about the process; writing has repeatedly adapted itself to new conditions and social needs throughout its 5,000 year history.

3.2 Language play

In the preceding section, we saw examples of inventiveness in written language conventions in CMC environments. Now, we turn to more idiosyncratic creativity at the level of the individual. In the context of research on language learning, most studies of CMC have focused on issues of quantity and quality of language production and interaction. Over the past ten years, however, increasing attention has been paid to the significant role of language play in the process of acquiring both native and second languages. Crystal (1998: 181) describes the importance of language play as follows:

> To play with language requires that, at some level of consciousness, a person has sensed what is normal and is prepared to deviate from it—what I have referred to as 'bending and breaking' the rules. Language players are in effect operating within two linguistic worlds at once, the normal and the abnormal, and trading them off one another. It therefore seems very likely that, the greater our ability to play with language, the more we will reinforce our general development of metalinguistic skills, and – ultimately – the more advanced will be our command of language as a whole, in listening, reading, writing and spelling.

Crystal laments that after seven years of studying French, he never developed the language competence necessary to make puns or jokes in French, even though any four year old knows enough to engage in language play. In a foreign language context, Lantolf (1997) draws on Vygotskian theory to argue for the importance of play in processing language that is beyond one's current competence. Cook (2000) takes a discourse stylistics perspective, questioning traditional communication models that posit one-way encoding of pragmatic intentions or information into surface language forms. Language use is not always rational and transactional, he argues, and language play demands a bi-directional model that also allows surface forms to drive intentions. Cook describes three main types of language play: linguistic (e.g., rhyme, rhythm, repetition); semantic (e.g., role playing, creating imaginary worlds); and pragmatic (e.g., performance that potentially subverts the established social order).

In the examples below we will see how language learners play with French in a synchronous conferencing environment.[12] Online communication provides a particularly rich medium for language play because it provides time to think and formulate utterances (which face-to-face discourse generally does not) while still maintaining the lively interactiveness of speech. Because it is written, it also removes the phonological demands that are often so anxiety-producing to language learners. The data are drawn from a corpus of approximately 100 synchronous conferences produced by

12. See Warner (2004) for an important study of language play in the learning of German.

beginning and intermediate French students in a MOO (multi-user domain, object oriented) called Café MOOlano (http://socrates.berkeley.edu/~moolano/).[13]

The first example is taken from an intermediate level French conversation class that met in a computer lab three times during the semester to converse in writing in Café MOOlano. At the heart of this segment is a typo in line 2 ("porf" instead of "prof") which gives rise to a whole string of "porf" jokes, illustrating both linguistic and semantic play.

1	Emily_Y says, "*OHALA, c'est quoi*?"	Emily_Y says, "OHALA, what's that?"
2	Corinne_C says, "*notre **porf***"	Corinne_C says, "our **porf**"
3	Emily_Y says, "***porf***?"	Emily_Y says, "**porf**?"
4	Corinne_C says, "*prof*"	Corinne_C says, "prof"
5	Emily_Y says, "*oh DAC*"	Emily_Y says, "oh OK"
6	Marissa_B says, "*est-ce qu'on peut l'appeller "porf" pendant ce qui reste du semestre*?"	Marissa_B says, "can we call him "porf" for the rest of the semester?"
7	Gilles says "*voyons*!!!!!"	Gilles says "let's see here!!!!!"
8	Corinne_C says, "*oui*"	Corinne_C says, "yes"
9	Gilles [to Marissa_B]: *tu veux un F minus*?	Gilles [to Marissa_B]: do you want an F minus?
10	Emily_Y says, "*QUOI*?"	Emily_Y says, "WHAT?"
11	Aline_F says, "*notre **porf**, nous l'aimons*"	Aline_F says, "our **porf**, we love him"
12	Gilles [to Emily_Y]: a f word	Gilles [to Emily_Y]: a f word
13	Marissa_B says, "*si je peut t'appeler "**porf**"*:)"	Marissa_B says, "if I can call you "**porf**":)"
14	Corinne_C says, "*d'accord*"	Corinne_C says, "okay"
15	Emily_Y says, "*merci Gilles je pense que c'est clair*"	Emily_Y says, "thanks Gilles I think it's clear"
16	Emily_Y says, "***porf**...c'est drole*"	Emily_Y says, "**porf**...that's funny"
17	Aline_F says, "*oui*"	Aline_F says, "yeah"
18	Corinne_C says, "*je suis **porf***"	Corinne_C says, "I am **porf**"
19	Gilles says, "*je vous deteste*!!!!!!"	Gilles says, "I hate you!!!!!!"
20	Aline_F says, "***porf porf porf***"	Aline_F says, "**porf porf porf**"

13. MOOs are organized as virtual locales and are divided into 'rooms' (more accurately, defined spaces – such as a garden, a mountain top, or a café) where participants congregate and interact. Users can create their own rooms, as well as various objects within them. To represent themselves in this virtual space, users create characters with names and detailed descriptions.

21	Emily_Y says, "*mais* ***porf****...c'est tellement jolie*!"	Emily_Y says, "but **porf**...it's so pretty!"
22	Aline_F says, "*Gilles, tu l'aimes*"	Aline_F says, "Gilles, you love it"
23	Gilles says, "*vous n'etes pas des students mais des* ***stupidents***"	Gilles says, " you aren't students but **stupidents**"
24	Corinne_C says, "*tu es mechant*"	Corinne_C says, "you are mean"
25	Marissa_B says, "*je rigole trop, je ne peut pas repondre avec assez d'intelligence et maturite*.):"	Marissa_B says, "I'm having too much fun, I can't answer with enough intelligence and maturity.):"
26	Gilles [to Corinne_C]: *je blague voyons*!!	Gilles [to Corinne_C]: C'mon, I'm kidding!!
27	Emily_Y says, "*oui il blague*"	Emily_Y says, "yeah he's kidding"
28	Gilles [to Marissa_B]: *oui tu es trop jeune*;)	Gilles [to Marissa_B]: yes you're too young;)
29	Aline_F says, "*Je Suis Un* ***Stupident***"	Aline_F says, "I am a **Stupident**"

Even though Corinne promptly corrects her typo in line 4, "*porf*" has already stirred the imagination of the other students and has taken on an insuppressible life of its own. In line 6, Marissa asks if they can call Gilles (the graduate student instructor) "*porf*" for the rest of the semester, to which Gilles replies with a mock threat of giving her an F minus, to which Marissa agrees (with a smile) if she can call him "*porf*" (line 13). Meanwhile, in line 12, Gilles adds mystique to the term by calling *porf* "an f word" (potentially a double entendre referring back to his threat of giving Marissa an F-). Two students comment on how *porf* is "*drole*" (line 16), "*tellement jolie*" (line 21) and in line 18 Corinne declares "*je suis porf*" followed by Aline's Ionesco-like crescendo "*porf porf porf*" in line 20. Gilles again feigns discontent ("*je vous déteste*!!!!!!") and in line 23 creates an English neologism: "*stupidents*", which is then picked up by Aline in line 29. In lines 22–28 we see a tongue-in-cheek adolescent-style teasing sequence. As it turned out, "*porf*" later resurfaced a number of times during that day's session.

Although "*porf*" originated as a simple typo, creative neologisms are one of the hallmarks of chat environments.[14] Unreal entities can be easily conjured through language – and especially through written language. Although no one has ever actually seen one, a *kanguoin* (cross between a penguin and a kangaroo) can be easily imagined. A particularly clever neologism is the following, produced by a second-semester student at the end of a MOO session: *Au revoir! Au* ***retaper!*** This neologism requires morphological analysis of the expression "*au re+voir*" and then a remapping of that

14. The verb *pwn* in English-language online gaming environments also originated as a misspelling of 'own' (the 'p' and the 'o' being adjacent on the QWERTY keyboard) and quickly became the standard form.

structure onto a verb that is much more relevant to the peculiar medium of communication in chat: the verb to type.

Language play can also help learners get around their syntactic limitations. In the example below, another second semester student (Jessi_L) wants to know how long Isabelle has been at Berkeley, but she has not yet studied the *"depuis quand"* structure, so she produces the following question:

> *Jessi_L dit, "Isabelle, oui oui... et toi*?
> *C'est* ***le?? annee*** *a Berkeley pour toi*?"

What is interesting about this question is that it relies on graphic resources and is functional *only* in written form – it cannot be uttered aloud. Other uses of graphic resources included arrows, used to "point to" the speaker, replacing the clitic (presumably for stylistic reasons):

> Diane_K <---- *tres paraseuse*
> Diane_K <---- *faineante encore*

Similar use of symbols in online communication can be found in Thoms, Liao and Szustak (2005).

A final example, taken from an intermediate level conversation class, illustrates pragmatic play. While other students chit-chat about vacation plans, parties, and classes, Marcus_D (starting on line 6 and italicized throughout) is in "another world", posting messages that seem to have nothing to do with the rest of the conversation:

1	Janice_W dit, "*Preetha: tu a visite singapour pendant les vacances de noel*?"	Janice_W says, "Preetha: did you visit singapore during christmas break?"
2	Cameron_P [to Franz_S]: "*a ou est-ce que tu veux aller*?"	Cameron_P [to Franz_S]: " where do you want to go?"
3	Louise dit, "*Cameron, oui -- il faut regarder ma description, et puis, ecrire la votre.*"	Louise says, "Cameron, yes – you have to look at my description, and then, write yours."
4	Preetha_P dit, "*oui, pendant 3 jours*"	Preetha_P says, "yes, for 3 days"
5	Sabine_G dit, "*je n'ai rien a dire*"	Sabine_G says, "I don't have anything to say"
6	*Marcus_D dit, "Comme elle est bell... je ne peux m'en detacher, je serre plus fort la main de maman, je la retiens pour que nous restions la encore quelques instants, pour ..."*	*Marcus_D says, "How beautiful she is...I can't tear myself away, I squeeze my mother's hand more tightly, I hang on it so that we stay there a few more instants, in order to ..."*

7	Janice_W dit, "*justin: oui je vois son nom dans la liste..*"	Janice_W says, "justin: yes I see her name on the list.."
8	*Marcus_D dit, "O; est doffoco;e de retrpiver ce qie cette [pi[ee de cpoffeir avaot de so fascomam"*	*Marcus_D says, "Oy is dofficiy to fomd whay was sp fascomatomg abpiyt tjos Barboe fp;;"*
9	Sabine_G dit, "*Marcus, tu es vraiment bizarre*"	Sabine_G says, "Marcus, you are really bizarre"
10	Justin_T dit, "*merci beaucoup Sabine*!"	Justin_T says, "thank you very much Sabine!"
11	Sabine_G dit, "*De rien, Justin*!"	Sabine_G says, "You're welcome, Justin!"
12	Cameron_P [to Franz_S]: "*super -- est-ce que tu es deja alle a NY*?	Cameron_P [to Franz_S]: "great – have you already been to NY?
13	*Marcus_D dit, "pourquoi?"*	*Marcus_D says, "why?"*
14	Justin_T dit, "*Janice, est ce qu'elle est dans un autre classe de francais maintenant*??"	Justin_T says, "Janice, is she in another French class now??"
15	Cameron_P [to Franz_S]: *moi, je ne l'ai jamais vue*	Cameron_P [to Franz_S]: I've never seen it
16	*Marcus_D dit, "Je n'y arrive pas bien. Je ne parviens a revoir que son visaage assez flou, lisse et rose...lumineux.."*	*Marcus_D says, " I can't manage to see her. I can only recover the rather vague contours of her face, smooth and pink...a shining face.."*
17	Janice_W dit, "*docteur franz s*"	Janice_W says, "doctor franz s"
18	Jenna_B dit, "(to Cameron) *je ne comprends pas...*"	Jenna_B says, "(to Cameron) I don't understand..."
19	Justin_T dit, "*Qui voudrait aller a une fete ce soir*?"	Justin_T says, "Who would like to go to a party tonight?"
20	Preetha_P dit, "*janice, est-ce que tu a vu sudhir pendant les vacances*?"	Preetha_P says, "janice, did you see sudhir during the break?"
21	Jenna_B dit, "(to Louise) *tu as aime le Bresil*?"	Jenna_B says, "(to Louise) did you like Brazil?"
22	Janice_W dit, "*justin: peut etre elle est dans une autre classe de madama louise martin*"	Janice_W says, "justin: maybe she's in louise martin's class"
23	Franz_S dit, "*cameron, no non plus, mais ma femme etude d'etre une couturiere et new york est le meilleure ville en etats unis*"	Franz_S says, "cameron, no [me] neither, but my wife is studying to become a seamstress and New York is the best city in the United States "

24	*Marcus_D dit, "comme eclaire au dedans... et aussi la courbe fiere des dese narines, de ses levres dont les coins se relevent..."*	*Marcus_D says, "like a lightening bolt inside... and also the proud curve of her nostrils, of her lips, whose corners curl upwards..."*
25	Louise dit, "*Preetha – c'est quoi, une foulle---une folle*???"	Louise says, "Preetha – what's a "foulle"---do you mean "folle"???"
26	Preetha_P dit, "*oui*!"	Preetha_P says, "yes!"
27	*Marcus_D dit, "C'est mon emerveillement qui surtout me revient...tout en elle etat beau. La beaute, e'etait cela.C'etait cela-etre belle"*	*Marcus_D says, "It is my amazement that I mostly remember.. everything in her was beautiful. This is what it meant, to be beautiful "*
28	Jenna_B dit, "(to cameron) *ah oui, merci, j'ai de famille la, j'ai deja visite*"	Jenna_B says, "(to cameron) oh yeah, thanks, I have family there; I've already been"
29	Janice_W dit, "*haha... j'aime singapour, mais je n'ai pas une maison la.. je ne sens pas chez moi a singapour non plus*"	Janice_W says, "haha... I love singapore, but I don't have a house there.. I don't feel at home in singapore either"
30	Cameron_P [to Jenna_B]: *est-ce que tu parles portugais*?	Cameron_P [to Jenna_B]: do you speak portuguese?
31	Preetha_P dit, "(louise) *je fais beaucoup de choses ce semestre*"	Preetha_P says, "(louise) I'm doing lots of things this semester"
32	Janice_W says, "anne: *est-ce que tu es dans la classe aussi? de shakespear*?"	Janice_W says, "anne: are you in the class too? the shakespeare class?"
33	Louise dit, "*Marcus – c'est de la poesie. Que c'est beau*!"	Louise says, "Marcus – that's poetry. It's so beautiful!"
34	Sabine_G dit, "*Justin, je suis allee au Sigma Nu une fois, mais j'ai bu trop d'alcool, et il n'etait pas un bon experience*"	Sabine_G says, "Justin, i went to Sigma Nu once, but I drank too much, and it wasn't a good experience"
35	Justin_T dit, "*Janice, je pense que ta description est tres drole*!"	Justin_T says, "Janice, I think your description is very funny!"
36	Franz_S dit, "*louise, j'attends, que Isabelle et dans votre classe de francais 13*?"	Franz_S says, "louise, I wait, that Isabelle is in your French 13 class?"
37	Preetha_P dit, "*ohh, je vois janice*"	Preetha_P says, "ohh, I see janice"
38	Janice_W dit, "*description de quoi, justin*?"	Janice_W says, "description of what, justin?"
39	Marcus_D dit, *"Merci"*	*Marcus_D says, "Thanks"*

40	Eve_N dit, "*Marcus, de qui parles-tu*?"	Eve_N says, "Marcus, who are you talking about?"
41	Marcus_D dit, *"c'est de Nathalie Sarraute, "Enfance" J'en lis maintenant"*	Marcus_D says, "it is by Nathalie Sarraute, *Childhood*. I am reading it now "
42	Marcus_D dit, *"Je sens soudain comme une gene, une lagere dol.."*	Marcus_D says, *"I suddenly feel bothered, a light pain.."* [with misspelling and truncation]
43	Marcus_D dit, *"Elle avait du m'amener...sans jamais l'exiger... elle m'avait surement incitt, sans que je sache comment, a la trouver tres belle"*	Marcus_D says, *"She had probably led me... without ever demanding it...she had surely incited me, without my knowing how, to find her very beautiful"*
44	Cameron_P [to Marcus_D]: *a quoi est-ce que tu parles*!?	Cameron_P [to Marcus_D]: what are you talking to?
45	Cameron_P [to Marcus_D]: *je veux dire de quoi...*	Cameron_P [to Marcus_D]: I mean...what are you talking about?
46	Marcus_D dit, *"...d'une incomparable beaute...C'est de la que cela m'etait venu, ce malaise, cette gene"*	Marcus_D says, *"...about an incomparable beauty... This is where this unease, this embarrassment had come from"*

Marcus' contributions in lines 6, 8, 16, 24, 27, 42, 43, 46 are directly quoted from Nathalie Sarraute's *Enfance,* which is read in French 3, a course that must be taken either prior or concurrently with intermediate conversation. In line 8, Marcus' right hand has slipped one position to the right on his keyboard, but because his eyes are apparently on the book he is copying, he does not notice. His "gibberish" elicits Sabine's comment that he is "really bizarre" (line 9), to which he asks "why?" (line 13). In lines 16, 24, 27, Marcus returns to quote Sarraute until he attracts Louise's admiration in line 33, for which he thanks her in line 39. In line 40, Eve asks Marcus what he is talking about, and he explains that he is quoting Sarraute's *Enfance* (which he then continues to do in line 42). Finally, Cameron too asks Marcus what he is talking about (lines 44, 45), and he responds with a syntactically and semantically harmonious answer, directly from Sarraute: "…about an incomparable beauty…". In this exchange, Marcus straddles two discourse worlds – that of Sarraute's memoir and that of the class discussion (which he dips into briefly in lines 13, 39, 41) – and only brings them together in line 46, which coincidentally happened to be the concluding entry of the MOO session that day. Clearly, this is an interaction (or modified soliloquy?) that would be unimaginable in speech, but that is strangely at home in the MOO environment, which provides the resources for Marcus to indulge himself by appropriating another's voice and by challenging the social norms of group interaction.

Observing students' language play reminds us that language use is not just about transmitting information, ideas, and emotions – sometimes it serves as a workbench for creative invention, a wardrobe of new identities, or simply a means of enjoyment.

Because it involves response to *all* dimensions of communicative context, not just propositional meaning, language play is an antidote to teaching that focuses heavily on communicative tasks and the straightforward manipulation of information and language forms. Rather than bringing attention to how contexts of interaction motivate and shape language forms, language play asserts the reverse: that sometimes language forms themselves motivate and shape interaction (Cook 2000).

3.3 Intercultural encounters (cultural literacy)

A recent trend in language teaching is the development of long-distance collaborations involving two or more classrooms, usually in different countries.[15] Often referred to as telecollaboration, these international partnerships generally place an emphasis on culture in language use and learning. One of the best known and the most longstanding projects is *Cultura.* Developed in the late 1990s by Gilberte Furstenberg and her colleagues, *Cultura* is an online environment whose aim is to facilitate American and French students' collaborative exploration of the concepts, values, beliefs and attitudes that underlay their respective cultures – and language use (Furstenberg 2003; Furstenberg & English 2006; Furstenberg, Levet, English & Maillet 2001). Furstenberg's goal was cultural literacy; not in a E. D. Hirsch (1987) "fact list" sense, but rather in a critical sense in which culture is not merely transmitted but problematized through juxtapositions of materials, interpretations, and responses to interpretations. In addition to working extensively with a wide variety of texts, questionnaires, images, and films, students 'meet' in an asynchronous online forum that gives them time to read, think, and formulate their answers to their transatlantic partners' questions. Their discussion of these questions (in writing) leads to new questions, feeding an ongoing process of reflection, discussion, and further reflection. The idea is not to arrive at definitive conclusions about the other culture, but to glimpse aspects of the culture through the very process of discussion. In the example below, an MIT student of Korean origin posts the following comment and question:

> Observation: [in the word association lists for "individualism"] America is mentioned several times on both sides. On the American side, the number of responses which view individualism as a beneficial idea is much greater than the number

15. See Kern, Ware and Warschauer (2008) for a survey of recent research on intercultural exchanges. Pen pal exchanges and even multimedia exchanges have existed since at least the 1920s, when Célestin Freinet established the Modern School Movement in Europe. But before the relatively recent widespread access to computer networks, such exchanges had to rely on postal mail and therefore lacked the immediacy of synchronous communication.

of negative responses to individualism. However, on the French side, it's the other way around.

Question: I found that the word "egoism" appears 12 times on the French side. In France, does "egoism" have a negative meaning? Also, the word "egoism" is not used frequently in ordinary conversations in America. What about in France? Is "egoism" often used in everyday situations?

A student from Paris II responds:

Il ne faut pas s'arrêter au sens brut des mots, mais aussi s'intéresser à leur valeur. Ainsi, la traduction la plus fidèle du mot français égoïsme serait 'selfish' plutot que 'egoism'. Egoism se rapproche plus de égocentrique, alors qu'un égoiste agit dans le seul but de son intérêt personnel, aux dépends des autres. Il se rapproche alors de la vision francaise de l'individualiste, qui privilégie sa réussite professionelle aux dépend de sa vie familiale et sentimentale. Toutefois, le mot individualisme n'est pas exclusivement péjoratif, et contient l'idée d'œuvrer pour son épanouissement, de sortir des sentiers batus. Est-ce que le mot ambition ou épanouissement personnel ne serait alors pas plus approprié pour traduire en francais le mot anglais 'individualisme'?
'You shouldn't stop at the strict meaning of words, but you should look at their value in context. Thus, the best translation of the French word *égoisme* would be 'selfish[ness]' rather than 'egotism'. Egotism is closer to egocentric, whereas an *égoiste* acts only in self-interest, at the expense of others. So it gets closer to the French vision of the individualist, which highlights one's professional success at the expense of one's family and emotional life. Nevertheless, the word *individualisme* is not exclusively pejorative, and it contains the idea of working toward self-fulfillment, getting away from the beaten track. So wouldn't the word *ambition* or *épanouissement personnel* [self-fulfillment] be more appropriate to translate the English word 'individualism' in French?]

And a half hour later another Paris II student adds his perspective:

je dirai qu'effectivement l'individualisme en France est profondément connoté. La tradition sociale du pays implique que même si la réussite personnelle est importante, elle ne doit pas se faire aux dépends d'autres personnes. C'est pour cette raison que nous sommes très attachés au sytème des classes préparatoires et des grandes écoles car elles permettent de ne classer les gens que sur le mérite.
D'ailleurs, si être individualiste n'est pas un compliment, dire à quelqu'un qu'il est égoïste est un reproche, une sanction.
Pourtant égoïsme et égocentrisme sont deux choses différentes. Une personne égoïste ne pense qu'à elle, à son bonheur personnel, en ne tenant aucunement compte des autres. Une personne égocentrique, quant à elle, ramène tout à sa personne: les discussions, les caprices... (http://web.mit.edu/french/culturaNEH/archives/2005f/)
'I would agree that individualism in France is deeply connotative. The country's social tradition implies that even if personal success is important, it mustn't be attained at the expense of other people. That's why we are very attached to the

> system of prep schools and the *grandes écoles*, because they allow us to classify people exclusively based on their merit. Besides, if being individualistic is not a compliment, telling someone that he is selfish is a reproach.
> However, selfishness and egocentrism are two different things. A selfish person thinks only of himself and his own happiness, not taking other people into account at all. An egocentric person, on the other hand, relates everything to himself: discussions, whims, etc.'

Through this kind of interactive exchange of viewpoints and perspectives, students using *Cultura* are not 'receiving culture' but are involved in a reciprocal construction of one another's cultures. Students see that there can be variability in 'insider' views, and yet they can also be brought to see coherent patterns, which allow them to explore the contours of cross-cultural differences in concepts, values, and attitudes.

Several aspects of this exchange are interesting from a literacy standpoint. First, the students are writing in their respective mainstream language (which is presumably a second language for the MIT student) so that they can express themselves as freely and as fully as possible, and so that there is no discrepancy in linguistic competence, which might produce a power imbalance between individuals or between groups. As Furstenberg and English (2006) point out, however, there is another reason, namely that the students' discourse is itself an embodiment and reflection of culture and therefore constitutes a worthy object of analysis. This leads to the second point of interest: in the excerpt we see that while the MIT student is counting word frequencies, the French students take a more qualitative approach focused not on "*le sens brut*" but on nuances based on "*valeur*". The stark, direct, and explicitly marked rhetoric of the MIT student ("Observation:" "Question:") contrasts with the more philosophical genre of the French students' responses. The MIT student's interrogative stance gives way to a didactic (and from an American point of view almost chastising) tone in the first response. Will the MIT student take offense? Many new questions arise: what do "*la tradition sociale*" and "*aux dépends des autres*" mean in a French context, and how do they relate to the system of the *grandes écoles*? (and is this system a pure meritocracy?).

While a number of other studies have found promising results regarding the viability of telecollaboration for developing intercultural competence and understanding (e.g., Kinginger 2000; Meskill & Ranglova 2000; Mueller 1971; von der Emde & Schneider 2003), some studies show that intercultural contact in and of itself does not necessarily lead to cultural understanding. Language ability, linguistic style, academic cultures, and institutional and cultural characteristics are all factors that can affect learners' negotiation of meaning and cultural understanding (Belz 2002, 2003; Belz & Müller-Hartmann 2003), but from a literacy standpoint, two of the most significant yet not obvious factors are differences in communicative medium and communicative genres.

In her study of telecollaboration between German students of English and American students of German, Ware (2003, 2005) found a surprising lack of real interpersonal interaction – as marked by response to direct questions, use of second person pronouns, elaboration, and so on. Exploring possible causes of what she called "missed

communication", Ware found that time pressures and institutional constraints negatively influenced students' communicative choices, leading to disengagement, and missed opportunities for intercultural learning. The crucial point of Ware's findings is that missed communication can be *facilitated* by the nature of the CMC medium. Ware argues that the delayed response time and the lack of social consequences for dropping topics in many online contexts allows participants to be less active conversational partners. Expectations about appropriate communication in the online medium may furthermore pose challenges to the development of intercultural competence; the ability to engage in communication at a deep level of intercultural inquiry may be impeded by an online discourse norm that often favors speed and brevity over sustained attention.

Kramsch and Thorne (2001) question the very premise that the kind of communication found in intercultural CMC exchanges fosters intercultural understanding. Reinterpreting a French-American e-mail exchange characterized by unresolved conflicting views (Kern 2000), they propose that a clash in cultural frames and communicative genres, not just linguistic misunderstandings, is what hindered the participants' ability to establish common ground for cross-cultural understanding. What needed to be negotiated, they argue, "was not only the connotations of words…but the stylistic conventions of the genre (formal/informal, edited/unedited, literate/orate), and more importantly the whole discourse system to which that genre belonged" (p. 98).

Thorne (2003) offers a subsequent reinterpretation of the same exchange, pointing out that while communicative practices may be influenced by material aspects of the medium, they are not *determined* by the medium but rather negotiated dynamically through "cultures of use" (i.e., the norms and attributions that evolve out of everyday use of a medium). Moreover, cultures of use relevant to a given CMC environment (e.g., e-mail, chat rooms, instant messaging) can differ across social, generational, institutional, and national groups. For example, Thorne found that some of the students in the Penn State Foreign Language Project felt that e-mail was a much less appropriate medium for personal exchange with peers than instant messaging, and that their personal relationships with key partners improved after switching to instant messaging.

Hanna and de Nooy (2003) underscore the importance of communicative genres in their case study of two British and two American learners of French who participated in an online forum sponsored by the newspaper *Le Monde*. They show that the ease with which the learners entered the discussion with native speakers can be deceiving because the genre called 'discussion' is not universal, but varies across cultures.[16] In the context of this online forum, politeness and linguistic accuracy were much less important than a willingness to be socialized into, and to follow the online community's discourse rules. Through their analysis, Hanna and de Nooy show how

16. For cross-cultural genre differences in the context of e-mail, see Weiner (2005) and Biesenbach-Lucas (2005).

genre and culture interact to make communicative competence a relative construct, shaped by the conditions and constraints of particular communicative contexts.

Similarly, O'Dowd (2003) found that the most successful student pairs in a year-long e-mail exchange between classes in Spain and England tended to take the socio-pragmatic rules of each other's language into account and included questions that encouraged feedback and reflection. Students were more interested (and tended to write more, to learn more, and to change their attitudes towards the other culture) when they received reactions from partners after having explained aspects of their culture.

Taken as a whole, intercultural CMC studies reaffirm that cultural understanding does not automatically result from communicative contact alone, but depends on a negotiation of differences in genres, interaction styles, local institutional cultures, and culture more broadly. From a literacy standpoint, what is important to consider in intercultural exchanges is what *successful participation* means in different contexts – that is, identifying the respective cultures of reading and writing across different CMC contexts, different cultural contexts, and different pedagogical contexts.

3.4 Multimodal communication – desktop videoconferencing

As sound and video technologies become increasingly integrated into websites and documents, writing is often sharing the stage with other modes of expression in an overall dynamic semiotic environment. Text, icons, and images have long been read in relation to one another but now, in the context of videoconferencing, they are increasingly read in the context of speaking, listening, and interpreting gestures and body language.

In the spring of 2007, in collaboration with colleagues in Lyon and Berkeley,[17] I conducted a pilot study on the use of desktop videoconferencing between intermediate level French students at UC Berkeley and graduate students preparing a Masters degree in FLE (*français langue étrangère* 'French as a foreign language') in a joint program organized by the Université Lumière Lyon II and the Ecole Normale Supérieure (Lettres et Sciences Humaines) in Lyon. The Lyon teachers-in-training served as online tutors and developed multimedia modules on various cultural topics for the third-semester Berkeley French students, working in close collaboration with the Berkeley instructor to follow the existing course curriculum.[18]

17. Namely, Christine Develotte of the Ecole Normale Supérieure de Lyon, and Nicolas Guichon of Université Lumière Lyon II, who worked with the FLE teachers in training in France, and Désirée Pries of UC Berkeley, who taught the section of French 3 at UC Berkeley.

18. The modules elaborated on the topics presented in the textbook *Sur le vif* (Jarausch & Tufts 2006) and included the French educational system, youth culture, colonialism and the French-Algerian War, immigration, poetry, transportation, travel, fashion, and advertising.

The 16 Berkeley students in third semester French, assigned to eight pairs, met online with 16 Lyon tutors (also paired) for 30 minutes once a week over the course of 8 weeks.[19] Each of the eight pairs (both in Berkeley and in Lyon) worked side-by-side at one computer equipped with a webcam and two headphones/mics in a campus computer lab. We opted for a 2-on-2 rather than a 1-on-1 configuration to have two-way collaboration and support in order to reduce stress (on both sides) and to make for a more lively "conversational" dynamic.[20] The desktop videoconferencing platform was MSN Windows Live Messenger, which provided a videoconferencing window (webcam feed plus audio), a chat window for written interaction, and capability to upload documents, websites, and so on. Although both of our universities were equipped with more sophisticated videoconferencing facilities to make either Internet Protocol or ISDN connections, we consciously decided to use a far more modest setup for two reasons: 1) we wanted students and tutors to work in pairs (2-on-2) instead of working together as whole classes, and 2) we wanted to minimize equipment demands so that our research would be relevant to smaller institutions that might have computers, webcams, and internet access, but not expensive dedicated videoconferencing facilities.

What is interesting from a literacy standpoint is how the written chat feature was used in a variety of ways to complement the voice chat and video features.[21] The examples below are drawn from one session between Alice, a Berkeley student, and Eveline and Jeanne, her tutors.[22] Alice's class partner was absent on this particular day, and Eveline was handling most of the spoken interaction while her partner Jeanne (who still appeared on screen) contributed mostly through written chat. The topic for the

19. Eight weeks was the maximum possible overlap between the Berkeley and Lyon program calendars for spring semester. The Lyon students' seminar met on Wednesdays from 4-7 PM, and the California students' class met from 9-10 AM, to accommodate the nine hour time difference. The first hour of the Lyon seminar was reserved for discussion of pedagogical issues and final preparation for the online tutorials. Thirty minutes were devoted to online contact with the Berkeley students, and the balance of the seminar focused on follow-up discussion. On the Berkeley side, where classes met for 50 minutes, twenty minutes were reserved for offline follow-up activities with the course instructor.

20. One group was split into two one-on-one student-tutor pairs because one student, who was slightly hearing impaired, could not hear sufficiently clearly with the headphones, and so his Lyon tutor wrote to him with chat and he responded by speaking.

21. Zahner, Fauverge and Wong (2000) report on using videoconferencing in conjunction with a chat-tool to facilitate task-based reciprocal peer tutoring between learners of French in Cambridge and learners of English in Paris. The chat tool allowed participants to clarify lexical meanings and spelling issues and provided a written record in the planning phase, allowing the participants to externalize and reflect upon their ideas. Zahner et al. reported that having a writing tool proved to be a necessity even when the task was oriented towards spoken communication.

22. The participants' real names have been changed.

day was trips. In the first excerpt, writing serves as a *backup channel* for interaction when things get confusing or when speaking would interrupt a listening activity:

Eveline: *Alice, ce que je te propose c'est de t'envoyer une chanson en français. Tu vas écouter les paroles…* 'Alice, what I propose is to send you a song in French. You are going to listen to the words…'
Alice: *D'accord.* [OK.]
Eveline: *la musique… et tu vas regarder le clip aussi.*
'the music… and you're going to look at the video too'
Alice: Okay, okay.
Eveline: *Est-ce que tu as reçu le document*?
'Did you get the document?'
Alice: *Oui, oui.*
'Yes, yes'
Eveline: *Tu cliques sur le lien.*
'You click on the link'
Alice: *Oui.*
Eveline: *C'est un document Word.* 'it's a Word document'
Alice: *Oui.* 'yes'
Eveline: *Et tu as un lien.. internet.* *'And you have an internet link'*
Alice: *Uh, uh, est-ce que il est "le voyage"*? *'Is it 'le voyage'?'*
Eveline: *Oui, exactement. Est-ce que tu peux l'ouvrir*? 'Yes, exactly. Can you open it?'
Alice: *Um, je, uh, j'essaie, uh…*[long pause] *um, oui, oui.* 'Yes, I'm trying, uh… yes, yes'
Jeanne et Eveline write: *tu as trouvé le lien*? 'you found the link?'
Alice writes: *oui* 'Yes'
Eveline: *Ça marche*? 'Does it work?'
Alice: *Oui, il y a um…* [long pause] *Mais, um, le ligne n'est pas* [unintelligible] [pause]
'Yes, there is um… but the line is…'
Alice writes: *je suis confused*
Jeanne et Eveline write: *écoute la musique et les paroles* 'listen to the music and the words'
Alice writes: *est-ce qu'il y a un video*? 'is there a video?'
Jeanne et Eveline write: *oui, il y a une vidéo...* 'Yes, there's a video…'
Alice writes: *ok*
Alice writes: *qui est le chanteur*? 'who's the singer?'
Jeanne et Eveline write: desireless
Jeanne et Eveline write: *tu aimes*? 'do you like it?'
Alice writes: *un peu* 'a little'
Alice writes: *c'est bizarre* 'it's weird'

Eveline: *Oui, oui, oui, oui, je suis d'accord. C'est bizarre*. 'Yes, yes, yes, yes, I agree. It's weird'
Alice: *Oui*. [laughter]

The hyperlink Alice is asked to click on takes a long time to launch. Because Eveline cannot see the slow progress of the launch, she asks if Alice can open the link in the Word document she has sent her. There is a long pause, and Jeanne writes to Alice to inquire whether she has found the link. Alice tries to say that the line indicating download progress has not reached the end, but she has difficulty expressing this. Meanwhile, she has lost visual contact with Eveline and Jeanne because the open Word document covers the videoconference window on the computer screen. The length of the download is unsettling to Alice and she writes that she is confused. Jeanne writes back to reiterate the task (to listen to the music and the words), not realizing that the video has not yet launched. Alice writes to ask if there is in fact a video, and Jeanne replies affirmatively. Here writing offers a supplementary means of addressing uncertainties. Once the video launches, Alice uses writing to ask who the singer is and to give her reaction in writing because she cannot listen to the song and speak at the same time.

The chat function also served as a backup channel whenever there were technical problems with the sound (e.g., dropouts, noise) due either to bandwidth limitations or to headphone wiring issues. When audibility became a problem (and it not infrequently did), both students and tutors went automatically to written chat to continue their interaction. One student, who had difficulty listening with the headphones due to a hearing impairment, ended up working one-on-one with his tutor. She would use the chat function to write messages and he would respond in speech (both were surprised to find this to be a satisfying arrangement).

Another use of writing was to *clarify meaning* when pronunciation errors led to misunderstanding, as illustrated in the next two excerpts in which Eveline has difficulty understanding Alice until written clarification is provided:

Eveline: *Est-ce que toi tu aimes voyager*? 'Do you like to travel?'
Alice: *Oui, oui. J'aime aller à la plage..* 'Yes, I like to go to the beach'
Eveline: *A la plage*.. 'to the beach…'
Alice: *Oui, ou uh* 'Yes, or uh'
Eveline: *Oui*.. 'Yes'
Alice: *uh, aux pa[r]cs, parce qu'ils sont, ils ne sont pas.. chers…*
'uh, to pa[r]ks, becase they are, they aren't.. expensive'
Eveline: *Mais où est-ce que tu m'as dit? Alice, je n'ai pas bien compris. Aux Pâques*?
'But where did you say? Alice, I didn't really understand. At Easter?'
Alice: *Au pa[r]c* [without 'r'] *Oui.* 'At pa[r]k, yes'
Eveline: *Qu'est-ce que c'est*? 'What is that?'
Alice writes: *parc*
Eveline: *Ah, ah, parc, parc.* 'Oh, oh, park! Park!'

Alice: *Parc, oui.* 'Yes, park'
Eveline: *D'accord. Oui, oui. Parce qu'il n'y a pas d'entrée à payer, c'est ça*?
'OK, yes, yes. Because there's no entrance fee, right?'

Alice: *Une fois je suis allée avec mes amis et je.. nous.. nous allions à.. à plein air, à voir um les étroits dans uh sur la montagne et……*
'Once I went with my friends and I.. we.. we were going outdoors, to see um places in uh on the mountain… and…..'
Eveline: *Tu tu le.. tu tu, tu sortais avec tes amis en plein air*?
'You, you were going with your friends outdoors?'
Alice: *Oui. Et nous uh.. nous venons..*
'Yes, and we uh.. we just..'
Eveline: *Oui.* 'Yes'
Alice: *Non. Nous voyons, nous voyons les étroits.. et…*
'No, we see, we see places.. and….'
Eveline: Est-ce que tu peux écrire ce mot "les étroits"? Est-ce que tu peux l'écrire?
'Can you write the word "les étroits"? Can you write it?'
Alice writes: *etoile*
Eveline: Ahh!!
Jeanne et Eveline write: *les étoiles*! 'stars!'
Alice: [laughter]
Eveline: *D'accord, les étoiles*!! 'OK, the stars!'
Alice: *Oui*! [laughter] *Oui*! [laughter] 'Yes! Yes!'

Writing was also used to *reinforce new vocabulary* by offering a visual representation of words introduced in spoken form. In the example below, Alice does not respond in writing, but uses the new expression (*une offre de voyage*) in her speech.

Eveline: *D'accord… Pourquoi tes parents, pourquoi i.. ont-ils choisi le Japon? Ils aiment le paysage? euh.. lls aiment les villes euh.. du Japon*?
'OK… why did your parents choose Japan? Do they like the countryside? Um.. Do they like Japanese cities?'
Alice: Uh..
Eveline: *Ils ont vu quelque chose à la télé par rapport au Japon et ils voulaient, ils étaient curieux.*
'They saw something on TV related to Japan and they wanted.. they were curious'
Alice: *Um, oui, uh, nous.. nous étions uh, curieux et.. il y avait, une uh, une.. voyage "package" Une um,*
'Um, yes, uh, we were un curious and.. there was a… "package" trip, a… a…'
Eveline: *Une offre de voyage*? 'A travel offer?'

Jeanne et Eveline write: *une offre de voyage*
Alice: *Oui! oui. Uh, une offre de voyage uh comme uh, un "tour" dans les villes différents et les uh, les.. destinations touristes, t- touristiques.*
'Yes, yes. Uh, a travel offer uh like uh, a tour in different cities and the, uh, the.. tourist destinations'

Similarly, another student used writing as a resource by scrolling up and down in the chat window to locate relevant vocabulary to use in his *oral* responses.

Writing was also frequently used as a *comprehension check*, as illustrated by Jeanne's formulation of what she has understood of Alice's description, which Alice confirms as accurate – all the while she and Eveline are speaking:

Eveline: *D'accord. Est-ce que tu aimes la neige et la montagne*?
'OK. Do you like snow and the mountains?'
Alice: *Uh, oui. Mais il est très froide uh, je um.. il y a une ville uh près de Berkeley um, et il y a des montagnes à côté du ma ville et uh quand uh quand on, uh voy, voyage uh la ville on passe uh toutes les.. la neige uh…*
'Yes, but it's very cold, uh, I, uh, there's a town near Berkeley and there are mountains next to my town and when we, uh, go to the town we pass uh all the.. the snow…'
Eveline: *On voit la neige sur la montagne*?
'You can see the snow on the mountain?'
Alice: *Oui.* 'Yes'
Eveline: *quand on est dans la ville*. 'when you're in town'
Alice: *Oui, oui. Et on on passe uh sur la rue um.. qui est.. dans la montagne…*
'Yes, yes. And when you drive along the mountain road…'
Eveline: *Oui…*
Jeanne et Eveline write: *quand on est dans la ville, on voit la neige dans les montagnes*
'when one is in town one sees snow in the mountains'
Alice: *Oui.*
Alice writes: *oui*
Eveline: *D'accord*. 'OK" [laughter on both sides]

Students found such comprehension checks very helpful, especially in the first few sessions, because they were so insecure about their ability to make themselves understood to their Lyon tutors, and they were encouraged when they received confirmation that their meanings had gotten across.

A common use of writing by the tutors was to *correct students' errors*. Such correction did not interrupt the flow of conversation by virtue of being presented in a separate, visible, channel.

Eveline: *Et qu'est-ce que vous faites à la montagne p.. pendant les vacances d'hiver? Pourquoi tu n'aimes pas la montagne alors? Si tu y vas quand même avec des amis.*
'And what do you do in the mountains during the winter break? So why don't you like the mountains? If you go anyway with your friends'
Alice: *Oh, pour moi, je ne fais pas du ski ou du uh faire du al.. alpiniste*?
'Oh, for me, I don't ski or go mountain climb' [with error]
Eveline: *Alpinsime?* 'Mountain climbing?'
Jeanne et Eveline write: *je ne fais pas de ski, et pas d'alpinisme*
'I don't ski and I don't mountain climb'
Alice: *Oui, uh et je n'aime pas monter la montagne uh, et.. et il il fait froid.. et…*
'Right, uh, and I don't like to go up the mountain, uh, and it's cold…'

The students found this form of error correction particularly valuable not only because it was unobtrusive, but also because it provided a written record of spoken errors that could be saved for review. The tutors also wrote encouragements (e.g., *bon travail!, bravo!* or smileys), which students appreciated.

Finally, writing was used to *provide graphic explanation*. In the example below, Eveline suspects that Alice is thinking of the feminine gender *la mode* ("*elles sont les modes*…"), and as she begins to explain the semantic difference between *la mode* and *le mode*, Jeanne writes summary formulas (*la mode = fashion; le mode = une catégorie, un type d'hébergement..*) in the chat window, which Alice acknowledges in writing as she speaks:

Alice: *Oui. um et il y a uh un colonie de vacances et un bauge de jeunesse.*
'Yes, and there is a camp and a youth 'stel'
Eveline: *Et auberge de jeunesse. Tres bien. Ça, tout ça, tout ce que tu viens de me dire, ce sont de différentes manières de s'héberger, d'hébergemen*t.
'And youth hostel. Very good. Everything that you have just told me, it's different kinds of lodging'
Alice: Uh… uh…
Eveline: *Hôtel, colonie de vacances, auberge.* 'Hotel, camp, youth hostel'
Alice: *Um. Uh… uh… oui, uh elles sont les modes…*
'Um. Uh… uh… yes, they are fashions…'
Eveline: *oui* [pause] *C'est, il s'agit pas de la mode, Alice.*
'Yes… it's it's not about fashion, Alice'

Alice: *Oui.* 'Yes'
Eveline: *Tu sais, le le, quand on dit "la mode," c'est "fashion" c'est quelque chose qui, qui touche aux vêtements, aux accessoires.. Chanel, Dior.. euh, ça c'est la mode. Et sur ton tableau*
'Y'know, when you say "la mode" it's fashion, it's something about clothing and accessories.. Chanel, Dior.. that's fahion. And in your table…'
Jeanne et Eveline write: *la mode* = fashion
Alice: *Oui.*
Alice writes: ok
Eveline: *tu as le mode d'hébergement. Le mode d'hébergement, ça veut dire un type.. d'hébergement. Un type d'hôtel, un type de colonie de vacances, un type de.. d'auberge de jeunesse.*
'*you have "le mode" of lodging. "Le mode" of lodging means the kind of lodging. A kind of hotel, a kind of camp, a kind of youth hostel*'
Jeanne et Eveline write: *le mode = une catégorie, un type d'hébergement...*
Alice: *Oh, oui. Um… um…*
Eveline: *Jeanne t'a envoyé un petit texto.* [
'Jeanne sent you a little text message'
Alice: Oh!
Eveline: *Tu l'as reçu*? 'Did you get it?'
Alice: *Je comprends. Oui. Um…* 'I understand. Yes, um…'
Alice writes: ok
Eveline: *Voilà, t'as compris. Très bien.* 'OK, you get it. Good'
Jeanne et Eveline write: *par exemple un hôtel, une auberge de jeunesse...*
'for example, a hotel, a youth hostel…'

In all these examples, writing is occurring during listening such that the two channels of communication (spoken, written) are being used not only simultaneously but also to complement one another. This is interesting with regard to literacy because it recalls ancient conceptions of writing as being intimately tied to speaking. For example, according to O'Donnell (1998: 54), the earliest manuscripts were thought of as little more than prompt-scripts for speech.

Following the last videoconferencing session, students were given a written questionnaire and were interviewed.[23] Their responses were unanimously positive about the overall experience of videoconferencing and 12 of the 16 students said they felt significantly more confident in their ability to speak French after the eight videoconferencing sessions. A number of students reported that the combination of spoken and written feedback was particularly helpful:

23. Fourteen of the sixteen students were interviewed.

> I was not overly concerned with making mistakes in my speech, because I knew that if I did, the tutors would still be able understand and correct me. As a result, I spoke more fluently, if not correctly, and understood them better. It was also helpful to have them type a word out that I did not understand. When either my partner or I did a good job, the tutors were very quick to tell us. They were not shy about providing feedback that was both positive and critical, and I really appreciated that. (questionnaire)

> The written feedback definitely helped a lot for new vocabulary, because sometimes, if it's a word that I'd never seen before, it was helpful to hear it and also see what it looks like, so I'd be more likely to remember it. (interview)

> They would always tell us when they were going to write something so we never missed a written message. It was also helpful to see the new vocabulary that they taught us written down, so that it would be easier to remember. The written account of the session was also helpful in recapping at the end of class. (interview)

> When they were giving us instructions, they would sometimes type up really quick sentences, just to kind of summarize the instructions that they were giving us in case we didn't quite understand what they were saying or maybe it didn't get through clearly like maybe the audio was chopped up. I found the written instructions were a really good way to keep the conversation flowing and not have these long awkward moments. (interview)

One potential problem, however, had to do with the interface, which would allow the chat window to be hidden behind other windows:

> I usually paid attention to the written feedback, but there would sometimes be an open window covering the feedback and I wouldn't realize it was there. (interview)

Another issue was whether students paid attention to written feedback, since it appeared in a separate window from the videoconference window. Most students reported that they regularly monitored the chat window (since instant messaging is a part of their daily routine, they are experienced at using IM while doing other activities such as watching videos or writing papers). However, one student reported that she didn't take notice of the chat window at the early sessions but "began looking more and more at it" once she realized that her tutors were writing.

One student who was accustomed to using a Mac was reluctant to type much because of not knowing how to make accents on the PC in the lab:

> I think I probably would have typed a little more just because occasionally... places I did type were when they would not hear a word that I was saying, either vagaries of my accent or noises or I'm just saying it funny. And so occasionally I would type it to make it clear. But there were times, especially actually when we were still sort of transitioning and figuring out how I was going to communicate with them

> and so on, when I would have typed longer sentences, but I actually found myself getting self-conscious about, um, there's no aigu, I can't do it right. (interview)

The fact that the French tutors were not using accents did not ease his self-consciousness. This is one example of a clash between one culture of communication (formal written expression, prized in academic contexts) and another (informal interpersonal electronic writing), in which new environments and the practices associated with them can become sites of uneasy personal transition.

As discussed earlier, Ware (2003, 2005) had found that asynchronous CMC could induce missed communication. A question for future research is whether videoconferencing ameliorates that problem (e.g., enhancing communication by virtue of its visual immediacy, voice transmission, and potential to create a greater sense of personal contact) or whether it merely creates other problems. O'Dowd (2006) takes a first step in this direction by studying the use of videoconferencing in tandem with e-mail to compare their respective contributions in intercultural exchanges. He found that although e-mail was a more effective platform for providing in-depth background on issues, participants' differences of opinion tended to be left unexplored on e-mail, whereas in face-to-face videoconferencing, students were "in a way, *obliged by the nature of the medium* to delve further into the topics in question in order to find out why the other group felt the way it did. It was when they did this that the link between their partners' behavior and beliefs and the personal, social, and historical factors began to emerge" (p. 104, personal emphasis).

4. Implications for research in second/foreign language acquisition

In the sections above we have seen examples of literacy as acts of communication in material space. Mediated by digital technology, these acts of literacy involve new resources, new practices, and sometimes some new language forms. What relevance do these changes have for 21st century language learners and for the researchers who study them?[24]

4.1 Can CMC contribute to SLA?

The first and most obvious question regarding technology, literacy and language learning is whether the kinds of resources and practices we have considered above foster the

24. Given the focus on research in this volume, I will not elaborate on pedagogical implications, but rather refer the reader to some of the many recent publications that deal with pedagogical implications (e.g., Arnold & Ducate 2006; Felix 2005; Quintin & Masperi, 2006; Thorne, 2006; Van Deusen-Scholl et al. 2005; Ware & Kramsch 2005). For French research on online language pedagogy, see the online journal *ALSIC* (*Apprentissage des langues et systèmes d'information et de communication*) at alsic.org.

development of learners' language and literacy abilities and intercultural competence. In principle, CMC offers several important advantages. First, it allows for communicative interaction at any time of day or night, either with classmates, native speakers, or other learners from around the world. Second, it provides ample opportunity for negotiation of meaning (e.g., Blake 2000, 2005; Jepson 2005; Pellettieri 2000; Smith 2003). Third, the fact that it usually takes written form gives students the opportunity to attend to details of form and content both during interpersonal communication and afterwards, thereby lending itself to close analysis of difficult structures, communication strategies, and cultural misunderstandings (O'Rourke 2005; Toyoda & Harrison 2002).

Most research on the relationship between CMC and language learning tends to fall into two camps. The first emphasizes SLA theory and interactionist models of learning, and tends to focus on quantitative analysis of morphological, lexical, and syntactical features of online discourse. The aim is generally to determine whether technology-mediated interaction can support language acquisition at least as well as face-to-face interaction does. The second camp draws more from sociocultural and sociocognitive theories and typically involves a mixture of quantitative, qualitative, ethnographic, and discourse analytic methods, with an aim of understanding how learners interpret and construct meaning online across culturally situated contexts. Both camps typically focus on university-level foreign language learners in synchronous and asynchronous environments.[25]

Although the question of effectiveness seems straightforward, answering it is not. Many intervening variables come into play. For example, CMC (or technology, even more broadly) can be used in myriad ways in myriad contexts. Some combinations may be effective, and some not, but the judgment of effectiveness cannot be separated from the specificities of the learners, the setting, the task(s), the type of assessment, and so on. Furthermore, the particular theoretical bent of the researcher concerning what 'counts' as acquisition makes a difference. For example, in his investigation of CMC tasks and meaning negotiation, Blake (2000) found that CMC provided a good environment for negotiating meaning. However, he found a predominance of *lexical* negotiations and relatively few *syntactic* negotiations, leaving open questions about the extent to which CMC supports grammatical development. On the other hand, if we look at language learning from a broad semiotic perspective, we will be less interested in whether learners successfully acquire a particular linguistic structure and more interested in how they attempt to deal with specific communicative situations with the linguistic, cognitive, social, and material resources available to them. The complexity of the issues is such that we need to understand effectiveness in terms of the specifics of *what* people do with computers, *how* they do it, and what it *means* to them. For these reasons, research cannot answer the language learning question in any absolute sense, but only in a highly context-specific sense.

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25. For recent reviews of the literature, see Kern (2006), Kern et al. (2008), and Thorne and Payne (2005).

A second, related question is whether whatever is learned via CMC can transfer to other, non-CMC contexts or modalities (e.g., speech). Several recent studies attempt to address this question, some focusing on oral performance as the dependent variable (Abrams 2003; Beauvois 1997; Payne & Ross 2005; Payne & Whitney 2002) and others focusing on writing (Davis & Thiede 2000; Schultz 2000; Sotillo 2000). Results to date are encouraging, but not conclusive. In Abrams' (2003) study, for example, students who had been assigned to a synchronous conferencing group produced more language in their face-to-face speech than those in the control group, but there were no differences in the *quality* of language as measured by lexical richness, lexical diversity and syntactic complexity. Looking at writing, Schultz (2000) compared how French learners made use of peer editing feedback in computer-mediated and oral discussion. Instead of a simple superiority or inferiority effect for computer-mediated feedback, she found a complex interrelationship of students' level, activity type, and medium.

When considering effects on writing, it is important to remember that while CMC and academic writing share the same graphic medium, they are quite different with respect to their relevant genres and styles, and therefore they highlight different aspects of written communication. Moreover, as Bolter (1991: 238) has pointed out, digital technology supports "every form of reading and writing from the most passive to the most active", thus making it difficult to make generalizations about computers and their effects on reading and writing. Research questions therefore need to be framed in terms of specific goals. For example, aspects such as grammatical accuracy, stylistic refinement, global coherence, and sustained, logical development of ideas are more likely to be fostered in traditional academic writing. CMC, on the other hand, tends to encourage fluency (in terms of both speed and quantity of language production), lively interactive responsiveness, a blending of 'orate' and 'literate' styles and devices, and the voicing of multiple perspectives on topics. Given these differences, it would not be obvious to assume that using CMC would directly improve learners' ability to write a formal essay.

Nevertheless, the complementarity of the two modes of written communication suggests ways they might be fruitfully used together in a curriculum. In principle, CMC is well suited to the invention stages of a writing project (for example, the rapid generation of ideas through collective brainstorming), as well as certain aspects of the revision process (for example, the collection of multiple reader responses and peer editing feedback). The presumed advantage of using CMC for these activities is that learners obtain full written transcripts of what are normally fleeting oral activities – transcripts that can be subsequently analyzed, discussed, and reflected upon, both inside and outside the classroom.

4.2 Research methodology

Because research on technology and language learning seeks to understand complex relationships among learners, teachers, content, and technology within particular

social and cultural contexts, the theoretical perspectives it draws on tend to be wide ranging. While second language acquisition remains central, literacy studies, discourse analysis, sociocultural theory, semiotic theories, sociolinguistics and ethnographic methods from anthropology are increasingly called upon.

One result of this trend toward interdisciplinary approaches is that research has become generally less quantitative and more qualitative. In order to maximize validity, Ortega (1997) urges researchers to diversify data sources and to seek relationships across observed behavior, language transcripts, interview data, self-reports, and measures of linguistic performance. In intercultural exchanges, Müller-Hartmann (2000) stresses the importance of collaboration among *all* the teachers involved, since the triangulation of perspectives enhances the reliability of findings – especially when studying learning processes that involve culture as well as language. Given the complexity of the issues, Chapelle (2003) recommends creating research teams that involve technologically-minded people (to realistically assess technical issues and feasibility), socially-minded people (to deal with pragmatic and social dimensions), and critically-minded people (to deal with ethical implications).

On the level of assumptions underlying CMC research, one issue that needs careful consideration is that most of the existing research in SLA theory and in cross-modality transfer presupposes 1) that language itself remains a relatively stable, normed object, and 2) that the overarching goals, outcomes, and processes of language learning are generally the same, regardless of the extent to which the space in which learning occurs is physical or virtual. These assumptions may not be fully justified in light of the changes in practices, forms, and cultures of reading and writing we have seen in this chapter. Variability in technology, intentions, and purposes leads to a range of online language that can resemble hybrid forms of standard and nonstandard language. The ways that learners think about language, communication, and their own identities may be radically different when mediated by computer screens and keyboards. We have seen that cultures of reading and writing change over time. It is important that our research questions and methodologies be ecologically valid – if we are looking at CMC literacy, then it is important to adjust our assumptions, questions, and methods accordingly and not operate from a perspective of print literacy culture.

One aspect of this shift has to do with how we look at the relationship of text and context. Jones (2004) calls for much closer attention to the various environments (physical and virtual) *within* and *surrounding* CMC use in order to better understand the texts that learners produce. An important part of CMC literacy culture, Jones argues, is what he calls "polyfocality", the partitioning of attention that goes along with multi-tasking, which makes figure/ground distinctions often blurry (are students sending instant messages in the context of doing an online assignment, or are they looking at their assignment in the context of IM-ing their friends?). Jones proposes that young people operate with multiple figures on multiple grounds, and that we consequently need to rethink our assumptions that communication occurs (and should be studied) within "clear and discernable primary involvements" (p. 27). Studying such

complex overlapping contexts will most likely require the incorporation of ethnographic methods involving thick description of the contexts, contents, people, and procedures associated with CMC literacy events.

In contrast to face-to-face conversation, online negotiation of meaning takes place in writing, which provides a readily usable database of transcripts for classroom and research use. To date, the vast majority of research on CMC has been text-based. This has been a major benefit for SLA-based research because of the ease of collecting interactional data online. But now image and voice are becoming integral parts of how we interact and represent ourselves online. As more work is done that explores multimodal learning contexts, data collection and analysis will become more complex and time consuming. And ethics will be an increasingly important issue in data collection. The Internet allows researchers to collect data easily without subjects' knowledge or consent, but communication that might be interpreted as "public" by a researcher may be considered very private by the individuals involved. Because definitions of public and private are not clear-cut when it comes to the Internet, it is important that researchers follow procedures for obtaining informed consent of subjects. This issue is discussed sporadically in the literature (e.g., Crystal 2001; Lotherington 2005), but is addressed in depth in Frankel and Siang (1999).

5. Conclusion

As new literacy technologies come along, they are accompanied by new values, new norms, and new practices of meaning making. We generally think of writing as a conservative force, a "fixing" of language on material surfaces, preserved and sometimes cherished. But what we find when we look at writing in electronic environments is a buzzing array of new forms, new conventions, and new purposes – reflecting new cultures of reading and writing. In our discussion of new forms in French, we saw how form follows function. However, in the section on language play, we saw how function sometimes follows form. Similarly, online intercultural exchange projects destabilize and problematize monolithic notions of culture and highlight the idea that culture is negotiated and dynamic, not static. Throughout, we have seen that writing in electronic environments is often evanescent rather than permanent, often improvised rather than planned, and highly responsive to new communicative needs.

In sum, literacy associated with information and communication technologies moves us away from uniform, stable norms to multiple, dynamic norms. Cultures, contexts, genres, practices, and even language are not monolithic – all are constructed and negotiated through the processes of interpretation, collaboration, problem solving, and reflection that constitute literacy. For language teachers and for language researchers, this shift in perspective has important implications for what we consider relevant, how we conceptualize notions of competence, and how we envision the future of language learning and teaching.

6. Directions for future research

Whereas early research on technology and language learning tended to look for relatively simple cause-effect relationships between human-computer interaction and learning, more recent research seeks to understand complex relationships among learners, teachers, content, and technology within particular social and cultural contexts. As a result, cognitive and linguistic approaches have been substantially supplemented by social perspectives, and studies of computer-based language learning now commonly draw upon many disciplines, as discussed in the research methodology section. This social move is particularly important when one considers that Internet use is not just about connecting with information, but connecting with people, and that the social networks we access via the Internet may be substantially different than those we inhabit in "real" life.

As culture is increasingly viewed as inseparable from language in pedagogical contexts, more research will be needed on how culture functions in the various computer-mediated social networks in which language learners participate, and how their participation reframes their representations of themselves and others with whom they interact. Until now, terms such as cross-cultural and intercultural have been used somewhat interchangeably, and the task of researchers will be to refine the terms and develop viable methodologies and theories for examining issues of (pluri)cultural representation, identification, and contact in online contexts. Work in this area will not only influence how we define language learning in general, but also how we define concepts of competence, as well as how we frame online pragmatics and sociolinguistics.

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CHAPTER 9

Forensic linguistics and French

Douglas A. Kibbee
University of Illinois at Urbana-Champaign

Nous examinons rapidement les cinq domaines de recherche en linguistique forensique, avant de nous consacrer à l'étude de la notion du désavantage linguistique dans l'histoire de la France. L'importance du désavantage linguistique n'est devenue primordiale qu'après des réformes dans la procédure juridique et l'expansion du pouvoir royal. La langue du roi s'est installée avec la justice du roi, et s'est répandue avec les conquêtes et les acquisitions territoriales des Bourbon. Après la Révolution, la politique d'égalité s'est poursuivie par une politique d'uniformité linguistique, réduisant le nombre de citoyens qui ne parlent pas la langue du gouvernement, et le désavantage linguistique de la très grande majorité de la population. Nous examinons en particulier l'emploi des interprètes et des traducteurs dans les cours de justice, et les restrictions bureaucratiques concernant les prénoms. Puisque les autres domaines de la linguistique forensique sont, jusqu'à présent, peu étudiés dans le monde francophone, c'est un domaine de recherche particulièrement fertile pour les jeunes chercheurs.

After a review of the five major areas in which forensic linguistic research is active, we examine in particular the notion of linguistic disadvantage as it has evolved in France. The importance of linguistic disadvantage is related to the inquest method of legal procedure, and grew with the increased power of the king's law, as opposed to local customary law. The king's language spread with the king's justice, even as new conquests and acquisitions gave the king dominion over more regions that spoke languages other than French. After the French Revolution, the policy of equality through linguistic uniformity steadily reduced the number of non-French-speakers, and the linguistic disadvantage of many French citizens. We examine the use of interpreters and translators in the court system, and also the requirements relating to the registration of names for newborns. The dearth of research on forensic linguistics in the Francophone world makes this a particularly fertile field for the future.

1. Introduction

Forensic linguistics is a very broad term covering all aspects of the intersection of language and law. The *Association Internationale de Linguistique Appliquée* Commission on Forensic Linguistics has identified five areas of special interest:

1. The study of the language of the law, including the language of legal documents and the language of the courts, the police and prisons.
2. The study, the provision and the improvement of professional legal interpreting and translation services.
3. The alleviation of disadvantage produced by language in legal processes.
4. The provision of forensic linguistic evidence that is based on the best available linguistic expertise.
5. The provision of linguistic expertise in issues of legal drafting and interpretation, including plain language drafting (cited in Gibbons 2003: 12).

All of these domains are much more highly developed in the English-speaking world, as evidenced by the two major organizations working in Forensic Linguistics, the International Association of Forensic Linguistics (all of the officers are English speakers) and the International Association of Forensic Phonetics and Acoustics (all of the articles of its journal are in English). Some German and Dutch scientists have been active in this area as well, but the Francophone world is very poorly represented in this type of research. This may be the result of the different legal systems, or other institutional factors.

Some professional groups in the Francophone world have been concerned by the opacity of legal terminology and legal discourse, addressing the first and fifth areas of forensic linguistics described above. For instance, the *Association Syndicale des Magistrats* in Belgium conducted a study in 2001–2002 seeking to simplify legal language so that ordinary citizens could understand. The results were published in the booklet *Dire le droit et être compris*, suggesting that certain terms be replaced by plain language, for instance:

> *Ouï Madame le procureur du Roi en ses requisitions, le prévenu en sa défense…*

would be replaced by:

> *Le Tribunal a entendu Mme Le Procureur du Roi et (la défense de) M. X à l'audience du …* (cited in http://www.asm-be.be/fichierpdf/langagejudBoulogne.pdf, p. 3, consulted December 10, 2007).

Noteworthy here is the replacement of the archaic verb *ouïr* by *entendre*, and the substitution of a finite verb for the participial construction. In general, the committee railed against complex sentences, insisting on the principle "one idea, one sentence". Nonetheless, systematic study of legal language and the use of language by officers of the court – such as we find in Tiersma (1998) or O'Barr and Conley (1998) – is scarce

or non-existent in the Francophone world, a large area of opportunity for applied linguists interested in this area.

The use of forensic linguistic evidence has received some attention in the Francophone world, but again much less than in Anglophone police circles. Forensic linguistic evidence might help police limit the range of suspects, for instance a voice sample of a perpetrator might serve to determine that he or she is from a particular region with a distinctive accent. Voice samples can also serve, even more controversially, to identify individual speakers. Voice identification is a common fantasy of science fiction, or even regular fiction (Solzhenitsyn's *First Circle*) and serves the Biblical story of Isaac (Genesis 27: 22), but has received mixed reviews in legal circles. Unlike fingerprints, voiceprints are not constant, but vary widely within the speech of a single speaker. Because of the scientific uncertainties, Interpol reports that speaker identification by voice is not generally accepted (Broeders 2001). However, in the United States, voice identification is admissible in some states, but not in others.

In the Francophone world, the primary efforts in this domain appear to be coming from the *École des Sciences Criminelles* and the *Institut de Police Scientifique* in Lausanne, Switzerland. There, the emphasis has been on the study of the influence of recording and transmission mechanisms on the accuracy of voice identification systems. Gisela Ribary (2002) and Philipp Zimmermann (2005) wrote final-year projects under the direction of Filippo Botti and Didier Meuwly.[1] Ribary wondered first whether voices could be disguised, and then what the effect of the recording machinery would be. In both cases, the effects are substantial, calling into question voiceprint accuracy. Once again, an area of great interest and scientific activity in the Anglophone world has been relatively unexplored in the Francophone world.

Dialect variation in the criminal system is also used for identification. In the US courts, very inexpert evidence of the sort "the perpetrator sounded like he was from the Bronx" or "sounded African-American" has routinely been admitted (e.g., *Clifford v. Chandler*, 333 F.3d 724, 2003). It is quite possible that similar evidence asserting an *accent beur* (see Pooley's contribution in this volume) has been used in the French courts, but because of differences in the way court records are kept, we have no proof of such statements.

The one area that has received attention in Francophone forensic linguistics is the notion of linguistic disadvantage, which also touches on legal interpreting and translation. Given this orientation in the Francophone world, I shall focus in the following on this aspect of forensic linguistics, which includes to some extent the first, second and fifth. My approach is historical, as I attempt to show the ways disadvantage have been considered, and the reasons for change.

1. Ribary's presentation is at http://www.ippobotti.net/projects/GiselaRibaryPresentation2002.pdf; Zimmermann's at: http://www.ippobotti.net/projects/Phillipp_Zimmermann_Report2005.pdf.

2. Medieval legal procedure and language

Changes in the legal process are fundamental to the increasing importance to the question of disadvantage produced by language. The first and biggest change had to do with the importance of language itself. Trial by ordeal – either a judicial duel as in the battle between Pinabel (championing Ganelon) and Thierry (for Charlemagne) in the *Chanson de Roland*,[2] or by some other test of honesty, typically fire or water[3] – was attacked starting in the 9th century by Agobard, and by several popes before being outlawed by the Fourth Lateran Council in 1215. The intellectual basis for this major change in Western law was that one cannot prove a negative (i.e., lack of guilt); therefore, it was the duty of the court to prove guilt, rather than the duty of the accused to prove lack of guilt (see Lévy 1965). This led to a new importance accorded to witnesses; previously, guilt or innocence was established by an oath, which was 'co-sworn' by witnesses. These witnesses were more proof of the believability of the oath, rather than evidence. Eyewitnesses were expected to make depositions before a judge or an officer of the court. The judge could question them. All of these acts make language a key part of the judicial process, and not just any language, but the vernacular language of the witness, and ultimately of the accused. The result, in the French system, was the elaboration of a royal judicial apparatus designed to collect and evaluate proof of guilt. This legal system would – gradually to be sure – establish French as the language of the King's law.

Over the course of the fourteenth century, the judicial bureaucracy and the chancery took root. Lusignan (2004: 114) demonstrates the change in the language of this bureaucracy, noting that up to 1330, 25% of the chancery acts were being written in French, and after 1330, more than 90% were written in French, except during the short reign of Jean II. Those ordered by the king are in French; those ordered by the Chancellier are often in Latin (Lusignan 2004: 114). The change was encouraged by the necessity of vertical communication to consolidate the power of the king during periods of crisis – the beginning of the 100 Years War, the revolt of Étienne Marcel and the Jacqueries of the 1350s. During the reign of Charles V, a massive translation program was undertaken, including not only philosophical treatises, but also papal bulls and encyclicals. The best known translator of the king, Nicole Oresme, stated his belief that "the division and diversity of languages was inimical to civic conversations and to living as a single polity". Every subject of the king should understand the king's language.

However, in France, little was directly "King's law". The vast majority of day-to-day legal matters, such as contracts, wills, and the first level of criminal law, were the purview of local law, the *justice seigneuriale*. This law was primarily customary and oral,[4]

2. For a literary history of judicial combat see Blaive (1991).

3. The history of trial by ordeal is described in Bartlett (1986) and Langbein (1977).

4. Some local *coutumiers* had been written down (e.g., the *Coutumier de Beauvaisis*) but these were performed privately and had no legal authority.

though roughly based on the Roman traditions transmitted through Justinian. Estimates of the number of local legal systems run to the tens of thousands.[5]

3. Attempts to unify the language of the law in the *Ancien Régime*

A crucially important transformation for the language of the law, and the French language in general, was a decision by King Charles VII. The Édit of Montil-les-Tours (1454) was part of a general reform of the legal system, including the creation of new *Parlements* (appeals courts), with the goal of reestablishing royal control over territories that had been under English occupation during the Hundred Years War (1337–1453), or else were operating semi-independently to take advantage of his predecessors' weakness. The reason proferred was the desire to speed up trials, to make them less costly, and to make the judgments rendered more certain by making them more uniform throughout the country:

> (Art. 125) *Et que les parties en jugement, tant en nostre court de parlement que pardevant les autres juges de nostre royaume, tant nostres qu'autres, proposent et allèguent plusieurs usages, stiles, et coustumes; qui sont divers selon la diversité des pays de nostre royaume, et les leur convient prouver, par quoy les procez sont souventesfoys moult allongez, et les parties constituées en grans frais et despens; et que si les coustumes, usages et stiles des pays de nostredit royaume, estoient rédigez par escrit, les procez en seroient de trop plus briefz, et les parties soubslevées de despenses et mises, et aussi les juges en jugeroyent mieux et plus certainement; (car souventesfoys advient que les parties prennent coustumes contraires en un mesme pays et aucunesfoys les coustumes muent et varient à leur appétit, dont grandz dommages et inconvéniens adviennent à noz subjectz.) Nous voulans abréger les procez et litiges d'entre noz subjectz et les relever de mises et despens, et mettre certaineté ès jugemens tant que faire se pourra, et oster toutes matières de variations et contrariétez, ordonnons, et décernons, déclairons et statuons que les coustumes, usages et stiles de tous les pays de nostre royaume soyent rédigez et mis en escrit, accordez par les coustumiers, praticiens et gens de chascun desdiz pays de notre royaume, lesquelz coustumes, usages et stiles ainsi accordez seront mis et escritz en livres, lesquelz seront apportez par-devers nous, pour les faire veoir et visiter par les gens de nostre grand conseil, ou de nostre parlement, et par nous les décréter et conformer; et iceux usages, coustumes et stiles ainsi décrétez et conformez, seront observez et gardez ès pays dont ilz seront, et ainsi en nostre court de parlement ès causes et procez d'iceux pays; et jugeront les juges de nostredict royaume, tant en nostre court de parlement que noz baillifs, sénéschaux et autres juges, selon iceux usages, coustumes et stiles, ès pays dont ilz seront, sans en faire autre preuve que ce qui sera escript audit livrez et*

5. Laingui and Lebigre (1979: 75) estimate the number between 60 000 and 80 000.

> *lesquelles coustumes, stiles et usages, ainsi escritz, accordez et conformez, comme dict est, voulons estre gardez et observez en jugement et dehors.*
>
> ‘Because the parties in the case, both in our royal courts as well as before other judges in our kingdom, call on many laws and legal procedures, which are as diverse as the many regions of our kingdom, and because they are obliged to put them to the test, for which reason trials are often lengthened to the extreme, and the parties incur great fees and expenses; and if the laws and legal procedures of the regions of our kingdom were written down, trials would be greatly shortened, the parties would be relieved of expenses, and judges would be able to reach their decisions better and with greater certainty. (For often it happens that parties claim differing customary law even within the same region, and sometimes these laws change and vary according to their desire, which results in great harm and inconvenience to our subjects.) We, wishing to shorten trials and other litigation between our subjects, to relieve them of the accompanying expenses, to place as much certainty as possible in the decisions rendered, and to remove variation and contradictions, order and decree, declare and rule that the laws and legal procedures of all the regions of our kingdom be written down, and be approved by the lawyers, legal practitioners, and the people of each of those regions. The approved forms of the laws and procedures will be issued in books, which will be delivered to us, so that they can be reviewed by the people in our Grand Council, or by our royal court, so that we can issue them as laws in their final form. These laws and procedures, thus finalized and decreed, will be observed and kept in the regions from which they come, and also in our royal court when cases and trials come from those regions. Our royal court as well as our bailiffs and seneschals (royal legal representatives) in each region, will judge according to these laws and legal procedures, in whatever region they are in, without considering any other legal practice besides that written in the said books. We insist that these laws and legal procedures, duly written down, agreed to, and reviewed and finalized, as has been said, be kept and observed in judgments and elsewhere’.

The result, though, was to impose the language of the *Parlement de Paris* on local legal language. The process required the participation of the king’s legal authorities in the local gatherings of legal officials, and then approval by the *Parlement de Paris* and the King’s Council. To gain such approval, the local language had to be in accord with the language of Paris.

However the process was so clumsy that the transformation of oral customary law into a written code was slow. After some procedural changes and more insistence on the part of the royal administration,[6] the pace picked up in the sixteenth century. By the end of the *ancien régime*, 65 general coutumiers and more than 300 local coutumiers had been approved (Grinberg 2006: 75). The centralization and uniformization of

6. See for instance the King’s request to the bailli of Sens (August 17, 1481) demanding that the work be done within two months (cited in Gandilhon 1944: 322–323).

French law thus had a profound impact on the centralization and uniformization of the French language, from the many dialects of Northern Gallo-Romance.

The other change in the language of the law in France was the imposition of French in the place of the learned language, Latin, and of the clearly distinct local languages: Breton, Flemish, German, the Occitan languages of the Midi, Basque, Italian. In the late fifteenth and continuing through the seventeenth century, another force extended royal authority with important consequences for the language of the law. This was the expansion and the consolidation of the territory under the King's control.

A series of edicts in the late 15th and early 16th centuries attacked the use of Latin or Latinate legal jargon in the southern half of the country. This region generally used one form or another of what was termed *droit écrit*. While not uniform, it was more consciously based on Roman law and made generous use of Latin in legal documents. In 1490, the *Ordonnances sur le reglement de la justice au païs de Languedoc* required that witnesses' testimony be recorded as heard *en langage François ou maternel* so that the witnesses could read them and verify that the depositions were authentic (article 101). In 1510, article 47 of another ordonnance tried to redress the same issue, this time specifically mentioning Latin as the problem and declaring any criminal trials in which Latin is used to record the testimony or the judge's decision will be null and void. A similar order in 1533 banned the use of Latin in contracts. With little progress, apparently, from the ordonnances of 1490 and 1510, François Ier issued the ordonnances d'Is-sur-Tille in 1535, this time clearly favoring French over the use of local vernaculars:

> *Pour obvier aux abbus qui sont ci devant advenus au moyen de ce que les juges de nostre dict pays de Prouvence ont faict les procès criminels dudict pays en latin, ordonnons, affin que les tesmoings entendent mieux leurs dépositions et les criminels les procès faits contre eux, que doresenavant tous les procès criminels et les enquestes seront faictz en françoys ou a tout le moins en vulgaire dudict pays* (Chapter XIII, article 57)
>
> 'To put an end to the abuses that until now have occurred because of the use of Latin in criminal trials by the judges in our region of Provence, we order that henceforth all criminal trials and inquests be performed in French, or at least in the local language of the said region, so that witnesses can better understand their depositions and criminals can better understand their trials'.

This series of *ordonnances* culminates in the much more famous *Ordonnances de Villers-Cotterêts* (1539). This is much more sweeping, as it applies to the entire kingdom rather than just the southern provinces, and because it requires that French be used in all legal matters. The specific target is the intelligibility of judicial decisions, but the king makes clear he wants all aspects of the legal process to be conducted and recorded in his language:

> *Article 110. Et afin qu'il n'y ait cause de douter sur l'intelligence desdits arrêts, nous voulons et ordonnons qu'ils soient faits et écrits si clairement, qu'il n'y ait ni puisse avoir aucune ambiguité ou incertitude, ne lieu à demander interprétation.*
> *Article 111. Et pour ce que telles choses sont souvent advenues sur l'intelligence des mots latins contenus esdits arrests, nous voulons doresnavant que tous arrests ensemble toutes autres procedures, soient de nos cours souveraines et autres subalternes et inférieures, soient de registres, enquestes, contrats, commissions, sentances, testaments, et autres quelconques, actes et exploicts, de justice, ou qui en dépendent, soient prononcés, enregistrés et délivrés aux parties en langage maternel françois et non autrement.*
>
> 'Article 110. So that there is no reason to doubt the interpretation of the said decisions, we wish and order that they be drawn up and written so clearly, that there is not and cannot be any ambiguity or uncertainty, nor place to require interpretation.
> Article 111. And because such things have often happened through the interpretation of Latin words contained in the said decisions, we wish henceforth that all decisions, along with all other procedures of the courts or emanating from them, both in our royal courts and other lower courts, whether they be registers, inquests, contracts, commissions, sentences, wills, or any other official acts or notices, be pronounced, recorded, and delivered to the legal parties in their maternal French language, and not in any other'.

To a certain extent, this was a formalization of what was already a *fait accompli*. Latin had been replaced by French in most areas of southern France before this, but some were moved by the king's action to change their practice, as exemplified by a notary in Lodève:

> *Pour ce que le roy, nostre souverain seigneur, par ces nouvelles ordonnances, entre aultres choses a ordonné que les notaires reddigeroyent en françois les actes et contraultz que prendroyent, satisfaisans et oubéyssans à icelles, à l'aide du Créateur metray peine et dilligence doresenavant reddiger mes actes et contraultz en langue françoyse* (cited in Laurent 1989: 86).
>
> 'By the fact that the king, our sovereign lord, by these new decrees, among other things has ordered that notaries compose in French the acts and contracts that they take down, meeting and obeying those decrees, with the aid of our Creator I shall put forth my best efforts henceforth to compose my acts and contracts in the French language'.

Latin did not go down without a fight in the land of *droit écrit*, but the legal practitioners who gained some of their authority by the use of language their clients did not understand were soon forced to change.

There remained, however, an ambiguity in the formulation of Article 111. Is the "*langage maternel françois*" the French language, or the maternal language? Pierre Rebuffi (1560) argued forcefully that local languages were not affected by Villers-Cotterêts:

only the use of Latin and clearly foreign languages (he mentions English and Spanish) are proscribed. The use of Northern French in the Midi would be as incomprehensible to the local participants as Latin was, so the local maternal language was the language to use in the courts. This argument was rejected just as forcefully, and forever after, by the legal commentary of Bourdin and Fontanon in 1606, in their commentary on the phrase *maternel françois*:

> *Maternel François. Ce mot de François y est adiousté pour monstrer que l'on ne doit faire lesdictes expeditions en langage du pays auquel elles se font, comme il avoit esté ordonné pour le regard des enquestes & informations par le Roy Loys douziesme en son ordonnance de l'an 1512, article 47. Laquelle est abrogee par la presente avec grande raison: pource que les iuges souverains n'avoient pas moins d'affaire à entendre lesdictes informations pour raison du langage que les parties avoient anciennement que d'entendre le Latin, & en resultoit plus de danger qu'au paravant. Mais le langage François est cognu & entendu par tout le Royaume, & partant se peuvent lesdicts actes commodément faire & concevoir en François.*
>
> 'Maternal French. This word 'French' has been added to show that one should not make the said copies in the language of the region in which they were written, as had already been ordered with respect to inquests and criminal investigations by King Louis XII, in his decree of 1512, article 47. This decree is abrogated by the present one, and rightfully so, because royal judges had no less difficulty in understanding the said criminal investigations for linguistic reasons than the parties formerly had in understanding Latin. The result was more perilous than before. But the French language is known and understood everywhere in the kingdom, and by that fact the said acts can easily be composed and executed in French'.

The conflict between French, Latin and Gallo-Romance languages and dialects was paralleled by an increasing problem with languages that were not Gallo-Romance. The kingdom's territory expanded greatly through marriage, war and colonial expansion through the 16th and 17th centuries, and even into the 18th with the acquisition of Corsica in 1768. Each of these presented a special problem for royal legal control, and for the choice of legal language.

In 1532, with the death of Anne de Bretagne, the Duchy of Brittany fell under royal control. While the language of law in Brittany had much earlier switched to French, cases involving Breton would take on increasing importance in French jurisprudence.

The Thirty Years War – concluded by the Treaty of Westphalia in 1648 – brought Alsace and Lorraine into the King's territory but the imposition of the King's authority and the King's language in Alsace required another century and a half. The act of capitulation of the city of Strasbourg (1681) recognized the right of the local population to continue using its local laws and statutes. However, four years later, the King required that all legal activity throughout Alsace be conducted in French (*arrêt du Conseil d'État*, January 30, 1685). The chief magistrate of the city of Strasbourg responded

that "*Le roi a promis par la capitulation à la ville de lui conserver tous ses privilèges, statuts et droits; l'usage de la langue est un droit*" (Lévy 1929: 295) ('The king promised when the city surrendered to maintain all of its privileges, statutes and rights. The use of the [German] language is a right'). Throughout the succeeding century the King and his *intendants* (provincial governors) would repeat, apparently to little effect, that legal activity in Alsace had to be in French. In Lorraine, similar problems arose, and similar solutions had similarly unimpressive results. The Duke of Lorraine in 1748 repeated previous injunctions that any legal activity conducted in German would be considered null and void (Lévy 1929: 351–352).

Fluctuating borders had led to some language conflict in Flanders since the thirteenth century. The French took Calais from the English in 1558 and subsequent treaties consolidated the French hold in Flanders, as well as the need to deal with Flemish-speaking subjects. In 1633, Colbert ordered that French be the language of the legal system throughout Flanders, but Article 25 of the Treaty of the Pyrenees, by which France acquired territory in Flanders as well as in Roussillon (a Catalan-speaking area) granted the king's new subjects in Flanders the right to use whichever language they pleased:

> *... Et sera permis ausdits sujets et habitants de part et d'autre, de tenir dans les lieux où ils feront leur demeure, les livres de leur trafic et correspondance, en la Langue que bon leur semblera, soit Françoise, Espagnolle, Flamande, ou autres, sans que pour ce sujet ilz puissent estre inquiétez ny recherchez.*
>
> 'The said subjects and inhabitants, wherever they are living, will be permitted to keep, in the places where they live, their accounting books and correspondence in whatever language they wish, whether it be French, Spanish, Flemish or others, without being harassed or made the subject of inquiry on that account.'

With the annexation of Dunkerque in 1662 came the requirement to conduct all legal activity in French:

> *désirant autant qu'il se pourra faire parler le même langage que dans les autres Villes de Notre Royaume; Nous vous faisons cette lettre, pour vous dire que Notre intention est, que doresnavant toutes les Ordonnances, Sentences, et Jugements qui seront par vous rendus, ensemble tous les Actes et Procédures, qui seront faites en conséquences, soyent proférées et couchées par écrit en Langue Françoise* (cited in Peyre 1933: 212)
>
> 'desiring as much as possible to make people speak the same language as in the other towns of our kingdom. We write this letter to you to tell you that our intention is that henceforth all decrees, sentences and judgments turned in by you, as well as all acts and procedures which will be done as a result, should be expressed and written in the French language'.

In 1684, a royal edict banned legal pleading in Flemish in Ypres and all the other territory of Western Flanders.

In 1620, Louis XIII led the French army into Pau and insisted that henceforth all legal functions before the *Parlement de Pau* would be conducted in French. A Basque-speaking contingent went to Paris to protest, but Du Hau – the advocate general for Basse Navarre – noted that the Basques were already using a second language for their legal activity, Béarnais or, closer to the border, Spanish (Peyre 1933: 136). Their protests were rejected and the King's language became the language of the law in the Pyrénées.

In nearby Roussillon, where the maintenance of Catalan was guaranteed by the Treaty of the Pyrenees (1659), French was admitted alongside Catalan in the courts starting in 1681. In 1700, a new *ordonnance* required the use of French in all legal matters, supposedly as a way of saving the people of the region from having to send their children to Spain for higher education as well as to recognize the authority of the king and to protect the honor of France (Jaubert de Passa 1823: 389). The Catalans protested that it would be impossible for witnesses to understand their depositions if they were recorded in French. Once again, however, regional realism prevented the imposition of the King's authority in this matter, and in 1754, the *Conseil Souverain* in Perpignan had to repeat that wills written in Catalan would not be considered.

Finally, in 1768, Corsica was annexed through the Treaty of Versailles. This led to the publication of a bilingual *Code Corse* (1790). Even after the Revolution, Corsica enjoyed an exceptional tolerance for the use of its language in the legal system, which did not disappear until 1859, when the *Cour de Cassation* ruled that no part of France could enjoy special privileges (Giorgi c. Masaspino).

Throughout the *Ancien Régime*, therefore, a desire to impose French throughout the legal system was counterbalanced by the division of that system into many self-contained regional legal practices. The unity of the law, an object of desire by the monarchy at least since the 13th century, was still elusive on the eve of the Revolution.

3.1 King's law and local law in the *Ancien Régime*: a case study

Although the law would not be truly unified until the creation of the Napoleonic Code early in the 19th century, a notable effort to unite civil and criminal procedure was undertaken under Louis XIV, the Sun King. In the criminal code issued in 1670, particular mention is made of the use of interpreters in the court. This *ordonnance criminelle* was the first comprehensive rewriting of criminal procedure in the history of the French monarchy. In 1665, the king asked his *Conseil d'État* to begin work on these revisions, and they came out in 1667 (Civil Code) and 1670 (Criminal Code).

In a country that through territorial expansion was increasingly multilingual, in addition to the diversity of the regional varieties of French, the Code addressed clearly the issue of interpreters. Section XIV, Article 11 requires that:

> *Si l'accusé n'entend pas la langue française, l'interprète ordinaire, ou, s'il n'y en a point, celui qui sera nommé d'office par le juge, après avoir prêté serment, expliquera à l'accusé les interrogatoires qui lui seront faits par le juge, et au juge les réponses de*

> *l'accusé, et sera le tout écrit en langue françoise, signé par le juge, l'interprète, et l'accusé, sinon mention sera faite de son refus de signer*. (Cited in Isambert, Jourdan, Taillandier & Decrusy 1821: XVIII, 399)
>
> 'If the accused does not understand the French language, the court interpreter or, if there is none, the person who will be assigned that duty by the judge, after having been sworn in, will explain to the accused the questions that the judge will ask him, and to the judge the responses of the accused, and all this will be written down in French, signed by the judge, the interpreter, and the accused, or, if not, the accused's refusal to sign will be noted'.

The original version of this article included a second condition for the use of an interpreter – the accused had to be a foreign national. The omission of this condition in the final version allowed anyone who did not speak French to benefit from this assistance. However, the written transcript is recorded in French only and the accused is expected to sign a document he or she might not understand. In an early 18th-century commentary, Philippe Bornier specified further that the interpreter must be hired by the court, and not by an interested party. These principles were repeated in the Code Corse (first draft, 1778). The *Parlement de Bretagne* in 1780 extended the requirement of supplying interpreters for the accused to include interpreters for witnesses (Broudic 1995: 59).

Another related question was whether the accused, the judge, and other officers of the court could use another language, as long as all understood it. In this case, there is no linguistic disadvantage. Citing the *Ordonnances* of Is-sur-Tille (1535), which permitted the use of the vernacular language of the region, Bornier saw no reason that another language could not be used, but the proceedings still needed to be recorded in French.

Others found a legal conflict of interest in this approach. In 1712, the *Chancelier de Pontchartrain* wrote a letter to the *procureur général* of the *Parlement of Bordeaux* concerning the application of Article 11 in the Basque Country. He complained that the judge could not participate in a trial in which another language was used just because he and the accused both spoke it. To do so, he argued, was to make the judge both judge and interpreter, and the interpreter had to be sworn in by the judge (Peyre 1933: 160). The conflict of interest made this approach untenable.

The choice of translators and interpreters has also been an issue. In Alsace, only certified *interprètes* could be used for the translation of legal documents between French and German. However, lawyers frequently sought to save money by avoiding official translators, a practice that brought down the wrath of the *Conseil Souverain d'Alsace* which ruled (May 24, 1698) that any legal document not translated by an official *sécrétaire interprète* would be declared null and void. Even the official interpreters were not above some questionable practices, which led to a rule requiring translations to be signed on each page of the original and of the translation (Réglement of August 23, 1713, cited in De Boug & Corberon 1775: I, 429).

The extent of translation required was also a matter before the *Conseil*. While everything in German had to be translated into French for the court, not everything in

French had to be translated into German. A 1753 ruling concerned a dispute between a cooper and a brandy-maker, the latter, through imaginative chicanery, having managed to postpone paying his supplier for six years. One of the stratagems was to require translation into German of all supporting materials. The *Conseil* viewed this request an unnecessary expense, further establishing the priority of French as the language of the law, even in German-speaking areas.

The application of the law equally throughout the kingdom had its limitations. The rules could not be applied in Strasbourg, according to Intendant Le Pelletier de la Houssaye (1701), because at the time they were imposed, Strasbourg had not capitulated to French rule, and the act of capitulation, as we have seen before, allowed the Strasbourgeois to maintain their legal traditions. Until more people in Strasbourg understood French, he lamented, the use of German would continue in the courts.

Not only were different languages an issue, but also different alphabets. In personal contracts, Jews in Alsace frequently used documents prepared in Hebrew characters. In 1735, the *Conseil Souverain d'Alsace* condemned the use of Hebrew letters when Jews were signing contracts with Christians. Instead, all contracts with Christians had to be signed in French or German, with two Christian witnesses certifying the conditions.[7]

We see from these examples concerning the issue of interpreters the diversity of legal practice in France, and the desire of the monarchy to unify civil and criminal procedure. The king tried to consolidate his jurisdiction through three principles:

1. Prevention: The king's court would take on a case before it appeared in a seigneurial court on the principle that all justice flows from the king.
2. The appeals process: from the 14th century on, appeal was possible to the king's courts, a procedure that acted to unify practice throughout the land;

7. *[Le Conseil]a fait & fait défenses à tous Juifs de plus donner ni signer en Lettres hébraïques aucunes quittances ou autres actes concernans leurs Débiteurs chrétiens; a ordonné & ordonne qu'ils les rédigeront ou tout au moins les signeront à l'avenir en langue vulgaire; & au cas qu'ils ne sussent écrire en langue vulgaire, ils les feront rédiger par un Tiers en présence de deux Témoins chrétiens, qui y signeront avec lesdits Juifs; leur fait défenses d'ajouter rien en langue hébraïque à leurs signatures: le tout à peine de faux & de nullité contre les Juifs contrevenans* (De Boug & Corberon 1775: 116–117)

'The Council has forbidden and continues to forbid all Jews from writing or signing with Hebrew letters any receipts or other legal documents concerning their Christian debtors. It has ordered and orders henceforth that they compose them, or at the very least, sign them in the vernacular language. If they do not know how to write in the vernacular, they will have them written by a third party, in the presence of two Christian witnesses, who will sign the documents alongside the said Jews. The Council forbids them to write anything in the Hebrew language alongside their signatures. The penalty for Jews who contravene these orders is the declaration of such acts as null and void'.

3. Crimes against the king: all criminal acts considered acts against the king would be tried in a royal court. The list of such acts grew over the course of the *ancien régime* (see Chianéa 1995: 119–122 for more information).

The king's court meant the king's language, a principle that would be transferred to the new democratic institutions of the Republic, and applied even more severely.

4. *La République une et indivisible*

After the Revolution, diversity came to be seen as a relic of feudalism, and one that needed to be destroyed. At the outset the Revolutionary government wished to show itself accommodating to linguistic minorities. Laws were translated into a number of languages in a demonstration of inclusiveness unprecedented in French history. However, it was hard to find good translators, and difficult to verify the comprehensibility of translations among the target audiences. Furthermore, counter-revolutionary elements were particularly strong in some of the areas where regional languages were spoken, as exemplified by the *chouanneries* in Brittany and other western provinces, the temporary secession of Corsica, and the defection of a number of Alsatians to the invading Austrian army. As a result, the attitudes towards regional variation hardened, and the prevailing opinion was that the unity of the Republic could be achieved only through linguistic unity. The culmination of this movement was the law of 2 Thermidor II (July 20, 1794). Article one of this law states that no public act (record of governmental action) can be written in a language other than French. Article two requires any act registered with the government (birth, marriage, last will and testament, contracts) to be written in French. Article three demands that all government officials do their official business in French alone.

The law of 2 Thermidor II has been repeatedly invoked ever since in denying accommodation to speakers of languages other than French, and in combating the spread of the use of English in French life. This position was strengthened in 1992 by the approval of a constitutional amendment declaring French the official language of the Republic. Sometimes these provisions are in apparent conflict with human rights conventions that France has signed, setting the stage for legal challenges. In the following discussion, we shall limit our examination to the use of interpreters and translations in the justice system.

An immediate concern for the Revolutionary government, during the invasion of France by countries frightened by its egalitarian message, was how to deal with foreign prisoners of war. Accordingly, in 1793, the *Convention nationale* required that interpreters be provided at each prisoner of war camp. At the same time, the ideal for French citizens among themselves was communication without an interpreter, as the abbé Grégoire proclaimed in his famous report on the necessity of eliminating linguistic diversity in the country (17 Prairial II, June 4, 1794).

The linguistic disadvantage in administration and the legal system created through such an approach was extreme. Although Grégoire's definition of 'French speaker' is subject to extreme caution, he claimed that three-quarters of the population did not speak French. While the various governments through the Revolutionary period established the principles for French language education that could level the playing field, complete implementation of the principles took another hundred years – at a time when Alsace had fallen back into German hands. In spite of such forces as education, military conscription, and increased mass media, general accomplishment of that goal – a population in metropolitan France close to 100% familiar with the national language – would not be achieved until roughly the period of the Second World War.

With the achievement of rough linguistic unity in metropolitan France, and the perception that the lack of accommodation for linguistic minorities had contributed to the horrific devastation of Europe, attitudes towards diversity have softened somewhat. At the same time, the post-World War II period brought other challenges to the monolingual ideal of the French Republic: the arrival of immigrants, invited and uninvited, primarily from former French colonies, and the change in status from colony to department of some other parts of the French territory, a change with its own demographic consequences for the Republic. At the same time, international organizations (United Nations, European Union and its predecessors, the Council of Europe, and the Organization for Security and Cooperation in Europe) have all put forth conventions, treaties, charters and other documents requiring signatory states to recognize and to accommodate linguistic minorities.

French public schools, after many years of rejecting bilingual education, began offering courses in some of its indigenous minority languages during the Vichy regime, and reaffirmed this commitment with the *Loi Deixonne* (1951) and many subsequent amendments to that law. French administration continued to resist the use of other languages in official contexts, such as wedding ceremonies, birth certificates, and wills, but ultimately abandoned its opposition in the 1990s. While stated policy favors the use of interpreters in the legal system, in practice few appeals based on problems with interpreters have been successful. Let us now look at each of these issues in more detail.

4.1 Linguistic disadvantage and government record-keeping[8]

The *Ordonnances de Villers-Cotterêts* (1539) required births and deaths to be recorded by the parish priest, and the Ordonnances de Blois (1579) added the recording of weddings. The reforms of 1667 required civil authorities to keep a second set of records, in addition to the church records. However, these records applied only to Catholics. Since

8. The International Association of Forensic Linguistics lists as a primary purpose "the alleviation of language-based inequality and disadvantage in the legal system" (http://web.bham.ac.uk/forensic/IAFL/). People dealing with the government in a language they do not know are at a disadvantage compared to those who speak the language of the courts, the schools, and so on.

September 20, 1792, the government has required that all births, deaths and weddings be recorded by the state. The failure to comply has serious legal consequences, such as the loss of benefits and protections provided by the state. These legal proceedings can be performed and records kept only in French.

Weddings require a representative of the state to ask the bride and groom certain questions. Even if all the other parts of the ceremony are in a regional language, those questions are still performed in French, and, since an *arrêt* of the *Conseil d'État* on May 31, 1702, have to be recorded in French (Rouquette 1987: 258). Such rules were challenged in Corsica, in the case of Orfèi c. Orfèi (*Cour de cassation, chambre des requêtes*, January 22, 1879). Here the court agreed that the prescribed penalty, annulling the marriage, was too severe, concluding:

> *Il est difficile d'extirper une langue ancienne pour y substituer une langue nouvelle. [ ] Pour vaincre les résistances, la force seule est impuissante; il faut le temps, la patience, la pression sage et soutenue de tous les jours.*[9]
>
> 'It is difficult to remove the roots of a long-established language and substitute a new language for it. To overcome resistance, the use of force accomplishes nothing: what's needed is time, patience, and sustained daily pressure, applied wisely'.

This division of linguistic function seems to have been uncontroversial and apparently continues to the present day.[10]

Not so the question of personal names. The parents' right to name the child according to their wishes has been limited by the state's desire to protect the child, and the state's desire to protect its language. The first case is exemplified even before the Revolution, as when the Bishop of Vence (1655) refused to permit parents to give their children "ridiculous" names, which in his mind included diminutives of saints' names such as Claudette. During the Revolution, the *Convention nationale* considered whether any child should be able to take the name *Liberté*, and concluded that "*chaque citoyen a la faculté de se nommer comme il lui plait*" (cited in Lefebvre-Teillard 1990: 120). By 1802, attitudes had hardened, and the admissible names were limited to well-known saints' names and the names of historical figures:

> *"(...) les noms en usage dans les différents calendriers, et ceux des personnages connus dans l'histoire ancienne pourront seuls être reçus, comme prénoms, sur les registres destinés à constater la naissance des enfants; et il est interdit aux officiers publics d'en admettre aucun autre dans leurs actes (Loi du 11 Germinal XI).*
>
> 'names used in the various calendars, and those of characters from ancient history are the only ones that can be accepted as first names, in the registers kept of the

9. Cited in http://www.culture.gouv.fr/culture/dglf/lgfrance/legislationLDF.pdf, consulted October 9, 2007).

10. In August 2007 an example of a Breton-French wedding, in which the state official uses only French is reported at: http://ouiaubreton.com/spip.php?article737 (consulted October 9, 2007).

> birth of children. It is forbidden for public officials to accept any others in their birth certificates'.

After World War II, this restriction on naming became a focal point of regional language movements, and particularly in Brittany. In 1963, Mr. Manrot sued the *Caisse d'allocations familiales* because he was refused subsidies granted to large families (he had twelve children). Six of his children had Breton first names (Abradoran, Mayden, Gwendal, Diwenska, Skeltjenn, Brann) which the state refused to recognize. In 1965, the *Tribunal de grande instance* in Caen rejected "Kelig" and "Kaelig" as legitimate first names, but accepted "Mikaelig". The following year, a ministerial decree broadened somewhat the restrictions of the Prairial law, but maintained some constraint:

> *[ ] les officiers de l'état civil ne doivent se refuser à inscrire, parmi les vocables choisis par les parents, que ceux qu'un usage suffisamment répandu n'aurait pas manifestement consacrés comme prénoms en France. C'est ainsi notamment que devraient être systématiquement rejetés les prénoms de pure fantaisie ou les vocables qui, à raison de leur nature, de leur sens ou de leur forme ne peuvent normalement constituer des prénoms (noms de famille, de choses, d'animaux ou de qualités, vocables utilisés comme noms ou prénoms de théâtre ou pseudonymes, vocables constituant une onomatopée ou un rappel de faits politiques)* (April 12, 1966).

> 'The officers of the state must refuse to register those names chosen by the parents which a sufficiently broad usage has not consecrated as first names in France. Thus the state must systematically reject made-up first names and words that by their nature or their meaning or their form cannot normally be first names (family names, names of things, names of animals, nouns designating qualities, words used as family or first names in the theater, or as pseudonyms, onomatopoeic words, or those referring to political events'.

The battle over names continued through the case of *Fleur de Marie Armine Angèle Guillot*. The name *Fleur de Marie* was chosen by the parents, after the name of a character in a novel by Eugène Sue (*Mystères de Paris*). Ms. Guillot was born in 1983, and went officially nameless until 1996, when the European Court of Human Rights rejected the appeal of the Guillot family, by a vote of 7–2. Although victorious, the French government had already essentially given up, abandoning in 1993 restrictions on names, unless the name might be harmful to the child (Article 57 of the *Code civil*). Nonetheless, in 1999, the state prosecutor in New Caledonia challenged the right of the parents to give their child the first name Kawrantin (Breton equivalent of Corentin). In a decision the following year, the judge admonished the prosecutor to concern himself with more serious matters.[11]

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11. http://perso.orange.fr/du.pontavice/cal.html#L'AFFAIRE%20KAWRANTIN, consulted October 9, 2007.

4.2 Linguistic disadvantage and the criminal court system

Schooling in French, conscription, ease of movement and mass media have gone a long way towards eliminating the linguistic difficulties of a monolingual justice system in metropolitan France. However, immigration and changes in the status of the overseas territories have presented new challenges. The requirement is still that all legal proceedings take place in French, with the use of an interpreter as deemed necessary. Interpretation might be necessary as of the first contact with law enforcement officers, and from then on through hearings, trial, and appeals. International law, confirmed by French national law, requires that people being questioned be apprised of their rights in a language they understand (*Code de procédure pénale*, Articles 63–1 272). Therefore, determining if someone needs the assistance of an interpreter is a first concern, typically left to the police and then to the judge. Judges have a great deal of latitude in such decisions. In a 1972 case before the *Cour de sûreté de l'État*, the judge refused to provide an interpreter for Breton nationalists on trial, on the basis that they knew French. On the other hand, a judge in Colmar did engage interpreters for two people charged with making racist remarks while refusing to allow their lawyers to use German when speaking to the court.[12]

The choice of interpreter is also sometimes a matter of concern. Article 344 of the *Code de procedure pénale* excludes, as interpreters, other judges within the same court, jury members, the court reporter,[13] the parties themselves, or the witnesses in a case. Interpreters must be at least twenty-one years of age, and swear to translate faithfully (article 407). The use of a specific interpreter can be challenged by the attorneys on either side or by the accused, but the court decides whether to approve such complaints. The court's decision in such matters is not subject to appeal (article 407).

Actual practice, as demonstrated in court decisions, reveals how difficult it is to win an appeal based on irregularities in the use of translators and interpreters. In a 1994 appeal by a convicted rapist who spoke only Turkish, an interpreter was not provided for the defendant for all witnesses, and the defendant's request for a second interpreter to help him communicate with his attorney during the trial had been refused. Nonetheless, the appeals court upheld the conviction (*Cours d'assises*, February 2, 1994, 93–80.938). In a 1995 decision concerning an Iranian convicted of murder, the appeals court refused to overturn even though some of the supplementary documents had not been translated for the defendant (*Cour d'assises*, October 4, 1995, 94.86–206). However, clear violations of the criminal code can be successfully appealed, as in the case of Sami Kurti, an Albanian who was presented at a hearing without an interpreter (*Cour de Cassation, Deuxième Chambre Civile*, 96–50.029).

12. Cour de cassation, chambre criminelle, March 13, 1989, X (n°86–93846) Cited in http://www.culture.gouv.fr/culture/dglf/lgfrance/legislationLDF.pdf, consulted October 9, 2007).

13. The use of a court reporter as an interpreter is permitted in the French overseas territories (Code de procédure pénale, Article 817).

Accent as evidence is another area in which forensic linguistics might be a factor in the courts. Defendants might be identified as having a specific accent, foreign or regional. Such identification requires perceptual competence on the part of the accuser that few have. U. S. evidence, as in Purnell, Idsardi and Baugh (1999) indicates fairly high rates of accuracy for a limited range of accents, but not enough that one would want to convict on that basis. Furthermore, accent identification only limits the pool of defendants to the thousands or hundreds of thousands who might speak with that accent. For instance, were a witness to claim that the perpetrator of a crime spoke with an *accent beur*, there may be a hundreds of thousands of such speakers in the Paris region alone. However, as noted above, French record-keeping practices do not permit us to know if such evidence has been used in French courts.

All of these cases concern immigrants to metropolitan France. What happens in the *Départements d'outre-mer* (Martinique, Guadeloupe, Guyane, Réunion) and the *Collectivités d'outre-mer* (such as French Polynesia)? We have already seen some exceptions made for these regions, such as the ability to use the court reporter as the interpreter. However, everyone is expected to use French in official capacities, which creates a significant linguistic disadvantage, as the vast majority of the inhabitants speak as their first language a creole or another indigenous language.

5. Conclusion

The Constitutional Council of France rejected the European Charter for Regional or Minority Languages in 1999, citing the requirement that languages other than French be used in official administrative and legal business.[14] France has similarly resisted other international conventions that would require the use of a language other than French in public life. There is pressure as never before to accommodate linguistic minorities. In private life and the public schools, France has shown some considerable flexibility, particularly since the mid-1990s. However, French accommodation has always been carefully phrased: it is a matter of recognizing a "common cultural heritage" of all French people, and never a matter of recognizing a specific group's linguistic/cultural heritage, attached to that group's traditional territory. The accommodations in names and wedding ceremonies are thus an opportunity for all French people to

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14. The Constitutional Council argued that: "*ces dispositions sont également contraires au premier alinéa de l'article 2 de la Constitution en ce qu'elles tendent à reconnaître un droit à pratiquer une langue autre que le français non seulement dans la «vie privée» mais également dans la «vie publique», à laquelle la Charte rattache la justice et les autorités administratives et services publics*". Issued June 15, 1999. ('These dispositions also contravene the first section of Article 2 of the Constitution, because they tend to recognize a right to use a language other than French not only in private life, but also in public life, including, according to the Charter, in the justice system, with the administration, and in public services').

celebrate the diverse cultures that have been united in a single polity. In this way, France addresses cultural difference without conceding linguistic disadvantage.

In the courts and other aspects of administration linguistic disadvantage remains a significant hurdle for immigrants and for non-French speakers who are citizens of the Republic. There is little pressure for accommodating immigrants, either in international law or in public opinion. However, in Corsica as well as in the DOM and COM, pressure has been building for recognition of the majority languages in these regions. A new semi-autonomous status for New Caledonia, brought about by the *Accords de Nouméa* in 1998, emphasizes the importance of Kanak culture, and one can imagine that with further autonomy promised in 2014, Kanak language will enter the ministries and courts. The *Accords de Nouméa* were then considered a model for Corsica, which now has the unique status of "*collectivité territoriale*". In Corsica, a referendum for greater autonomy failed at the polls in 2003 (50.98% voted no, 49.02% voted yes), assuring the position of the French language in Corsican legal institutions. Fewer and fewer Corsicans report speaking French poorly,[15] so linguistic disadvantage may be a disappearing issue there.

Through mandatory schooling and other social changes (urbanization, mass communications, transportation), the linguistic disadvantage that existed at the time of the French Revolution has been significantly reduced, at the cost of the vitality of the regional languages. As attitudes towards linguistic diversity and identity have changed, following World War II, other methods of dealing with linguistic disadvantage are being pursued, as in the European Charter for Regional or Minority Languages, or the creation of autonomous zones in Spain. To date, these have little resonance in France, where the only thing left and right can agree on is the principle of equality through linguistic uniformity.

6. Areas for future research

As noted above, the majority of the areas in forensic linguistics in which a rich scholarly tradition has developed in the Anglophone world have scarcely been touched in the Francophone world. This is partly because of the legal institutions themselves, as in the attitudes towards the use of certain types of forensic linguistic evidence (e.g., voiceprints). Another reason for the gap lies in the linguistic traditions of the Anglophone and Francophone worlds. The primary linguistic approaches to the study of legal language and the interaction of the various players in the courtroom, such as discourse analysis and conversational analysis, are far less developed in the Francophone world.

15. A survey from 1998, supplemented in 2002, shows a marked increase in the number that are judged to speak French well, as one moves from the generation of the grandparents to the current generation. See http://www.uoc.edu/euromosaic/web/document/cors/an/e1/e1.html (consulted October 9, 2007).

Forensic linguistics is thus an area with tremendous potential for future research in all the domains listed in the introduction to this chapter.

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CHAPTER 10

Analyzing urban youth vernaculars in French cities

Lexicographical, variationist and ethnographic approaches

Tim Pooley
London Metropolitan University

Alors qu'on constate un nivellement sociolinguistique avancé dans les français d'Europe, mais surtout en France, le langage vernaculaire des jeunes a parfois été présenté comme contre-exemple à cette tendance généralisée. Dans ce chapitre, je me propose de passer en revue tout d'abord les travaux à caractère lexicographique (dictionnaires et lexique), puis les études réalisées dans une optique variationniste – qu'il s'agisse du comportement ou des perceptions – et enfin quelques travaux à caractère ethnographique. Dans les dernières sections, je tente d'évaluer les travaux sur le français en attirant l'attention sur certains thèmes qui tiennent une large place dans les recherches sur les parlers jeunes des pays voisins, mais qui semblent absents des études consacrées à la France.

Against an overall national backdrop of sociolinguistic levelling in European varieties of French, particularly in France, youth vernaculars have sometimes been construed as a major counterexample to this general trend. Reviewing firstly work on dictionaries and lexicons, before moving on to variationist work carried out using behavioral and perceptual approaches and finally some examples of ethnographic work, this chapter then seeks to put the French work into perspective through a brief comparison with work in neighboring countries, drawing the reader's attention to certain themes which appear important outside France but which are apparently absent from work on French youth slang.

1. Introduction

Against a general backdrop of far-reaching convergence in the pronunciation of European varieties of French, where adoption of a supra-local norm has affected virtually

all communities (Armstrong 2001; Armstrong & Boughton 1998; Boughton 2006; Pooley 2006b, 2007) to the point where it is becoming difficult for ordinary speakers to detect the geographical origins of their fellow citizens on the basis of their speech with any accuracy, particularly within the Oïl regions but increasingly too in the more southernly areas of France. Geographically peripheral varieties of French spoken in Belgium, Switzerland and southern France seem to be maintaining greater or lesser degrees of divergence, although among speakers around 40 years of age and under (birth year 1965 or later), differences from the supra-local norm are significantly fewer than those described by classic studies of regionally marked pronunciation such as Walter (1982) or Carton, Rossi, Autesserre and Léon (1983). Moreover, there is relatively little evidence of innovation.[1] One of the best documented exceptions to this overwhelming tide of convergence, it has been argued (e.g., Armstrong & Jamin 2002) are what Trimaille (2004) refers to as the *parlers de jeunes urbains*, particularly associated with the socially and geographically peripheral areas of large cities, the *banlieues*. While evidence from recent studies of sociolinguistic variation in Paris (Jamin 2005, 2007), Marseille (Binisti & Gasquet-Cyrus 2003), Grenoble (Trimaille 2003; Vernet & Trimaille 2007) and Lille (Pooley 2000) points to possible phonetic indicators of new dialect formation, other linguists (in particular Goudaillier 2001) have captured the attention of a wider public by drawing attention to numerous neologisms coined by young people, particularly of ethnic-minority origin, living in poorer urban areas.

In addition to this lexicographical work (to be discussed in Section 3), sociolinguistic variables perceived as being salient markers of French urban youth language have been studied from both behavioral and perceptual perspectives (Section 4). Other scholars have adopted an ethnographic (Lepoutre 1997) or interactional approach (Billiez, Krief & Lambert 2003), or attempted to analyze interactional features (Baines 2007) (Section 5).

While this growing body of literature on French youth language may sometimes appear to be seen as documenting some kind of *exception française*, its significance can be better evaluated when weighed against the findings of studies of comparable phenomena in neighboring countries. In this chapter, I intend to adopt a comparative approach in two ways: firstly, to assess research findings from urban areas of France that emerge in each section, and secondly, in Section 6 to draw attention to apparent gaps in the literature on the linguistic behavior of young people in France, noting phenomena observed in other countries which appear either to be absent or at least not attracting the attention of researchers to a comparable degree. Before embarking on this overview of studies on urban youth language, it is important to note the different ways in which the term *banlieue* might be construed in relation to the various French cities where relevant sociolinguistic work has been carried out (Section 2).

1. Schwa tagging as in *bonjour* [bõʒuʀə] would be one of the few exceptions.

2. The *banlieues*

Banlieue can be interpreted geographically or socially. As the boundaries of most French *communes* including those of major cities narrowly understood were fixed in the 19th century during a time of rapid industrial expansion (e.g., Paris 1860, Lille 1858), when it was usual for employees to live close to their place of work, many industrial and housing developments were carried out in the available space outside city boundaries. The development of such 19th century industrial suburbs is particularly characteristic of the Paris region where 40% of all *banlieusards,* '*banlieue* dwellers' live. The 20th century, particularly the post-World War II era saw some of the fastest urban development at any time in the history of France doubling the urbanized land area (from 7% to 14%) within two decades between the mid-1950s and mid-1970s. Much of the development was of the *grands ensembles* type which used mass-production methods to meet urgent housing needs at a time of rapid economic expansion, which saw the development of shantytowns (estimated 50,000 inhabitants in the Paris region in the mid-1960s) (Armstrong & Jamin 2002: 117). The result in many cases was soulless uniformity with too little forethought given to transport links and social amenities. That said, these suburban developments were far from totally uniform, with higher-quality flats and estates of individual houses also being built, often around existing town centers.

Since the suburban developments of both the 19th and 20th centuries included housing to suit people with middle and higher incomes, the term *banlieue*, in a geographical sense, need not be pejorative. Moreover, the expression *banlieue aisée* aptly describes the western suburbs of Paris, which house the wealthier and better educated. Since the early 1980s in particular, the term *banlieue* has, however, been used with a strong social connotation of 'social-problem area' or *quartier défavorisé*, *quartier en difficulté* or *zone urbaine sensible*.[2] Such problem areas include some of the older industrial suburbs of Paris, but in other cities, such as Marseille or Lille, they may be older inner-city areas or large post-World War II high-rise housing estates (*grands ensembles*). These areas have a number of common characteristics: high levels of unemployment due to the loss of local low-skill industrial jobs; high crime rates and prevalence of a parallel economy that includes drug dealing. While they also tend to have higher-than-average proportions of migrants from outside metropolitan France, the term 'ghetto' as applied to high concentrations of Blacks in parts of certain American cities is not appropriate (Vieillard-Baron 1994). At the level of the *quartier* a considerable degree of ethnic mixity is maintained, although there are admittedly pockets of micro-segregation, for instance, in certain apartment blocks (Boyer 2000: 136).

The negative image of the *banlieues* as zones of exclusion and violence has undoubtedly been hyped by the media, to the particular detriment of certain areas

2. This is a technical term which may be abbreviated to ZUS for problem areas recognized as being in need of State aid by the first Pasqua Law of 1993.

(e.g., Les 4000 in La Courneuve in the northern suburbs of Paris). In some cases, there is a kind of physical separation, the *boulevard périphérique* appears to cut off many of the poorer northern suburbs of Paris or the Garonne which separates the prosperous city center from the industrial eastern suburbs of Bordeaux. In Lyon and Toulouse, the barriers may be more social and economic with the *banlieues populaires* concentrated to the east of city in Lyon and to the south west in Toulouse.

The *banlieues* have a reputation for both physical and verbal violence. Serious incidents of physical violence are generally triggered by confrontations following incidents involving the police, the worst of which were the riots of autumn 2005, which spread from Clichy-sous-Bois to many urban areas which would not normally be thought of as *banlieues*. Verbal violence is generally construed as symptomatic of a lack of acceptance of mainstream republican civic values, including one of the key instruments of integration, the education system. While ethnographic work points to differences in interactional norms between mainstream, middle-class practices and those of youth sub-cultures (Section 5), the French authorities introduced measures through the Perben Law of 2002 to sanction verbal violence that is disruptive to social order in schools.[3] Such verbal violence is characterized in part by the concepts which feature strongly in the lexical items (Section 3) and the discourse codes of youth slang.

3. Lexicographical work

It is undoubtedly this aspect of youth language that has attracted the greatest amount of attention among the general public, education professionals, as well as local and national government officials. This interest was regularly fuelled by both the print and audiovisual media and popular culture particularly in the 1990s, and to a lesser degree in the early years of the current century, most noticeably in rap and hip-hop lyrics, film portrayals and comic parodies of this type of language.

Linguists have certainly been successful in analyzing the etymology (the main sources being Dialectal Arabic, Berber, Gypsy and African languages, English and by no means least traditional *argot*) (see Table 1) and word-formation processes (verlan, truncation – apocope and apheresis – reduplication, resuffixation in word formation), often with marked suffix such as *-ax* as in *bombax* 'pretty girl', and lack of affixation in verb forms (see Tables 2 and 3). Metaphorical extensions or adaptations of both standard French and slang items proliferate. The most productive semantic fields are largely traditional: sex, intoxicants, money, business (often illicit), crime, weapons, work, dress, parts of the body, appearance and movement (there are many ways of expressing notions such as 'go (away)' 'leave' 'escape'). Not surprisingly, fields such as cars, computers and racial types figure more prominently than in traditional slang, and sources of inspiration are often contemporary. Thus, for instance, a very thin girl may be *une*

3. Insulting a teacher is punishable by a prison term of 6 months or a fine of 7,500 euros.

Table 1. The various etymologies of youth vernacular lexis (based on Goudaillier 2001)

Origin	Examples
Arabic	*heps* '*prison*'; *kehba, kahba* '*prostituée*' ('prostitute')
Romany	*chourav* '*voler*' ('steal'); *craillav* '*manger*' ('eat'); *gadjo* '*homme*' ('man'); *gadji* '*fille*' ('girl')
Wolof	*gorette* '*fille*' ('girl')
Bambara	*go* '*fille*' ('girl')
English	*biatch* '*prostituée*'; *spliff* '*cigarette de haschisch*' ('joint')
Regional languages	*panouille* '*abruti*' (Provençal) ('stupid')
Traditional argot	*baston* '*bagarre*' ('fight'); *taf* '*travail*' ('work')

Table 2. Word-formation processes in verlan (based on Goudaillier 2001)

Example	Description of word formation
femme [fam]→ *meuf* [mœf]	Monosyllables with the structure $C_1(C_2)V(C_3)$ C_4; add schwa [ə] and invert sound order (C_3) C_4 $C_1(C_2)$ deleting V
joint [ʒwɛ̃]→ *oinj* [wɛ̃ʒ]; ça [sa]→ *as* [as]	Monosyllables with the structure $C_1(C_2)V$ simply invert V $C_1(C_2)$, bearing in mind for instance that the sequence [wɛ̃] counts as V.
tomber→ *béton*	Inversion of Syllable 1 and Syllable 2
chinois→ *noiche* or *oinich*; *choper*→ *peucho, peuoch*	Alternative forms of dissyllabic words
Calibre [kalibʀ]→ *brelica* [bʀəlika] *libreca* [libʀəka]	Polysyllabic words

Table 3. Other frequent word-formation processes in French youth slang (based on Goudaillier 2001)

Process	Examples
Metaphor	*airbags, ananas* 'seins'; *fromage blanc* 'Franco-français'
Metonymy	*bleu* 'policier'; *casquette* 'contrôleur'
Apocope	*séropo* 'séropositif'; *tox* 'toxicomane'
Apheresis	*blème* 'problème'; *zesse* 'gonzesse'; *zon* 'prison'
Reduplication after apheresis	*zonzon* 'prison'; *ziczic* 'musique'
Resuffixation after truncation	*bombax* (bombe) 'très jolie fille'; *pourav* 'pourri'
Absence of verbal endings	*dicav* 'voir'; *nesbi* 'faire des affaires'
Semantic widening	*caille* 'fille', 'racaille'; *fafs* 'billets de banque', 'papiers d'identité'

findus, *une carte bleue* or *une post-it*. The word-formation processes are not new in themselves. Back formations, in particular, have been used in *argot* for a long time but the productivity of the process has certainly increased significantly and contact with speakers of languages not heard in earlier times in working-class urban areas provides rich new lexical sources.

Dictionaries or commented glossaries (e.g., Aguillou & Saiki 1996; Goudaillier 2001; Seguin & Teillard 1996) written with at least one eye on a readership far wider than specialists in linguistics, tend to create the impression that there exists a fairly unified multi-ethnic youth-speak, variously called *tchatche*, *verlan*,[4] *français des banlieues, français ou parler des cités, langue des keums* (*mecs*), *langue des rues et des cités* or *néo-français*, that is a variety spoken particularly by young people from all backgrounds in the *banlieues* or housing estates that have sprung up around most French towns and cities since World War II. Those who use this language are variously known as *céfrans* (verlan for *français*, *técis* (verlan for *cité*) or *jargonautes* (blend of 'jargon' and *internaute* 'cyberuser'). While its multiple etymologies (Table 1) suggest a multi-ethnic variety, much of the literature points to an identification with the so-called *Beur* (second or subsequent generation of young people born in France to parents of Maghrebian origin) community. It is often presented as an identity language (Sayah 1999a; Goudaillier 2001) that takes on the sense of exclusion (the so-called *fracture sociale* consisting of high unemployment, territorial separation in multi-ethnic suburbs, non-acceptance by and non-integration into French society) and articulates separateness '*fracture linguistique*' both from their parents and mainstream society. It has become strongly associated not simply with Maghrebians living in their suburban communities, but also with problem areas manifesting a litany of social ills such as high crime rates and drug abuse. It is sometimes seen as an attack (Hagège [1997: 3] refers to the phenomenon as "*français dynamite*" and Goudaillier [2001] as "destructuration") on Standard French which is readily perceived as an act of aggression against France itself, *foutre des coups de pieds à la France* 'kick France' (cf., Gueunier, Genouvrier & Khomsi 1978). Public figures, as eminent as Azouz Begag and Alain Bentolila, have expressed the view that it is closely correlated to educational failure and in the case of the latter to an extreme paucity of (Standard French) lexis that prevents its users from being able to function in mainstream society. Doubtless this culture of exclusion exacerbates social disadvantage that contributes to educational failure, but the paucity of vocabulary contrasts starkly with the lexical inventiveness displayed by the constant coining of new terms required by the dual function of separate-identity marker and secret communication code. Far from being purely an anti-language, it is, as Alain Rey recognizes, one of the most dynamic sources of lexical renewal based on sources other than borrowings from English (Sayah 1999a). The anti-language theme is reinforced by a

4. Verlan would be used to cover youth slang in general, not specifically nor exclusively terms derived by verlanizing processes.

discourse on verbal violence, construed as part of the suburban sub-culture, which is sometimes a substitute for, as well as a precursor of, physical violence.

This discourse on what might be construed as new urban ethnolectal slangs is clearly in need of clarification. Are these slangs genuinely multi-ethnic? To what extent does "ethnolectal crossing" – to use Rampton's term (1995) – occur? Sociolinguistic work has not always served to clarify these issues. For instance, Goudaillier (2001: 8) cites Malika, a student in higher education from the Paris suburb of Montfermeil:

> *Nous, les rebeus, quand on se réveille le matin, on ne se tape pas la tête contre les murs en regrettant d'être rebeus... Entre nous quand on parle français on dit toujours quelques expressions arabes, ça nous rapproche, c'est un signe d'affection et de complicité. En plus, comme ça énerve les gens autour de nous, on en dit encore plus, on montre qu'on est différents...*
>
> 'We Arabs, when we wake up in the morning, we don't bang our heads against a wall, because we regret being who we are …Among ourselves when we speak French we always slip in a few Arabic expressions. It brings us closer together. It's a sign of affection and mutual understanding. Moreover, as it annoys people around us, we do it all the more to show that we're different'.

While there is clearly an expression of ethnic identity expressed in part by assuming Arab/Maghrebian identity through the use of the verlan term *rebeus*, the code-switching or code-mixing that she describes is intra-ethnic rather than pluri-ethnic and may well be an indicator of language loss, that is of Arabic within the Maghrebian community where the use of Arabic words in French may be an act of ethnic solidarity but specifically excludes other ethnic groups. Moreover, the studies of Goudaillier (2001) and Sayah (1997, 1999a, 1999b, 2001) fail to take account of the social sub-divisions of the Parisian *banlieues* in the geographical sense and the vast and socially differentiated development of Le Mirail in Toulouse. In addition, the informants quoted are not necessarily heavily immersed in the counter-culture, but actively looking to better themselves through higher education.

It may be that young people of Maghrebian origin are most frequently the dominant element in the sub-cultural mix, and therefore take a leading role as trend setters, to the point where multi-ethnic vernaculars are referred to as *Beur* French, without there necessarily being any specifically Maghrebian elements involved (e.g. Armstrong 2003: 31):

> *on a bien chafrav (travaillé), maintenant c'est en teboi (boîte) qu'on va* (cited from Goudaillier 2001 :29)
>
> 'We've been working hard and now we are going to a club'.

It is possible to think of parallels, for instance in UK, where London Jamaican (Sebba 1993) is adopted as a common variety of black talk, features of which may also be heard in the mouths of Whites and Asians (Hewitt 1986).

Décugis and Zemouri (1995: 1973) hint at the possibility of sub-regional variation within Greater Paris, distributed according to greater concentrations of particular ethnic groups, for instance, *go* rather than *meuf*:

> *il y a des expressions ou des mots qui existent dans un département mais pas dans un autre. Dans le 95, par exemple, pour dire* ***meuf****, on dit* ***go****. C'est surtout les blacks qui disent ça. Ou* ***daron*** *à Champigny (94), c'est le père.*
>
> 'There are expressions and words which are used in one *département* [administrative area] but not in another. In *département* 95 (Val d'Oise) for instance, people say ***go*** rather than ***meuf*** for 'woman, girl'. It's mostly black guys that use it. Or ***daron*** for *père* 'father' in Champigny (94, Val De Marne)'.

Researchers working on different French cities have suggested too that innovative verlan (as opposed to words of verlan origin that have passed into generalized informal vernacular French) is very much a Parisian phenomenon, whereas innovations particularly to other cities – Grenoble (Billiez et al. 2003), Marseille (Goudaillier 2001), Lyon (Décugis 1996), Lille (from my own observations) – use other word-formation processes.

As Armstrong (2003: 19) observes:

> *the French linguistic situation is one of the more extreme examples of what happens in a society that had a standardized language". The standard language of formal writing is relatively conservative and shows many differences from the colloquial spoken language. The ideology of the standard into which the French state has invested over the centuries is strongly inculcated in the minds of children from the earliest age* (Caitucoli, Delamotte-Legrand & Leconte 2003).

Most French school students acquire standard French 'as a second dialect' (to use a very anglo-centric turn of phrase) with sufficient proficiency to negotiate the education system and pursue successful careers, while some of all ethnic backgrounds do not. Many media contributions attribute all kinds of educational failure to youth culture and its accompanying *"enfermement linguistique"* 'linguistic confinement' (Begag 2000) in a debate that recalls the one provoked in UK by Bernstein (e.g., 1971)*: "un appauvrissement qui emprisonne un peu plus les jeunes d'origine modeste dans l'exclusion sociale et territoriale"* 'an impoverishment that keeps young people particularly from low-status origin confined in social and territorial exclusion' (Begag 1997; cited in Begag 2000). For instance, extreme poverty of standard French lexis and inability to make a telephone call appropriately to request a work placement (Potet, *Le Monde* 2005). In this same article, Alain Bentolila is quoted as estimating the vocabulary of slang users at less than one sixth of that of the average speaker (350–400 as opposed to 2,500 words).

> *Je veux bien qu'on s'émerveille sur ce matériau linguistique, certes intéressant, mais on ne peut pas dire: "Quelle chance ont ces jeunes de parler cette langue!", objecte ce professeur de linguistique.*

> 'I am quite happy for people to go into raptures about this linguistic material, which is undoubtedly interesting, but one cannot say: "How lucky these young people are to speak this language! objects this professor of linguistics'.

Youth slang is seen as a social handicap, a minority language, which like the regional languages under the Third Republic, should be abandoned in favor of the common code, which opens doors to wider society. It would be naive, however, to attribute educational failure to the use of youth slang and believe its suppression will bring a remedy. As Décugis and Zemouri (1995) and Lepoutre (1997: 154) observe, verlan (and youth slang in general) is used as part of an informal speech style, and most of its users can adjust their speech appropriately, and switch to standard French as the situation demands:

> *Je ne connais personne qui fasse des phrases entièrement en verlan. En général, tu as des mots et des expressions qui reviennent mais ça dépend à qui tu parles. Si je vais à la mairie ou que je parle à mon prof, je leur parle normalement (Décugis & Zemouri 1995: 73).*

> 'I don't know anyone who uses whole sentences in verlan (backslang). Generally you have words or expressions that crop again and again but it depends who you're talking to. If I go to the town hall or if I want to talk to my teacher, I use normal French'.

While media hype (e.g., Catherine Genin in *Le Monde,* September 2, 1995) and filmic representations (in particular *La Haine*) point to the existence of a new dialect more or less incomprehensible to the majority of the population, this perception does not stand to the scrutiny of careful fieldwork that takes account of local situations (Fagyal 2004: 43; Lepoutre 1997: 430). Boyer (2001: 77) distinguishes three periods of media coverage of the phenomenon: in the 1980s, the press referred the language of young people as *français branché* 'fashionable French' or even *le jeune* 'young speak' before narrowing it down to certain underprivileged young people, and then by the mid-1990s, pushed it still further to the multi-ethnic and multilingual elements of the poorer communities.

As Trimaille (2004: 118) observes, magazine articles of the 1980s were aimed at parents who wanted to understand their own children. From the mid-1990s (Krief 1999: 19), the reference to parents was dropped and geographical (*cité* and *banlieue*) and glottonymic labels (*langue, nouveau français, verlan*) were increasingly added. A number of popular entertainers have cashed in using youth jargon and cultural stereotypes to achieve comic effect, for instance Arthur, with his collection of *ta mère* jokes, and Jamel Debbouze, who exploited youth vernacular in his humor, as well as the comic sketches based around stereotypical *jeunes de banlieue* of comedians Elie Semoun and Dieudonné. Filmic portrayal of the *banlieue* may also exploit features of urban youth vernaculars for comic purposes, as in the case of Chabat's *Mission Cléopâtre* (2003), or portray them in a drama as in the case of Kassovitz' film *La Haine* (1995).

This focussing of youth slang has influenced linguists in unhelpful ways. Goudaillier (2001) and Sayah (1997, 1999a, 1999b, 2001) present urban youth vernaculars as

dangerous anti-norms, concomitant with all the major social ills associated with poorer urban areas and espoused by the excluded. Goudaillier (2001) hints at the possible importance of local variation but fails to go beyond the level of anecdotal suggestion. Sayah concentrates on the vast development of Le Mirail to the south-west of Toulouse city center but does not give due consideration to the highly differentiated character of the area (Boyer 2000: 70) and the crucial importance of the *quartier* in the formation of social identity (Lepoutre 1997: 20; Armstrong & Jamin 2002: 119).

Fagyal's (2004) longitudinal study of youth language in the northern Paris suburbs, including Les 4000 in La Courneuve, provides cogent reasons for rejecting the notion of new-dialect formation. While her adolescent informants were under the impression that they not only spoke bad French but in a way particular to their local area, they were hard put to cite examples (p.55–56). One of the few claimed features of the local code *c'est de la balle* 'it's fantastic' proved to be known to a random group of middle-class colleagues and relatives of various ages. Fagyal notes a number of slang items like *clope* 'cigarette' and *tune* 'money' that are traditional *argot* words now used in informal styles by most of the population, and a number of semantic extensions such as *cul sec* 'straight up' used in the context of leaving rather than drinking quickly, and *ringard* 'old fashioned' used with a very positive connotation.

To conclude this section, I wish to raise questions to which the literature so far discussed does not give clear answers. Firstly, how is it that traditional *argot* words have survived so well in the speech of communities, where, to say the least, the presence of working-class *Franco-Français* is seriously downplayed? Secondly, by what mechanisms are these varieties (or features) transmitted? Thirdly, where are the key centers of innovation? If we assume that phonological features and interactional norms correlate with use of marked lexical items, then variationist and ethnographic work may help to clarify these issues.

4. Sociolinguistic variables

As Armstrong has argued (Armstrong 2003; Armstrong & Jamin 2002;), there is good reason to believe that the *banlieues* are the main source of vernacular innovation at the phonological level against a general backdrop of levelling to(wards) a supra-local norm (Pooley 2006b, 2007).

Curiously, the first variationist study of the Paris *banlieue*, that of Laks (1978) in Villejuif to the south of capital, focused on features such as the dropping of liquids (/ʁ/ and /l/ after obstruents, as in [sɑ̃t] *centre* and [tab] *table*), and linking words like [epi] *et puis,* which may, now three decades later, be considered compatible with supra-local norms. That said, the careful ethnographic work was rewarded with positive results, with integration into a network of young lads centered around the *Maison pour tous* 'youth center' in Villejuif corresponding to heavier use of the features selected for analysis.

Table 4. Divergent phonological features in La Courneuve (Armstrong & Jamin 2002: 132)

	Feature	Examples
1	Use of back a in all contexts	la table [lɑtɑbl], or c'est grave [segrɑv]
2	/ɔ/ raised towards /o/	la mort [lamoʀ] la police [lapolis]
3	Closing of /ɛ/ to /e/ before word-final uvular approximant	ta mère [tameʀ], je suis vert [veʀ]
4	Raising and lengthening of /œ/ to [ø] before /ʀ/	j'ai peur [ʒepøʀ]
5	Affrication of dental and velar stops	/t/ realised as [ʧ] and /d/ as [ʤ] before / i, y, w / tu dis [ʧy di] toi [ʧwa] je veux dire que [ʒvødʒikʃə]. /k/ realised as [kʃ] before /aɑiɛəyœø/ and after nasal e.g., qui [kʃi] donc [dõkʃ].
6	Strongly fricative ʀ	ta mère [tamɛʀ]

More recent studies have focused on features more clearly indicative of urban vernaculars, looking at variants characteristic of traditional Parisian slang or *titi parisien* of pre-World War II times and of Dialectal Arabic may be heard in certain areas, in particular la Courneuve studied by Lepoutre (1997) and Jamin (2005, 2007). The dual origin of the features divergent from the supra-local norm is clearly illustrated by the vernacular features noted by Armstrong and Jamin (2002) reproduced in Table 4.

Features 1 to 5 may be classified in ethnic terms as Franco-French or 'metropolitan' vernacular norms. They are characteristic of traditional slang and feature or have appeared in a number of regional varieties. Back *a* is what might be called a socially split variant, characteristic of both vernacular and somewhat old-fashioned standard varieties, although until fairly recently pronunciations such as [pɑse] *passer* were recommended as target forms for FLE.[5] In Parisian and Normandy vernacular, it is a small-set variant that occurs in certain words, whereas in the north (Nord–Pas-de-Calais) and west (Brittany), it tends to occur in open word-final syllables. What appears to be happening in La Courneuve is that some speakers are treating it as a purely phonetic variant and using it (variably) in all contexts.[6] Pre-rhotic close *o* and raised *e* are also to be found in older and marginalized vernaculars, whereas the raising of /œ/ to [ø] before /ʀ/, admittedly without lengthening, is arguably a (variably occurring)

5. The Oxford-Hachette (1994) recommends [pɑse] *passer* but *un passe* [pAs], whereas the Collins-Robert (1978) has [pase] *passer* and [pasã] *passant*.

6. This also happened in Roubaix (Nord) in the late 19th century (Viez 1910), although the process has moved further through the lexicon in the Paris suburbs.

feature of the supra-local norm. Finally, Feature 5, affrication, has been attested in Parisian vernacular for centuries (Rosset 1911).

Only Feature 6 appears to be a recent innovation most heavily used by speakers of Maghrebian origin (e.g., Table 6). For features 1, 5 and 6, however, a good case can be made for convergence within divergence (Jamin, Trimaille & Gasquet-Cyrus 2006) since they appear to be used in the pluri-ethnic areas of several cities. The use of back *a* as a phonetic variant has been observed not only by Jamin in la Courneuve in the northern Paris suburbs, but also by Trimaille in Chorier-Berriat, a multi-ethnic area of Grenoble. That said, only Jamin's data reflect the multi-ethnic character of the area investigated through the choice of informants, since Trimaille focused on speakers of Maghrebian origin. In Lille, back *a* with a lexical distribution characteristic of northern regional French was found to be an ethnic marker for youngsters of European descent, particularly boys (Pooley 2000). In contrast, in the Paris suburbs (Jamin 2007) use of back *a* carries very different phonological distribution and social meaning. Whereas in northern French, the most marked variants occur most frequently in word-final open syllables, in Paris they tend to be used in checked syllables. For the heaviest Lillois users, it is a majority form, while their Parisian counterparts realize it in fewer than one in five possible cases.[7] Jamin's data also suggest that it is also an ethnicity marker in Paris, although in this case most notably for boys of Mahrebian background. A strong fricative and sometimes pharyngeal *r* has been noted in both Paris and Grenoble, but also in Perpignan by Pickles (2001). The findings of this latter study show this variant to be used by school students of Maghrebian origin significantly more than speakers of other ethnicities, but not particularly those from social-problem areas.

The affrication of *t* and *d* has been observed again in both the Paris and Grenoble studies, to which may be added the perceptual approach of Gasquet-Cyrus who adduces convincing evidence that the feature, despite its long-standing attestation in metropolitan vernaculars, is perceived in the *imaginaire linguistique* of the Marseillais as characteristic of their fellow citizens of Maghrebian origin, living in the northern suburbs (*quartiers nord*, hence the term *accent QN*).

In the Paris and Perpignan studies, all the variants turn out to be minority features, that is, making up fewer than half of all possible cases by those who use them. In Grenoble, however, two of the three variants are strong majority features for some speakers even in reading styles as shown in Table 5.

Table 6 suggests that for the young people of various ethnicities in the northern Paris suburbs, palatalization/affrication is an indicator, in the classic Labovian sense, as it is used more by those of Maghrebian origin than the *Franco-Français* or members of other ethnic minorities, although there are no significant differences between reading style and interview style.

7. Maghrebian-dominated should be taken to mean the largest element of the ethnic minorities, who may constitute up to around to 30% of the school population.

Table 5. Frequency of three non-standard variants in reading style in Paris and Grenoble

	Affricated stops		**Pharyngal *r* [ʀ]**		**Back *a* [ɑ]**	
	N	%	N	%	N	%
Paris (4 speakers)	426	31	120	13.3	374	23.6
Grenoble (7 speakers)	322	91.3	217	78.6	168	16

Table 6. Palatalization of dental and velar stops in two styles (Jamin 2005: 43)

	Interview Style		**Reading Style**	
Ethnic origin	N	%	N	%
native parents	3349	6.4	579	5.3
Maghrebian parents	4465	21.6	741	22.9
Other migrant origin	2746	13.6	379	16.7

Table 7. Affrication according to style, age and gender in La Courneuve (Armstrong & Jamin 2002: 133)

	Casual Style		**Reading Styles**	
	N	%	N	%
Males 15–25	1369	22.5	111	17.3
Females 15–25	387	13.4	26	8.3
Males 30–50	18	0.6	1	0.2
Females 30–50	52	1.4	1	0.2

For all groups, boys use affricated and palatized forms more than girls and adolescents, and young adults (aged 15 to 25) use the variants more than mature adults (aged 30 to 50). Table 7 shows that it is fundamentally a significant minority variant for the younger age group immersed in street culture, while it is used only occasionally by the adults who have settled lives characteristic of mainstream values, particularly employment and the nuclear family.

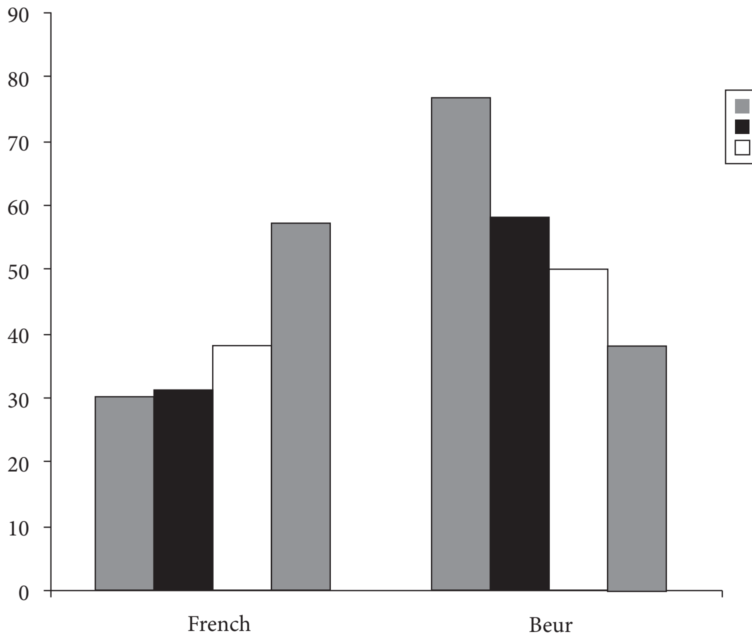
Curiously, despite these high rates of usage and significant correlations with certain patterns of behavior (immersion into street culture), the perceptual salience of palatalization is surprisingly weak in Grenoble (Vernet & Trimaille 2007) in contrast to Marseille where it appears to be a stereotypical feature of ethnolectal usage. The suggestion (Jamin et al. 2006) that multi-ethnic areas of widely separated French cities are diverging in similar ways from supra-local norms clearly requires qualification. While phonetically similar variants are indeed ethnolectal markers, they differ in significant ways in different locations: palatalization/affrication is stereotypical in Marseille but of

low perceptual salience in Grenoble despite high frequency of use; back *a* is an ethnolectal feature in both Paris and Lille but its lexical distribution and social significance are radically divergent. It may be that where local vernaculars maintain 'traditional' regional features, speakers of European descent are likely to claim 'ownership' of them more strongly, as Hambye (2007) suggests for Francophone Belgium.

The work of Pooley (1996, 2000, 2004) in Lille covers both old and decaying inner-city industrial areas (*courées de Roubaix*) and post-1960s high-rise estates (Trois-Ponts, Roubaix). The data collected in the early 1980s concentrate on Franco-French speakers and show the vitality of dialectal features among older speakers and the emergence of (non-exclusive) regional French features, particularly back *a* in open final syllables and the use of open *o* in checked syllables in items where a close variant dominates in the supra-local variety as in *côte* [kɔt]. Both features are more than holding their own (use of back *a* was actually increasing in the mid-1990s), despite large-scale convergence towards supra-local norms, particularly at the expense of the traditional vernacular (Picard). Studies of past (Pooley 2006a) and contemporary migration show that migrants have mostly settled in poorer working-class areas and that this resulted in high levels of interaction with locals of comparable social background. With regard to the Flemish immigration in the 19th and early 20th centuries, the evidence points to linguistic assimilation to local vernacular norms, which were transformed in the process. Slum clearance in the 1920s physically transformed the traditional inner-city heartland of the vernacular in Lille (Saint-Sauveur), leaving the new (and in the 19th century highly Flemish) area of Wazemmes to take on the mantle of patois-speaking area in local mythology.

Maghrebian immigration in the second half of the 20th century has given rise to relatively high concentrations of North Africans who generally form the majority of the ethnic-minority population in certain multi-ethnic areas, which may be old inner-city quarters such as Lille-Sud or *les barres et les tours* of the 1960s and 1970s, such as the Trois-Ponts in Roubaix. While data from these areas still have to be analyzed, results from a study conducted in the working-class area of Rouges-Barres in the largely relatively prosperous town of Marcq-en-Barœul close to Lille city center confirm the dominance of local vernacular norms, particularly the use of back *a* as an identity marker. The use of such features could be shown to correlate with integration into school-based peer groups, highlighted by a reversal of the dominant sociolinguistic gender pattern among the *Beurs* (Pooley 2004: 401). Curiously, the data indicated that *Blancs* and *Beurs* perceived the prestige norm differently in the case of open *o* as the 'reverse staircase' patterns suggests (Figure 1).

In popular perception, history can be said to be repeating itself as the better-off sections of the community (for the greater part Franco-French) leave the undesirable old industrial areas for better-quality housing in the green periurban *communes* within easy commuting distance, creating significant disparities in the ethnic make-up of the population with the old industrial heartlands (certain areas of Lille-Roubaix-Tourcoing) where



Note. GS = Group (casual) Style; IS = Interview Style; RPS = Reading Passage Style; WLS = Word List Style

Figure 1. Style shift in the use of open *o* by Franco-French and Beur adolescents in Rouges-Barres (Marcq-en-Barœul) in the mid-1990s) (Pooley 2004: 401)

Maghrebian-dominated[8] multi-ethnic communities flourish. This has given rise to popular perceptions of sociolinguistic phenomena, particularly that of 'crossing' (Rampton 1995), that is Franco-French young people using Arabic words.

This is yet another of a number of cases where shifts in perception do not correspond to shifts in behavior, which remain under-investigated. The studies reviewed do not by any means suggest that there is such a variety as *beur* or *banlieue* French (cf. Trimaille & Billiez 2007: 95ff). Even the variant most plausibly attributable to the contact with speakers of Dialectal Arabic, the pharyngeal or strongly fricative *r* in word-final position, could be arguably construed as a phenomenon of emphasis as is the case in middle-class Parisian (Malécot 1975: 51–63). The example quoted by Armstrong and Jamin (2002: 135), ta mère [tamɛʀ], is of course a stereotypical context because of the popularity of jokes beginning "*ta mère, elle...*" ('your mother, she…') based on ritual insults. For young people of Maghrebian origin, this may well be a case of "*si on en a l'honneur, autant avoir le profit*" ('if you get the reputation, you might as well have the

8. They are not mentioned at all in the Grenoble study, and are, for instance, very much a minority presence in Lille.

benefits'). Many things, both negative and positive, have been attributed to them, the social ills of the *banlieues*, the vernacular (and by extension destructuration of French), as well as being the main inspiration for French rap. Some have undoubtedly tried to live up to the reputation attributed to them. I have to say also that I have observed cases where groups of young men of Magrebian origin, but not necessarily from the poorest socio-economic groups, deliberately adopt a *Beur* accent when conversing among themselves. Some linguists, in particular Conein and Gadet (2000) and Fagyal (2004) refer to distinctive intonation patterns, but do not regard them as indicative of a distinct variety.

The demographic changes demonstrable from detailed work in Lille may give pointers as to why traditional working-class features have survived so well in the Parisian suburbs. For the older suburbs, the build-up of non-metropolitan residents in long established industrial communities was gradual over a matter of decades. Even in the suburbs developed in the 1950s and 1960s, working-class *Franco-français* would have been numerically dominant until the latter decades of the 20th century. While older people might not move home, many of the younger generation would seek better housing, be it a better quality apartment to rent or a new house to build in the Greater Paris Region. There would have been time for the children of the early migrants not only to become French-dominant but to assimilate to vernacular norms, which were almost certainly attenuated in the process, but maintained far greater vitality than serious observers of Parisian vernacular would have believed.

5. Ethnographic approaches

It is widely recognized (e.g., Bachmann & Basier 1984; Goudaillier 2001; Lepoutre 1997) that youth slang in the *banlieues* realizes a number of functions, which are by no means unique: language play, initiation, a secret language. The forms of language play in French youth slang – puns, spoonerisms, riddles, and so on – are obviously widely shared, but may be perceived as funnier than similar phenomena in more mainstream varieties (cf. Conesa 2000). The initiatory function helps to affirm group membership as part of a range of social codes. In some of the earliest observations on verlan, Bachmann and Basier (1984) noted that such linguistic features were mostly used by adolescents most heavily immersed into street culture. For young people of lower-secondary age (*collège*) most particularly, use of verlan was one of a number of indicators of identification with anti-establishment norms (i.e., those imposed through the school system). Lepoutre's (1997: 9–20) illustrative transcription of his fieldnotes designed to illustrate the difficulties of 'getting through to' a potentially valuable informant, is punctuated by the use of verlan placed in the mouth of Samir who is clearly showing the teacher and would-be ethnographer that he is an outsider. There is no lack of testimonies by young people using verlan to fool the police or teachers, or to annoy fellow *métro* passengers, but this secret-language function could on many occasions be better realized through Arabic or another ethnic language (cf. Trimaille & Billiez 2007: 96).

Lepoutre (1997: 173ff) describes the forms of verbal jousting which went on in Les 4000 estate in the early 1990s, which have much in common with soundings or dirty dozens described by American sociologists and sociolinguists. Very prominent are ritual insults called *vannes*, which may be used in stand-up contests (before a spontaneously gathered outside audience) or as a form of teasing. Stand-up contests may also take the form of rap (which usually take place at organized events at indoor venues). Both forms of exchange require high levels of verbal virtuosity, which is a highly prized asset within adolescent sub-culture. Lepoutre classifies *vannes* as direct, for example, poking fun at the physical or psychological characteristics of the person, such as her or his big nose or spotty face. Indirect *vannes* may allude to membership of a certain group, be it the family or an ethnic or national group or making a play on the person's name, or punning on her or his name, for instance Jean-Luc to *j'encule* 'I bugger' or Delphine Barant becomes *barbant* 'boring'. Probably the best known type of indirect ritual insults start with "*ta mère, elle...*" 'your mom, she..', for example, "*ta mère, elle s'est jetée du 15e étage, le sol il s'est sauvé*" '[when] your mom threw herself from the 15th floor, the ground did a runner' (Arthur 1995). There are also soundings which begin "*ton père, il....* " 'your dad, he…'. While undoubtedly part of adolescent (multi)-ethnic sub-cultures in many parts of the world, they penetrated the French mainstream through the publication of collections in book form and their stylization in rap and hip-hop. One of the most famous groups to exploit this form of exchange was the group NTM, whose name (*nique ta mère* 'fuck your mother') may be interpreted as a form of this type of exchange. Part of the attraction of this type of music is the loud, fast-talking verbal virtuosity of its exponents. Lepoutre notes too that perfectly convivial exchanges may appear aggressive according to middle-class norms (Bachmann 1992: 59–78). Indeed, insult sessions can be a form of bonding. "*On s'est bien marrés, on s'est bien insultés et tout...* " 'We had a real laugh, insulting each other and all' (Lepoutre 1997: 209).

Many of the "*ta mère, elle...*", "*ton père, il...*"-type jokes allude to the sexual behavior of the interlocutor's parents and may therefore not seem funny to the person who is the butt of the joke. It is no longer so much a matter of sounding, slegging or giving stick, but of genuinely offensive language. Indeed, the shortened form "*ta mère*" is usually construed in this way.

There are discernible, but somewhat fuzzy, guidelines which differentiate the harmless fun of sounding and the hurtful insult. *Vannes* often rely on such grotesque exaggeration to achieve amusing effect that they are usually obviously absurd. Lepoutre (1997: 206) notes certain taboos with regard to physical defect due to illness, for example a girl with marks on her face because of illness was never the butt of jokes and a quip about somebody's mother being bald was put down in no uncertain terms since the hair loss resulted from chemotherapy. As there is no clear lines between ritual and real insults, individuals may take offense where none was intended. Generally speaking, as Tannen (1998: 189) observes, women are somewhat more likely to interpret ritual insults personally than men.

Real insults like ritual insults follow certain patterns. Indeed, verbal exchanges usually precede recourse to physical violence, which may be the only way not to lose face when verbal insults leave a protagonist speechless, or in the jargon "*mis à l'amende*". The code of honor of the *banlieue* demand quick and decisive reaction to insults. On many occasions, the insulter can be put down verbally by affirming indifference, by uttering for instance "*casse-toi*" 'get lost', "*lâche l'affaire*" 'drop it', "*ta gueule*" 'shut the fuck up', or "*on s'en fout (de ta vie/mort/génération*)" 'we don't give a fuck (about your life, death, generation)'. Not surprisingly, the repartee of an even quick-thinking talker may at times dry up, in which case, there remains a stark choice between walking away (and losing face) and resorting to physical violence.

Lepoutre notes other forms of hurtful talk: informing, gossip, lies. In tight-knit working-class areas, the taboo on 'grassing up' (*la loi de l'omertà*) applies. As criminal activities are regarded, to say the least, with some ambivalence and often with admiration, the informer risks being ostracized and may be sanctioned in other ways. In a sub-culture where so many things go on in public places, such as open ground between blocks of apartments, stairways and playgrounds, personal secrets, however apparently trivial, are at a premium and to divulge them may be interpreted as an act of betrayal or a deliberate provocation. Lying is also looked upon with a certain ambivalence. A school student who has the verbal dexterity to lie his or her way out of trouble may well be admired, but lying about another member of the community is taboo, and lying to impress is frowned upon, and those who indulge are labelled *mytho*.

The term *mytho* is one of three personal insults (the other two are *ta mère* and Arabic *kehba* 'prostitute' or *kahba/qahba* or its verlan form *barca*) analyzed by Baines (2007) in a perceptual study based on a questionnaire and interview. The most offensive of the three is *kehba*. *Ta mère* may be equally offensive and obscene, but is arguably much milder because of its frequent use in ritual insults. In contrast, *mytho* lacks the taboo character of the other two items.

The study is based on 483 questionnaires completed by informants in eight locations in mainland France and Guyana, followed by interviews with a sub-set of about 40 participants. The main thrust of Baines' analysis focuses on gender differences, in particular with a view to problematizing the classic sociolinguistic gender pattern which was one of the most solid findings of early variationist sociolinguistics. Complementary to the greater use of vernacular variants by men in situations of stable variation is the perception that men use taboo language and indulge in ritual insults more than women. This perception of taboo language is, however, considered to be a "folk-linguistic belief" by Coates (1993: 126–7). Other studies quoted by Baines such as De Klerk (1992) and Bayard and Krishnayya (2001: 1) see the use expletives not as indicators of masculinity, but of power and solidarity available to both genders. Table 8 summarizes the key findings of the study. Although in all three cases, male respondents claim to use the expletive in question more than the women, the difference is most significant in the case of *ta mère*.

Table 8. Professed use of three expletives by male and female respondents (Baines 2007: 135–6)

Item	Males %	(N)	Females %	(N)
ta mère	82.2	217	60.2	266
kehba	21.1	213	15.5	265
mytho	76.7	215	65.3	265

Baines (2007 :136) argues that these findings are indicative of a narrowing of the gap between male and female use of vernacular and taboo language. The use of *ta mère* may be perceived as stereotypically male in no small measure as a result of the commercial exploitation of popularized male stereotypes. One could also argue that despite greater degrees of gender parity than in previous generations, the subjects show high levels of gender distinction, given that both boys and girls undergo very similar forms of socialization and increasingly converging professional expectations, and participate in frequent interaction through co-ed schooling.

Billiez et al.'s (2003) study of ethnic-minority adolescents in Hoche, a working-class area of Grenoble, suggests that small differences in behavior including language use, are highly symbolic in the perception of male and female talk. Linguistic analysis points to differential use by boys and girls of shared features, although the scale of the study is too small to produce statistically significant frequencies in the use of lexical items. The principal vernacular indicators discussed – *verlan*, items of Romany origin, traditional *argot* and the absence of the verbal suffix [e] (as in *on se fait fusille par le patron* 'we got shot, i.e., told off, by the boss') – were all used more by boys. For the investigators, these vernaculars showed greater differentiation between the genders than the use of taboo lexical items. In both the male and female peer groups studied, the 'leader' swore the most, a finding compatible with the notion that swearing is partly a means of asserting power. On the other hand, the girls made greater use of *trop* 'too' in the sense of *extra* or *super* and even *vraiment* 'really'. These differentials may be construed as displaying a consistent picture, in that such use of *trop* can hardly be argued to be a marked working-class vernacular feature, but one used by speakers of all social classes, albeit, in my perception at least, to a significantly greater extent by the young.

A second part of the study elicited the reactions of a second set of subjects to two sample extracts (with a male and a female speaker) that were impressionistically similar in terms of the linguistic factors discussed. Relatively minor differences in behavior, however, were perceived as highly differentiated by both genders. Both genders not only attributed the use of youth vernacular to boys, but also evaluated such verbal behavior far more positively in the mouths of boys, in contrast to the more negative perception and personal dissociation by female informants. When confronted with the undeniable similarity of the recordings to their own speech, younger girls (12–13) were happy to recognize it, whereas older ones dissociated themselves from such

usage. While apparently manifesting tacit acceptance of the similarities, the boys vehemently asserted that they did not talk like girls (*on parle pas comme des gadjis quand même* 'we don't speak like girls, you know') (Billiez et al. 2003: 183).

Such perceptions need to be placed in the context of the crucial social differentiations made by young people. In the Grenoble study, the crucial distinction in terms of language use is made between two major categories: *les 'bourges'* (white speaking standard(-ish) French, older people) and '*langage racaille*' where *racaille* 'scum' (or its verlan form *cailleras*) refers to a language and behavior strongly associated with Maghrebians, particularly boys. Lepoutre's participants distinguished between *racaille* or *cailleras* on the one hand, and *bouffon* 'clown' on the other. In both studies, the term *racaille* is infused with high levels of sub-cultural capital, and is strongly associated, again in a very positive sense, with the values of the adolescent counter-culture. On the other hand, the *bourge* and the *bouffon* are seen as lame (Labov 1972) and lacking in virility – they are referred to as *pèds* or *tapettes* 'homos', particularly by the boys. Much of the evaluative discourse in the Grenoble study associates this way of talking with Maghrebian (*brounes /brounettes* 'people with dark hair, dark complexion), particularly boys. Girls who are perceived as behaving linguistically or otherwise like boys are designated by highly pejorative terms, particularly associated with Maghrebians, *raclures* or *ratonnes*. While such girls challenge the perceived masculine hegemony in terms of the control of sub-cultural capital, others, particularly those strongly immersed in Muslim traditions, prefer to opt out (Doran 2002: 201–202). The notion of the vernacular as the *langue des keums* (e.g. Genin 1995) corresponds much more closely to perceptions and expectations than behavior. This summary seems to point to the apparent relative invisibility of the other ethnic groups, such as Blacks or Asians, despite their being well represented in the study. There may be to some extent an evacuation of convenience, since it may have been much less threatening for them to confine the discussion to the two most numerous ethnicities. In other ways, however, for example dress and music (Lepoutre 1997), black youngsters, in particular, adopt distinctive styles. Another group, the Romani, appear to punch above their demographic weight as regards their contribution to the vernacular lexicon.

Lepoutre's (1997) study adds clarification to the age patterns of variation reported by Jamin. Immersion into the adolescent street culture is at its most intense between the ages of 10 to 16. The longitudinal character of Lepoutre's work enabled him to interview some of his informants in their late teens (1997: 427), at which point they are professing to have changed, and beginning to disavow allegiance to the vernacular culture. On the other hand, pre-teens are being initiated into the street culture by the older *collège*-age adolescents. Assuming linguistic norms to be relatively stable, at least compared to fashion in dress and music genres, the typical period of immersion is long enough for community-based transmission to take place, but short enough for the sharply differentiated age patterns reported by Jamin to become almost predictable.

These findings would also suggest that immersion into street culture and the concomitant forms of linguistic behavior – such as use of verlan and certain phonological

markers – correlates with the degree of immersion into adolescent sub-culture, there is no strong link between this adherence to these linguistic counter norms, which tends to be ephemeral, and the more dangerous forms of anti-social behavior, such as major theft, drug dealing and life-threatening violence.

6. Transnational comparisons and conclusion

As Armstrong (2001, 2003) points out, the high degree of phonological levelling which is specific to French, puts greater importance on variation on linguistic levels such as lexis and grammar. He also observes in Armstrong (2001: Chapter 7) that there are generalized informal words, many of which come from argot, for a far wider range of concepts than appears to be the case in English. Wise (2000: 128) suggested as well that French youth slang was far more dynamic than British slang, although Randall and Anderson (2005) estimate that in English there are now five new coinages per day, an estimation which would surely make English slang more productive than French slang. Formation processes that do not appear to be prominent in French slang have far greater importance, such as semantic shift (e.g., *sick* 'incredibly good'), filling accidental gaps (e.g., *peng* 'good-looking'), acronyms (e.g., *twoc* 'nick, i.e., take without consent'), and blends (e.g., *fugly* 'fucking ugly').

Perceptions of English youth slang seem to have followed the reverse trajectory to its French counterpart. Whereas French youth vernacular has shifted from being seen as a generational variety (set of varieties) to a socially and ethnically marked form of behavior, English youth slang has moved from being considered a dangerously subversive anti-language to a largely generational phenomenon.

> In the British context, in particular the explicitly 'countercultural' content, the element of resistant 'anti-language' present in street-gang argot, criminal cant and the youth slang of the 1960s and 70s, seems to have dwindled into insignificance (Thorne 2005: 6).

Indeed, on both sides of the Atlantic, groups who represent mainstream values, college and university students and young adult professionals are among the most active contributors. The ethnic factor seems to be regarded as neutral and normal, given the demographic make-up of the population of major cities. As Wise (2000) observes, the contribution of *lycéen* slang where young people of all social and ethnic backgrounds appear to show considerable lexical creativity without provoking reactions of outrage or cries of despair about 'verbal deficit' has been seriously underestimated. As Lamizet (2004) argues, all aspects of youth culture can be enjoyed and identified with by people of all social backgrounds and well beyond the usual chronological age limits. As Rey (1998) puts it, older adults are fascinated by the apparent deviance of youth culture, giving rise to a growing mass of *post-soixante-huitard 'faux jeunes'* 'ageing adults who

wish to remain young and trendy in the spirit of May 1968'. As Bulot (2004: 139) observes, use of such so-called stigmatized language is not necessarily stigmatized.

Seen in this perspective, the use of youth vernacular is by no means a strong indicator of exclusion, certainly less so than living in certain areas. In the words of Melliani (2001: 72):

> *C'est la concentration géographique de l'exclusion sociale qui favorise un processus d'individuation sociolinguistique, et non pas les différences langagières qui maintiennent ces jeunes dans une exclusion sociale.*
>
> 'It's the geographically concentrated character of the phenomenon that favors a process of sociolinguistic individuation, rather than differences of language keeping these young people in social exclusion'.

Indeed, as in the past with the regional languages, particularly those closest to French, the most verbally gifted learn to manipulate the various codes, including slang as well as the genres mediated through Standard French, most nimbly and to separate them more clearly. The crucial linguistic factor in social exclusion is the lack of mastery of the written form, and perhaps to a lesser degree the more formal spoken styles, of the standard variety. That said, the issue of the anonymous CV which was headline news in 2004, would suggest that, even if with higher-education qualifications, social exclusion is significantly worsened by living in certain postal areas or possessing ethnically marked patronymics.

The variationist studies reviewed in Section 4 provide some evidence of phonological innovations in urban vernacular speech, and that these innovations correlate with ethnic factors. Jamin's work in La Courneuve shows that the features in question palatalization/affrication of *t* and *k*, back *a* and strongly fricative *r* are minority forms for speakers of all ages and ethnic backgrounds. In other cities, these features may be majority forms among those who use them most heavily (back *a* in Lille; palatalization/affrication in Grenoble), but in neither case does it seem appropriate to argue that a new dialect is emerging. Back *a* in Lille, as with other traditional regional features (Hambye 2007) is used significantly more by speakers of European descent. Where behavioral studies have shown the other features to be Maghrebian ethnolectal markers, as in the Paris suburbs and Grenoble, they are also significantly masculine features in Paris to be used by teens and early twenties who are still immersed in the local street culture. Both Jamin (2007) and Trimaille (2007) are of the view that these features are unlikely to spread to the community at large, as certain lexical phenomena arguably have. As Trimaille also points out, the linguistic behavior of girls has been less well analyzed, partly because they are more difficult to gain access to, but given the acknowledged role of young women in the diffusion of changes, understanding their practices is crucial.

Contrary to what has been observed in certain parts of London, it would be, at the very least highly premature to speak of new dialect formation – or as Trimaille and Billiez (2007) put it: "*peut-on parler de 'parler'*?" 'can one speak of a 'dialect" – of the

type reported by Fox (2007) in the East-End borough of Tower Hamlets, where she observed a number of socially specific vocalic variants. Expert observers of the French urban landscape generally refuse to apply the term 'ghetto' in the sense of high concentration of people of a single minority ethnic origin, since the mono-ethnic demography of certain areas of Tower Hamlets where over 80% of the school population is of Bangladeshi origin, is not replicated in France.

In contrast both to the ghettoised speech of London's East End and to the poorer urban areas of France where so-called multi-ethnic vernaculars are negatively associated with Maghrebians to a degree that has little empirical justification, black talk has highly positive connotations (in particular through certain types of popular music) in English cities as an expression of youth culture resulting in manifestations of what Rampton (1995) called 'crossing'. In one sense, crossing is the usually temporary borrowing of elements of an ethnic language such as Sinhalese or Creole other than one's own. In another sense, it could be construed as the use in English of features traditionally associated with a particular ethnic group by another, for example and in particular white teenagers using black features in their we-code, e.g. a (near-)monophthongal variant of the Standard English diphthong /aɪ/ *life* realized as [lɐf].

Sociolinguistic work in Germany reveals a picture that has much in common with the UK. Geographic concentrations of people of Turkish ethnicity, assuming ghetto-like proportions, for example in certain parts of Mannheim, expressions such as *Ghettodeutsch* (ghetto German), *komisches Deutsch* (*funny German*) and *Stadtteildeutsch* (local German) are used in common parlance to refer to Turkish-influenced German. Linguists refer more learnedly to 'ethnolects', which may be de-ethnicized in two ways. Auer (2003) refers to secondary de-ethnicization when such vernaculars are used by multi-ethnic communication and tertiary de-ethnicization, when they are used by indigenous young people in ethnically unmixed areas outside major urban areas.

Researchers from the Institut für Deutsche Sprache (IDS) in Mannheim, have also investigated professionally successful Turks, who have of course mastered Standard German in both its written and spoken forms. Such people usually separate more clearly the various languages in their repertoire and more than their less favored contemporaries, as well as having native-like command of Standard Turkish (Aslan 2005). At the other end of the social spectrum, a study by Keim and Knöbl (2007) shows that a young man of Turkish origin, who flunked school, could nonetheless display verbal virtuosity in four varieties: local Standard German, regional German, Turkish-influenced German and vernacular Turkish, but not significantly Standard Turkish.

Jaspers' (2007) study of Moroccan students in an Antwerp secondary school also contains pointers which might helpfully be applied in France. Much of the article is devoted to arguments against the overhasty use of the label 'ethnolect' to migrant-language influenced vernacular of the mainstream language, in this case Moroccan Arabic influenced Dutch. Insofar as it is justifiable to speak of an ethnolect, the Moroccan students investigated do not consider it to be part of their we-code, but attribute it to illegal migrants and use it on occasion to characterize them. In their perception,

their use of Dutch is good, talking 'normal' and untainted by dialectal features used by their European classmates. The consideration of Moroccans rather than Maghrebians should perhaps make researchers in France pay greater attention to the constituent groups of informants of North African descent.

7. Directions for future research

The examples just mentioned, partial and even piecemeal though they are, are sufficient to point yawning gaps in the work in/on France. Firstly, (socio-)linguistic studies of professionally successful Maghrebians and members of other ethnic minorities are much needed both to combat the unhelpful and empirically unjustified negative image under which they labor, as well as to build up a scientifically more accurate and balanced picture of what has been or is happening as regards integration or perhaps peaceful (relative?) non-integration through a parallel-lives strategy. Such studies might well disturb the ideological convenience of both part of the mainstream community which trades on the fear factor and also part of the Maghrebian community which plays on victimhood. Moreover, disaggregating the component parts of this so-called Maghrebian community – a standard practice outside the francophone area – would surely yield some helpful insights.

A decade ago, Lepoutre (1997) recommended that his ethnographic work should be complemented by Labovian style linguistic analysis. The work of Jamin, Trimaille and Pooley has addressed the issue to a degree but in some cases have not compared the behavior of informants from different ethnicities nor crossed this comparison with data from informants from a wider social spectrum. There is a greater need too for the analysis of interactional behavior such as that of Billiez et al. (2003), but this too would benefit greatly from close juxtaposition to more mainstream vernacular norms, particularly those of informants of comparable age (cf. Hambye 2007). It is to be hoped that such studies might be able to show whether and/or to what degree so-called ethnolectal vernacular features are used by speakers of all social backgrounds when talking 'normal' and perhaps elucidate the mechanisms of diffusion. As Trimaille and Billez (2007) argue, the majority of studies show a certain gender bias, which needs to be addressed, despite undoubted difficulties of access to potential female informants of ethnic-minority background. Given also the degree of diversity uncovered in the use of sociolinguistically significant features in various cities, gathering more quality data in locations not yet investigated is an undoubted priority.

Behavior-based studies of the use of lexis are also desirable and are more likely to be useful in the context of an approach that takes into account interaction and stylistic differences. It is to be hoped that such projects would throw light on the mechanisms of diffusion of allegedly ethnolectal items and provide pointers as to whether these processes of diffusion differ for lexical and phonological features.

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CHAPTER 11

Language planning and policy in Québec*

Leigh Oakes
Queen Mary, University of London

En tant qu'îlot francophone dans une Amérique du Nord essentiellement anglophone, le Québec est souvent considéré comme un modèle dans les questions de politique et d'aménagement linguistiques. Suivant une discussion des processus théoriques concernés, ce chapitre examine les mesures d'aménagement linguistique particulières pour lesquelles le Québec est devenu réputé et qui cherchent à y améliorer le statut du français (aménagement du statut), à assurer son adoption comme langue publique commune par tous les Québécois (aménagement de l'acquisition), ainsi qu'à enrichir la langue et à s'occuper de sa qualité (aménagement du corpus). Dans tous ces domaines, la politique et l'aménagement linguistiques du Québec sont aujourd'hui façonnés par les nouveaux défis posés par l'immigration et la mondialisation, ce qui témoigne d'une créativité et d'une capacité à s'adapter au changement qui font souvent défaut à la politique et à l'aménagement linguistiques d'autres contextes francophones.

As a French-speaking island in a predominantly English-speaking North America, Québec is often considered as a model in questions of language policy and planning. Following a discussion of the theoretical processes involved, this chapter examines the particular language-planning measures for which Québec has become well-known and which aim to improve the status of French there (status planning), assure its adoption as a common public language by all Quebecers (acquisition planning), as well as enrich the language and attend to its quality (corpus planning). In all these areas, Québec's language policy and planning is today shaped by the new challenges presented by immigration and globalisation, demonstrating a creativity and an ability to adapt to change that are often lacking in the language policy and planning of other French-speaking contexts.

* This chapter adopts UK spelling conventions in line with the author's own standard of English. The author would like to thank Roy Lyster and the two anonymous reviewers for their comments on an earlier version of this paper.

1. Introduction

In questions of language policy and language planning, the countries of the French-speaking world are usually considered as prototypical examples. As the largest group of native French speakers outside Europe, Québec is no exception, even if it has its own reasons for engaging in these matters. Since coming under British control in 1763, French-speaking Quebecers have fought to defend their language from the advance of English. In the beginning, the battle was fought at a pan-Canadian level. When politics failed, the Church stepped in as the main defender of the language. Various patriotic organisations also sought to promote French as spoken in Canada through research which aimed to legitimise its form. In the twentieth century, the pan-Canadian approach to language gave way to a territorial one that concentrated on defending the language in the province of Québec, home to the majority of native French speakers in Canada. The Québec authorities began to develop their own language policy distinct from that at the federal level. Timid at first, Québec language policy came of age in the 1960s with the rise of a new awareness of national identity that resulted in the Quiet Revolution, the name given to the period of rapid socio-economic change in the province. Unlike the traditional French Canadian nationalism of the past, which closely associated religion and culture, the Québec-based neo-nationalism which emerged in the 1960s placed greater emphasis on the role of the state. In the new modern society that emerged, language was to become the most prominent symbol of national identity, hence the Québec state's desire to intervene in such matters. As this chapter aims to show, Québec has developed into a "theatre of intensive activity in the area of language planning" (Laporte 1984: 53), or *aménagement linguistique* as it is called there, to the extent that it now serves as a model for other contexts around the globe. Before examining the particular language-planning measures for which Québec has become well-known, however, it is first necessary to understand the processes involved in language planning from a more theoretical perspective.

2. What is language planning and policy?

Although the practice has been going on throughout human history, the term 'language planning' was first introduced in 1959 by the Norwegian-American linguist Einar Haugen to describe efforts to promote, modernise and implement a national language in Norway. In the beginning, the concern was with purely linguistic objectives, as manifest by the definition Haugen (1959 [1968: 673]) gave of this pursuit: "By language planning I understand the activity of preparing a normative orthography, grammar, and dictionary for the guidance of writers and speakers of a non-homogenous speech community". It was not long, however, before the term was expanded to include not just activities which seek to intervene with regard to the linguistic aspects of a

language, but also its social characteristics. As such, in 1969, the German linguist Heinz Kloss introduced a distinction between 'corpus planning' and 'status planning'. Whereas the former aims to "modify the nature of the language itself", the latter is concerned with whether the social position or status of a particular language in question "is satisfactory as is or whether it should be lowered or raised" (Kloss 1969: 81). While this distinction continues to dominate today, "[c]are must be taken not to oversimplify the dichotomy" (Daoust 1997: 448). Language planning measures are rarely exclusively corpus- or status-focused. As will be seen below, the terminological work carried out on the corpus of French as used in Québec, for example, has had as an ultimate goal the improvement of the status of the language in domains dominated by English. Despite the inevitable overlap, the status/corpus planning opposition is an important analytical tool for those studying language planning, not least because it helps to distinguish the activities of the different actors involved:

> The big difference between corpus and status planning is that the former cannot be done without the help of some specialists, chiefly linguists and writers, who are called upon to form an academy, commission or some other official or semiofficial body within the framework of which they are expected to do some long-range teamwork. No such separate set-up as a rule can take place, for status planning. This is done by statesmen or bureaucrats as part of their routine work, mostly with some legal but very little sociolinguistic background. (Kloss 1969: 81)

2.1 Haugen's model of language planning

Kloss's dichotomy has been incorporated into most models of language planning, such as the one ultimately developed by Haugen (1983). This model also makes use of a distinction introduced by Neustupný (1970 [1974]) between 'policy' and 'cultivation' approaches to language planning. Whereas the former is concerned with the macroscopic level, touching on "problems like selection of the national language, standardization, literacy, orthographies, problems of stratification of language (repertoire of code varieties), etc.", what Haugen refers to as 'form', the latter acts at the microscopic level, focusing on "questions of correctness, efficiency, linguistic levels fulfilling specialized functions, problems of style, constraints on communicative capacity, etc.", what Haugen calls 'function' (Neustupný (1970 [1974: 39]). In Haugen's model, the intersection of these two dimensions of language planning – status/corpus and form/function – gives rise to four processes or overall activities. Although numbered by Haugen, they do not necessarily occur in a set order; indeed, they can and often do occur simultaneously. Moreover, as language planning is an on-going activity, they can also re-occur at a later point in time.

The first process, 'selection', refers to the choice of language or language variety to be used by a given society, which Haugen sees as involving two decision procedures. The first, 'problem identification', requires the selection of a language which is to benefit

from special (e.g., official) status in the given society. As an example of status planning, this decision does not rely on linguistic factors, but is instead determined by social considerations, especially questions of power, so that the language chosen is often the language of the dominant group, the political elite, the capital city, and so on. At times, the decision may be deliberate; other times, it may be less conscious in so far as the language or variety appears as a natural choice. What is true, though, is that the choice, however calculated, will necessarily favour some over others:

> In many ways, choices about official languages stand in a category of their own. States must choose one or two languages as the languages of the state, for popular education and for the judicial system. Some groups will necessarily be disadvantaged by the choice, and in this sense choice of official language is a zero-sum game; some will win and some must lose. (Walker 1999: 154)

In France, for example, the choice of French as the country's sole official language is far from being ethnoculturally neutral. Speakers of minority languages have long fought for official recognition of their languages, but this has been consistently rejected, as evidenced by France's refusal to ratify the Council of Europe's Charter for Regional or Minority Languages, which would allow for a limited use of these languages in some official contexts (see Oakes 2001: 121–124).

As the other decision procedure involved in selection as defined by Haugen, the "*[a]llocation of norms* is no less complex than the initial identification of the language to be selected" (Kaplan & Baldauf 1997: 34). Once a language has been selected, it is necessary to choose a variety of that language to be promoted as the official standard. As will be seen below in the section on corpus planning, this is a question which has dogged Quebecers since the 19th century.

The second process in Haugen's model of language planning is 'codification', which belongs to the realms of corpus planning. Whereas Ferguson (1968) previously only highlighted in this area the activities of 'graphisation' (the development of a writing system) and 'standardisation' (the fixing of particular linguistic forms as the norm), Haugen divides the latter into two processes: 'grammatication' (the formulation of grammatical rules governing the standard) and 'lexication' ("the selection of an appropriate lexicon" including "the assignment of styles and spheres of usage for the words of the language" (Haugen 1983: 271)). The latter two processes are usually undertaken by means of grammars and dictionaries respectively, although in the first instance, grammatical rules and lexical choices are usually extracted from the writing of reputable authors. Such was the case in seventeenth-century France, where Corneille, Molière, Racine and other writers were held up as models. Indeed, Claude Favre de Vaugelas, one of the original members of the *Académie française*, defined *le bon usage* as "the way of speaking of the soundest part of the Court, in accordance with the way of writing of the soundest part of the authors of the day" (Vaugelas 1647 [1970: II.3]). The plethora of prescriptive dictionaries and grammars which appeared over the

following centuries have contributed to making French "arguably the most highly codified of the European languages" (Lodge 1993: 153).

A third process involved in language planning is 'implementation'. Haugen designates as 'correction procedures' those efforts that aim to improve the status of a language or variety by means of spreading it and having it accepted, typically with the aid of the education system, language legislation, and so on. As might be expected, implementation is rarely complete, but rather an on-going process, as witnessed by the anxieties that arose during the French Revolution that many 'Frenchmen' did not speak the national language. As Abbé Grégoire explained first in 1793, and then again in 1794 in his famous *Rapport sur la nécessité et les moyens d'anéantir le patois et d'universaliser l'usage de la langue française* ('report on the necessity and the means to annihilate patois and make the use of the French language universal'):

> We can confirm without exaggeration that six million French people, above all in the countryside, are in complete ignorance of the national language; that a similar number is more or less incapable of holding a continuous conversation; that as a final result, the number of people who speak French does not exceed three million, and no doubt the number of those who write it correctly is even smaller. (Grégoire, cited in de Certeau, Julia & Revel 1975: 302)

A second part of the implementation process involves the 'evaluation' of language-planning measures. This is often claimed to be a neglected part of the language planning-process (see e.g., Rubin 1983), not least because "[e]valuation, when it is carried out, is often done as part of government reports which are not easily accessible to the wider community" (Kaplan & Baldauf 1997: 38). This cannot be said of Québec, where Canadian censuses offer a rich source of data for assessing the effects of the Charter of the French language introduced in 1977 (see e.g., Conrick & Regan 2007: 95–103). Moreover, many of the studies that evaluate Québec language-planning measures are freely available on the websites of the *Conseil supérieur de la langue française* (http://www.cslf.gouv.qc.ca) and the *Office québécois de la langue française* (http://www.oqlf.gouv.qc.ca).

The final component of language planning according to Haugen is 'elaboration'. Like codification, elaboration has as its focus the corpus of a language, but refers instead to "the continued implementation of a norm to meet the functions of a modern world" (Haugen 1983: 273). Whereas Ferguson (1968) spoke simply of modernisation, Haugen prefers again to separate out two dimensions. As one of the most discussed language-planning activities, 'terminological modernisation' allows the language to adapt to new domains, by means of new lexical items (e.g., borrowings, innovations, revived archaic forms). 'Stylistic development' is not about the modernisation of lexical items so much as the development of suitable registers for certain domains. Both of these language-planning activities were much pursued in sixteenth-century France, when French underwent great enrichment in terms of lexis, syntax, style, and so on (Huchon 2002: 141–171). As the best known example of the ideas of the Pléiade group

of poets, Du Bellay's *Deffence et illustration de la langue françoyse* (1549) advocated the use of archaisms, neologisms and borrowings from dialects, Greek, Latin and other languages, arguing that such cultivation would allow French to compete with Latin (Hagège 1996: 58).

2.2 Towards a more detailed model of language planning

Another model is provided by Cooper, whose 'accounting scheme' considers language planning in terms of eight components: what 'actors' attempt to influence what 'behaviours' of which 'people' for what 'ends' under what 'conditions' by what 'means' through what 'decision-making process' and with what 'effect' (Cooper 1989: 98)? While many definitions of language planning, like the majority of studies in the field, focus on the nation or state as principle 'actors', language planning is also undertaken by other agents at the sub-national or sub-state levels (e.g. individuals, families, schools, and non-governmental organisations and associations) and the supra-national or sub-state levels (e.g. the European Union, the United Nations, and multinational organisations). Similarly, the 'people' who are targeted by language planning are not confined to the national or state level (e.g., planning designed for a school, a particular ethnic group, all those belonging to a certain religion world-wide, etc.).

As seen above, the 'behaviours' which language planning seeks to influence can focus on the linguistic characteristics of a language (corpus planning) or on its social qualities (status planning). However, Cooper (1989: 33) argues that a third type of language planning can be identified:

> When planning is directed towards increasing a language's uses, it falls within the rubric of status planning. But when it is directed toward increasing the number of users – speakers, writers, listeners, or readers – then a separate analytic category for the focus of language planning seems to me to be justified.

'Acquisition planning', as Cooper terms it, thus reinforces the link between language planning and applied linguistics, by focusing more explicitly on measures that concern issues of the type discussed elsewhere in this volume (e.g., first and second language acquisition, maintenance, attrition). As with status and corpus planning, acquisition planning does not take place in isolation: "planners of any one should consider the others" (Cooper 1989: 33).

The 'ends' or goals of language planning have attracted the attention of many scholars in the field, such as Ferguson (1968) and Haugen (1983), as discussed above. Nahir (1984) proposes a typology of 11 language-planning goals, four of which can be thought of as belonging to status planning, seven to corpus planning. 'Language revival' is usually considered to encompass several sub-categories, including language revival proper, also called 'language restoration' (i.e., where a language has died off), 'language revitalisation' (i.e., where a language is given new vigour), and 'language

reversal' (i.e., the reversal of language shift, or a turn-around in the use of a language) (see Hornberger & King 1996: 428; Kaplan & Baldauf 1997: 62–64). The other status planning goals are 'language maintenance' (i.e., the promotion of a language already in use), 'language spread' (i.e., increased domains of use) and 'interlingual communication' (i.e., the facilitation of communication between languages, for example, by means of an auxiliary language, translation or interpreting). Amongst the corpus planning goals, Nahir identifies 'standardisation' (considered here as encompassing both a status dimension, what Haugen refers to as selection, and a corpus element, the latter also including spoken language, which Haugen neglects in his consideration of codification) and 'auxiliary code standardisation' (i.e., the fixing of auxiliary aspects of language, such as place names). Also included is 'lexical modernisation' (as equally discussed by Haugen), 'purification' (to purge a language of external influences or internal deviations), 'reform' (e.g., spelling conventions), 'stylistic simplification' (to make a language more transparent) and 'terminological unification' (to standardise functions and meanings of terms, particularly those of a scientific nature).

Cooper groups these latter four goals into a larger one which he calls 'renovation', so as to clearly distinguish these activities from modernisation: "Whereas modernization permits language codes to serve new communicative functions, renovation permits language codes to serve new functions in old ways" (Cooper 1989: 154). Taking into account his main contribution to the field of language planning, he also identifies three acquisition planning goals: 'acquisition of the language as a second or foreign language' (i.e., by speakers of other languages either within or outside the context in question), 'reacquisition' (i.e., for those who have ceased to speak it) and 'language maintenance' (this time as an activity aimed at the speakers, rather than at the language itself) (Cooper 1989: 159).

These goals of language planning can be grouped according to how linguistic they are in nature. Rabin (1971: 277–279) proposes three categories of language-planning aims, which are given the following meanings by Rubin (1977: 286–287): 'linguistic aims' are those which specifically address problems of communication; 'semi-linguistic aims' are those "instances where changes in the language serve not only linguistic aims but also social or political aims"; while 'extralinguistic aims' use language solely as a means to attend to issues which are purely sociopolitical in nature. Moreover, it is often argued that all language-planning goals, however linguistic *prima facie*, are invariably manifestations of broader extralinguistic aims:

> Thus those definitions [of language planning] which are framed in terms of the solution of *language* or communication problems obscure a fundamental point about language planning, namely that it is typically, perhaps always, directed ultimately towards nonlinguistic ends. Definitions of language planning as the solution of language problems are not wrong, but they are misleading. They deflect attention from the underlying motivation for language planning. Inasmuch as language planning is directed ultimately toward the attainment of nonlinguistic ends, it is preferable, in my opinion, to define language planning not as efforts to

> solve language problems but rather as efforts to influence language behaviour. (Cooper 1989: 35).

Ager (2001: 7–8) makes a similar point when he distinguishes between different types of goals or motivations in language planning, some of which are better thought of as short-term 'targets', which help reach more medium-term 'objectives', which in turn reflect long-term 'ideals'.

At this point, it is appropriate to introduce the term 'language policy'. Although sometimes used synonymously with language planning, language policy is defined by some precisely as "the underlying political and sociolinguistic goals that are implied in the activities and measures of language planners" (Deumert 2001: 644). Others extend the definition to include "all the language practices, beliefs and management [i.e., planning] decisions of a community or polity" (Spolsky 2004: 9). Indeed, Ricento (2000: 209) argues that:

> Language policy research is concerned not only with official and unofficial acts of governmental and other institutional entities, but also with the historical and cultural events and processes that have influenced, and continue to influence, societal attitudes and practices with regard to language use, acquisition and status.

Returning to Cooper's 'accounting scheme', these historical and cultural events and processes represent the 'conditions' under which language planning takes place. Language planning is also implemented by different 'means' (e.g., authority, force, promotion, persuasion), which may or may not involve the use of language legislation. Finally, Cooper argues that any consideration of language planning needs to take into account the 'decision-making process' adopted, since the way in which measures are decided upon ultimately influences the 'effect' of the language planning. One consideration is the degree of involvement of the people who are targeted, as it has been shown that top-down imposed language planning is seldom effective if it does not enjoy support amongst those for whom it is intended (Spolsky 2004: 222–223; Wright 2004: 169–170). As Kaplan and Baldauf (1997: 14) note, "language policy formulation is everybody's business, and without the help of the communities involved, as well as of the larger community, a stable language ecology will not develop and no amount of planning is likely to bring sustained language change".

In order to bring together the various strands of language planning research conducted to date, Hornberger (1994, 2006) proposes an integrative framework. To the status planning goals, she adds 'officialisation' and 'nationalisation' (i.e., the granting respectively of official and national status to a language; see Cooper 1989: 100–104; Heath 1985; Stewart 1968) as well as 'proscription' (i.e., the prohibition of a language; see Kloss 1968). To Cooper's acquisition planning goals, she adds 'language shift', to mirror the language-focused status planning activity of language spread, as well as a number of language functions (see Stewart 1968; Cooper 1989: 107–118) "identified in terms of the domains in which users are targeted to receive opportunity and/or incentive

Table 1. An integrative framework for language planning and policy (Hornberger 2006: 29), the shaded parts indicating elements of Haugen's (1983) model

Types	*Policy planning approach* (on form)	*Cultivation planning approach* (on function)
Status planning (about uses of language)	**Officialisation** **Nationalisation** **Standardisation of status** **Proscription**	**Revival** **Maintenance** **Spread** **Interlingual communication – international, intranational**
Acquisition planning (about users of language)	**Group** **Education/School** **Literary** **Religious** **Mass media** **Work**	**Reacquisition** **Maintenance** **Shift** **Foreign language/second language/literacy**
	Selection Language's formal role in society *Extra-linguistic aims*	**Implementation** Language's functional role in society *Extra-linguistic aims*
Corpus planning (about language)	**Standardisation of corpus** **Standardisation of auxiliary code** **Graphisation**	**Modernisation** (new functions) **Lexical** **Stylistic** **Renovation** (new forms, old functions) **Purification** **Reform** **Stylistic simplification** **Terminology unification**
	Codification Language's form *Linguistic aims*	**Elaboration** Language's functions *Semi-linguistic aims*

to learn the given language" (Hornberger 2006: 32): group, education/school, literary, religious, mass media and work. The result is a matrix which takes into consideration all of the aspects of language planning discussed so far in this chapter (see Table 1).

The discussion of language planning and policy in Québec which follows will focus on some of the language-planning goals or activities included in table 1, and is structured according to the three main types of language planning traditionally identified and listed on the vertical axis: status planning, acquisition planning and corpus planning.

3. Status planning in Québec

There was no need for status planning in the early days of the colonisation of Canada, one of five colonies which together with Acadia, Hudson Bay, Louisiana and Newfoundland made up the territory known as New France. The settlers had emigrated from certain parts of France: Île-de-France, the northwest and the west in particular. Because of the various idioms spoken, some scholars claim that the rapid adoption of *françoys* as a *lingua franca* was a result of a *choc des patois* (Barbaud 1984). In the light of new data regarding the social and geographical origins of the first settlers, it is now generally agreed that their knowledge of French was fairly good even before their arrival (Asselin & McLaughlin 1994; Mougeon 2000; Poirier 1994). As such, the choice of which variety of French to adopt was a natural one which required no deliberate planning. Even after the loss of Acadia, the Hudson Bay and Newfoundland in 1713, the status of French in Canada was assured, not least because of the prestige the language enjoyed on the world stage. Indeed, it is somewhat of an irony that the Treaty of Paris (1763), which ultimately transferred possession of Canada to Britain, was drafted in French, the latter being the diplomatic language of the time (Hagège 1996: 95). It was only a matter of time, however, before the status of French in Canada began to decline.

Although the *Royal Proclamation* of 1763, which demarcated the borders of the colony renamed the Province of Québec, made no explicit mention of language, it did introduce English law, which was naturally drafted in English, in criminal and civil matters. While French speakers, or *Canadiens* as they were called, could still practise the Catholic religion in their native tongue, those wishing to hold public office were soon required to swear the *serment du test* renouncing the authority of the Pope. The new policies proved difficult to implement, however, and a solution was sought in the *Québec Act* of 1774, which also intended to secure the allegiance of French speakers at a time of unrest in England's Thirteen Colonies to the south. The Act thus reinstated French civil law in the courts (s. 8), although not in criminal matters, and granted religious freedom (ss. 5 and 7). Again, while no explicit mention was made of language, these measures were to restore some of the status of French in the province.

Following the American Revolution (1775–83), many loyalists sought refuge in Québec. Their refusal to be governed by French civil law and the resulting tensions led to the *Constitutional Act, 1791*, which divided the territory into the Province of Upper Canada in the west and the Province of Lower Canada in the east. The Act allowed for the maintenance of French civil law in Lower Canada; it also introduced parliamentarianism to both provinces, granting the right to swear oaths in either French or English for voters and members of the new Legislative Councils and Assemblies (ss. 24 and 29). Despite initial optimism, it soon came to light that French speakers were being marginalised in the new institutions of Lower Canada, even though they were in a majority: 160,000 compared to 20,000 English speakers by the end of the century (Warren 2003: 63). Furthermore, the choice of which language to use in the Lower Canadian Parliament was the object of intense debate in the early days. After it was

eventually decided that both languages should be used, London intervened to declare that laws would only be passed in English, even if French translations could be used (Vaugeois 2000: 65–67).

In the following century, the ideological differences that separated French and English speakers led the latter to attempt to anglicise the province, which only served to fuel the growing nationalism amongst the French Canadians, as they had now become known. Following the Patriot revolt of 1837–38, and Lord Durham's infamous report (1839) in which he advocated the assimilation of French speakers, it was decided to unite the two colonies by virtue of the *Act of Union* passed in 1840.[1] When it came into effect in 1841, the Act declared English the sole language of legislation and public legislature documents (s. 41), thus for the first time explicitly proscribing French in these contexts. In the face of vehement protests, section 41 was repealed in 1848. The resulting return to the *de facto* bilingualism of the past lasted until 1867, when the *British North America Act* (later known as the *Constitution Act, 1867*) created the Dominion of Canada, grouping Québec (formerly Lower Canada), Ontario (formerly Upper Canada), New Brunswick and Nova Scotia. Section 133 of the Act states that English or French may be used in the federal parliament, the legislature of Québec, and the federal and Québec courts. Yet despite being declared a *de jure* official language for the first time, French in effect remained marginalised in the confederation, a situation which was only to increase following the accessions of Manitoba (1870), British Columbia (1871), Prince Edward Island (1873), Alberta (1905), Saskatchewan (1905) and Newfoundland (1949). While several of these new provinces brought non-negligible French-speaking minorities into the confederation, some nonetheless adopted anti-French legislation (e.g., New Brunswick in 1871, Manitoba in 1890, and Ontario in 1912).

In Québec, the provincial government passed its first language law in 1910. The *Act to amend the Civil Code, respecting contracts made with public utility companies* (a.k.a. the Lavergne Law) imposed French-English bilingualism on such sectors as transportation, electricity and communications, forcing companies to use both languages on passenger tickets, baggage-checks, way-bills, printed telegraph forms, contract forms as well as in notices posted in stations, carriages, offices, factories, workshops, and so on. Not until 1937 was a second law introduced, the *Act respecting interpretation of the statutes of the province*, which asserted the primacy of the French

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1. Predominantly of French descent, but also including others of English and Irish extraction, the Patriots favoured the establishment of an independent, bilingual and secular Canadian nation, constructed around political principles and inspired by the French and American republics. In the autumn of 1837, the revolt degenerated into armed conflict, which was quickly quashed by the intervening British army. Lord Durham was subsequently sent from London to investigate. In his report from 1839, he suggested a series of measures (e.g. the immediate need to populate Lower Canada with subjects loyal to Her Majesty, the Act of Union of 1840 which united Upper and Lower Canada), all designed to put French Canadians in a position of subordination in the hope that they would be assimilated.

version of Québec's statutes and regulations. However, in the face of anglophone protests, Premier Maurice Duplessis decided to repeal the law a year later, demonstrating the extent to which even the provincial government continued to be at the mercy of anglophone interests. Indeed, these early interventions by the Québec state in matters of language were extremely timid. Instead, it was the Catholic Church, which since the failure of the Patriot movement, had taken responsibility for the maintenance of French, not for the sake of the language itself, but rather to ensure its own control of civil society by shielding French Canadians from the "[g]reed, unrestrained individualism, the narrow calculation of shopkeepers and the harsh desires of cupidity that were all said to be the essence of the English world" (Warren 2003: 68).

3.1 The 'coming of age' of status planning

The Québec state was to take a much more assertive role with regard to language policy and planning from the 1960s, as part of the sweeping transformations brought about by the Quiet Revolution.

> The modernization of Quebec society which took place in the 1960s and 70s was both rapid and radical. The education system, healthcare and other social institutions previously controlled by the clergy or by the English-speaking élite were restructured. The traditional religious or social values of these groups were displaced by an ideology of egalitarism and a "Québécois" linguistic and cultural nationalism promoted by the state bureaucracy. Provincial government intervention became ubiquitous in all domains of public life. (d'Anglejan 1984: 30)

And so it was with language too. In the *Livre blanc sur la politique culturelle* (Ministère des Affaires culturelles 1965), the Ministry of Cultural Affairs spoke of the need to declare French the 'priority language' of Québec, even if both English and French were recognised as official languages (cited in Bouthillier & Meynaud 1972: 691). Similarly, in its 1972 report, the *Commission d'enquête sur la situation de la langue française et sur les droits linguistiques au* Québec, otherwise known as the Gendron Commission, recommended "that the Government of Québec – while keeping section 133 of the British North America Act – declare in an outline law French as the official language of Québec, as well as French and English as national languages of Québec" (Gendron Commission 1972a: 155).

The *Union nationale* government of Jean-Jacques Bertrand did not wait for the recommendations of the Commission, however, before drafting Bill 63 (*Act to promote the French language in Québec*, S.Q. 1969, c. 9). While aimed predominantly at alleviating tensions with regard to language of instruction (see section on acquisition planning), the Act nonetheless contained some status planning measures, by empowering the *Office de la langue française*, set up in 1961, with a new mandate which included the duty to "advise the government on any legislative or administrative measures which might be passed to see to it that French is the working language in public and private

undertakings in Québec" (s. 4). While opening the door for future legislation, the Act thus nonetheless stopped short of granting French sole official status, a position which was the object of much criticism especially with regard to the workplace (see d'Anglejan 1984: 37).

Unlike the previous government, the new Liberal regime of Robert Bourassa waited for the publication of the Gendron report before passing Bill 22 in 1974 (*Official Language Act*, S.Q. 1974, c. 6). Demonstrating the 'coming of age' of Québec language planning, the latter was an imposing piece of legislation with its 123 sections (compared to a mere 5 sections for Bill 63). It also marked a shift in Québec language planning from the principle of personality to the principle of territoriality. Whereas the former sees language use in a certain context determined by an individual's language preference, the latter "means that the rules of language to be applied in a given situation will depend solely on the territory in question" (McRae 1975: 33).

While the *Official Languages Act* (1970, S.R.C., c. 0–2) passed by the federal parliament in 1969 represented an example of the personality approach, Québec's own *Official Language Act* declared that "French is the official language of the province of Québec" (s. 1); it also asserted the primacy of French in several domains: public administration (ss. 6–17), public utilities and professions (ss. 18–23), the workplace (ss. 24–29), business (ss. 30–39) and education (ss. 40–44; see also the next section on acquisition planning). In addition, the Act replaced the *Office de la langue française* with the *Régie de la langue française*, one of the tasks of which was to issue 'francisation certificates' for companies wishing to have dealings with the provincial government.

In awarding certificates, the *Régie* would consider "(a) the knowledge that the management and the personel [*sic.*] must have of the official language; (b) the francophone presence in management; (c) the language in which the manuals, catalogues, written instructions and other documents distributed to the personnel must be drawn up; (d) the provisions that the business firms must make for communication in French by the members of their personnel in their work, among themselves and with their superior officers; (e) the terminology employed" (s. 29).

However, as Levine (1997: 165) notes, the ambiguity of the provisions, combined with a lack of information regarding implementation, meant that francisation certificates were in reality awarded in many cases to completely anglophone businesses. Moreover, the impact of the Act in the field of business was limited in so far as it relied on optional rather than compulsory measures. In the end, the *Official Language Act* satisfied no-one: while dealing a major blow to the anglophone vision of an officially bilingual Montréal, the measures proposed fell nonetheless short of ensuring the preeminence of French in Québec.

On its arrival in power in 1976, the *Parti Québécois* quickly announced its intention to implement new, more ambitious language legislation. In a White Paper entitled

La politique québécoise de la langue française, the Minister for Cultural Development, Camille Laurin, explained:

> The Québec that we want to build will be essentially French. The fact that the majority of its population is French will finally be visible: in the work place, in communications and in the landscape. [...] There will no longer be any question of a bilingual Québec. (*Gouvernement du Québec* 1977: 36–37)

As an indication of how important the *Parti Québécois* considered the language question, Laurin's ideas were granted the honour of constituting the government's very first bill, Bill 1, which was given the name Charter of the French language. The latter made many references to the fact that French was the language of the 'Québec people' and implied that non-French speakers were not true Quebecers (Levine 1997: 194). Faced with potential Liberal opposition, Bill 1 was withdrawn and subsequently resubmitted in a more moderate form as Bill 101, written in a way so as to include non-francophone Quebecers. Adopted on 26 August 1977, the Charter of the French language once again declared that "French is the official language of Québec" (*Charter of the French language*, R.S.Q. c. C-11, s. 1). After listing a series of fundamental French-language rights, it confirmed the official status of French in six domains.

According to the Charter, which remains the centrepiece of Québec language planning today, French is the language of the legislature and the courts in Québec. Following the Blaikie decision of the Supreme Court of Canada (*A.G. (Québec) v Blaikie et al* [1979] 2 S.C.R. 1016), which deemed chapter 3 of the Charter incompatible with section 133 of the *Constitution Act, 1867*, Québec was forced to re-enact the Charter and all other acts passed since 1977.

Following the replacement of chapter 3 by virtue of Bill 86 (*Act to amend the Charter of the French language*, S.Q. 1993, c. 40), the Charter now states that "legislative bills shall be printed, published, passed and assented to in French and in English, and the statutes shall be printed and published in both languages" and that "either French or English may be used by any person in, or in any pleading in or process issuing from, any court of Québec" (s. 7). The Charter equally declares French the language of public administration, the only language that can be used by the government, its ministries and affiliated agencies (s. 17). Exceptions are made for recognised municipal, school, health and social services institutions, which "may use both the official language and another language in their names, their internal communications and their communications with each other" (s. 26).

In the remaining four domains of use, which are not under the immediate control of the state, the Charter stipulates that French should be the "normal and everyday language" (preamble). Semi-public agencies, such as public utility enterprises (e.g., transport authorities, electricity, water, gas providers, when they are not already government agencies) and the professional orders (e.g., doctors, lawyers, accountants), "must arrange to make their services available in the official language" (s. 30). In the workplace, the Charter stipulates that written communications to staff and offers of employment must

be in French (s. 41). Employers are also prohibited from requiring knowledge of a language other than French, unless this is necessary for the particular employment (s. 46).

In the field of commerce and business, French must be used in product labelling, including restaurant menus; where other languages are used as well, these must not be given greater prominence than French (s. 51). All computer software and operating systems must be available in French, unless no French-language version exists (s. 52.1). Similarly, toys and games that rely solely on languages other than French are prohibited, unless a French-language version is also available on the Québec market (s. 54).

Originally, public signage and commercial advertising were to be in French only, with exceptions for the cultural activities of ethnic groups and non-profit organisations. With the Ford decision of 1988 (*Ford v A.G. (Québec)* [1988] 2 S.C.R. 712), the Supreme Court of Canada ruled that the prohibition of any language other than French in public signage and commercial advertising was contrary to freedom of speech, as stipulated both in Québec'*s Charter of Human Rights and Freedoms* of 1975 (R.S.Q. c. C-12, s. 3) and the Canadian Charter of Rights and Freedoms (*Constitution Act, 1982*, s. 33). Québec decided to use the notwithstanding clause contained in the Canadian Charter to pass Bill 178 (*Act to amend the Charter of the French language*, S.Q. 1988, c. 54), according to which other languages were now permitted in public signage and advertising inside commercial buildings, provided that French was predominant. Outside, however, French monolingualism would prevail. The notwithstanding clause being valid for a maximum of five years, the Québec government was forced to find a more permanent solution. This came in 1993 in the form of Bill 86 (*Act to amend the Charter of the French language*, S.Q. 1993, c. 40), which amended the Charter of the French language so as to permit bilingual signage anywhere on the condition that French was "markedly predominant" (s. 58).

In addition to spelling out the status of French in the field of education, which will be discussed in the next section on acquisition planning, the Charter also includes provisions for implementing the law by establishing several language planning agencies, which underwent a restructure in 2002 by virtue of Bill 104 (*Act to amend the Charter of the French language*, S.Q. 2002, c. 28). The *Office québécois de la langue française*, which replaced the *Office de la langue française* reinstated in 1977, is responsible for "defining and conducting Québec policy on linguistic officialisation" and "the francisation of the public administration and enterprises" (s. 159), the latter being required to obtain a francisation certificate if they employ 50 people or more (ss. 139 and 140). Since the restructure, the *Office* has also taken on the mandate of the *Commission de protection de la langue française*, formerly the *Commission de surveillance de la langue française*, the task of which was to investigate breaches of the law, hence its being pejoratively referred to as the 'language police'.

The other body concerned with status planning is the *Conseil supérieur de la langue française*, formerly the *Conseil de la langue française*, the mandate of which is "to advise the Minister responsible for the administration of [the Charter] on any matter relating to the French language in Québec" (s. 187). Finally, the Charter establishes

penalties for non compliance: CAD$250–$700 for individuals and CAD$500–$l,400 for corporations for first offences; subsequent infringements within two years attract fines of CAD$500–$1,400 and CAD$1,000–$7,000 respectively (s. 205).

3.2 The impact of status planning

Regarding the evaluation of Québec's status planning, it is generally agreed that the Charter has had an important impact in at least three areas (Bouchard & Bourhis 2002: 12). In the workplace, the right of francophones to use their language at work is more secure today than before the introduction of the Charter of the French language. As seen in table 2, whereas only 52% of native French speakers in the private sector in Montréal reported working in their own language 90% or more of the time in 1971, this figure had risen to 65% by 1997. This was the case in all sectors of business, apart from finance, where following a steady rise, the relevant figure subsequently dropped from 63% in 1989 to 53% in 1997 (Lapierre Vincent 2005: 11). From 2001, the Canadian census also began to collect data on language of work. Although not directly comparable with the other statistics cited above, the latest census data from 2006 show that 90% of native French speakers in the metropolitan region of Montréal speak French "the most often" at work, a figure made up of those who only use French and those who use French "the most often" and English "regularly" (P. Béland 2008: 21). Nonetheless, francophones aside, much still needs to be done to promote the use of French amongst Québec's other language groups, as will be discussed in section 4.2 with regard to allophones.

One of the extralinguistic aims of the Charter seems also to have been achieved: while monolingual anglophone males in Montréal earned on average 20% more than their monolingual francophone counterparts in 1970, the gap had fallen to 4% by 1980 and 1% in 2000, the latter representing a non significant difference (*Office québécois de la langue française* 2008: 117). Another study reveals the improved status of the French language as evidenced by the growth in ownership of Québec's economy by francophones: up from 47% in 1961 to 67% in 2003 (Vaillancourt, Lemay & Vaillancourt 2007: 10).

Table 2. Percentage of the work force according to work time in French by mother tongue in the private sector in the metropolitan region of Montréal. Percentages in bold indicate significant differences between two years (Conseil de la langue française 1994: table 6.3). For reasons not mentioned, the 1997 data added by Lapierre Vincent (2005: 11) for those whose mother tongue is English or other is not comparable with that of previous years

	Mother tongue											
	French				English				Other			
Work time in French	1971	1979	1989	1997	1971	1979	1989	1997	1971	1979	1989	1997
90% or more	**52**	**62**	63	65	2	**4**	**8**	9	**17**	21	**24**	25
50% -89%	**36**	**30**	30	28	**12**	**24**	**37**	29	**25**	**35**	39	35
0% -49%	**12**	**8**	**6**	7	**86**	**73**	**55**	62	**58**	**44**	**37**	41

In addition, the number of companies with francisation certificates has understandably increased since the introduction of the Charter: whereas 37.4% of registered companies were certified on 31 March 1984 (*Office de la langue française* 1999), that is following the initial deadline of 31 December 2003 for having to obtain such certificates, 80.7% of them were certified on the same date in 2007 (*Office québécois de la langue française* 2008: 100).[2]

That the figure has since the 1990s levelled off at around 80% is not necessarily a matter of serious concern, since it would be impossible to obtain a figure of 100%, considering that "companies that are already certified disappear and are replaced by new ones which must follow the stages of certification" (Lapierre Vincent 2005: 53). Nonetheless, it has been noted that certification, even if a first step towards a greater use of French in the workplace, does not necessarily equate with the latter (P. Bouchard 2002: 96).

The status of French as a working language in Québec also risks being undermined by the increased status of English as a language of business throughout the industrialised world. It was this observation which prompted the *Commission des États généraux sur la situation et l'avenir de la langue française au Québec*, more commonly known as the Larose Commission and set up in 2000 to suggest measures to ensure the continued use, spread and quality of the French language in Québec, to propose a more sectorial approach to understanding and promoting the francisation of businesses (Larose Commission 2001: 104). As for the government, it also recognises the need to reinforce the francisation of the workplace, which can be hindered by factors including the use of software in other languages and the increased use of English in some Québec companies resulting from their openness to foreign markets, especially the US (*Secrétariat à la politique linguistique* 2005: 11).

With regard to the second area in which the Charter has had a significant impact – public signage – an equilibrium has now been reached which reflects the majority status of French in Québec while allowing the presence of other languages (Bourhis & Landry 2002). This has not stopped a minority of radical anglophones from challenging the relevant provisions of the Charter, nor a small number of uncompromising francophones from attacking signage which includes English as part of registered trademarks, which are exempt from the Charter (see Conrick & Regan 2007: 66–67). While it could be argued that signage in French does not necessarily equate with an increased use of French either, it nevertheless has great potential to contribute to the spread of the language. As Premier René Lévesque noted about the "*visage linguistique*" of Québec in 1982: "In its way, in fact, each bilingual sign says to immigrants: 'There are two languages here, English and French; choose which one you want.' To anglophones, it says: 'No need to learn French, everything is translated'" (cited in Plourde 1993: 61). Lévesque's

2. Of the non-certified companies, 8.7% were implementing a francisation programme with the view to obtaining a certificate, while 10.6% had not had their programmes approved or were in the process of being evaluated (*Office québécois de la langue française* 2008: 00).

words highlight the interconnection or overlap that was stressed at the beginning of this chapter between different types of language planning. Indeed, the third domain in which the Charter is regarded to have had an important – and perhaps the greatest – impact is education, which relates not so much to status planning as to acquisition planning.

4. Acquisition planning in Québec

Of the factors which prompted the Québec government to intervene more assertively in matters of language, two observations stressed the need for acquisition planning in particular (d'Anglejan 1984: 32–34). First, there was a decline in Québec's high fertility rate of the past, known as the 'revenge of the cradle' and encouraged by the Church as a means of fighting back against anglophone hegemony. The figure of 4.0 births per woman observed in 1959 had sunk to 2.1 by 1970 and 1.7 by 1977 well under the threshold of 2.1 required for the natural replacement of generations in most industrialised countries (Duchesne 2006: 72, 226). This meant that the future of French in the province could not be assured by the French-speaking population alone. The second, logically related observation was that there was an increasing tendency for children of immigrant descent to attend school in English, not least for economic reasons: "For the newly arrived, North America rather than Québec was their point of reference. Immigrants considered that knowledge of English was indispensable to get on in North America and consume mass culture circulated in English" (Levine 1997: 98). Whereas fewer than 70% of children of backgrounds other than French or British had attended school in English in Québec in 1955–56 and previous years, the figure had risen to 89.3% in 1967–68, a phenomenon noted in particular by the Gendron Commission (1972b: 492) in its report on the situation of French and linguistic rights in Québec.

4.1 French as a language of instruction

The Commission had been set up in the midst of the so-called Saint-Léonard crisis of 1967–68, which saw school commissioners of this Montréal neighbourhood adopting a resolution requiring immigrants to send their children to monolingual French-medium primary schools instead of the bilingual ones set up in 1963 (Levine 1997: 117–145).[3] This decision was based on the observation that, instead of promoting integration into French-speaking circles, the bilingual classes merely encouraged the majority of the children of immigrants (more than 85%) who finished their primary studies to go on to English-medium secondary schools in the area concerned (Levine 1997: 118; Robert 2000: 244). Faced with a wave of protests first from allophones then

3. At the end of the 1960s, the ethnolinguistic breakdown of Saint-Léonard was 60% francophone, 30% Italian and 10% from various other communities, including anglophones (Levine 1997: 117).

from anglophones, and after an initial failed attempt to overturn the decision of the school commissioners with Bill 85, Bill 63 was passed in 1969 (*Act to promote the French language in Québec*, S.Q. 1969, c. 9).[4] Despite its name, this Act upheld the free choice of parents with regard to language of instruction for their children (s. 2); it did, however, require English-medium schools to ensure a "working knowledge" of French amongst their pupils (s. 1), as well as instruct the Ministry of Immigration to take measures "so that the persons who settle in Québec may acquire the knowledge of the French language upon arrival or even before they leave their country of origin, and may have their children instructed in educational institutions where courses are given in the French language" (s. 3).

As seen above, the Act to promote the French language in Québec was repealed and replaced in 1974 by the Official Language Act (Bill 22). On the question of language of instruction, the Act took a somewhat harsher line, not least because the number of allophone children in the English-language school system was still as high as 88.6% in 1973–74 (Levine 1997: 166). Instruction in English was maintained, but the number of English-language institutions would be controlled by the Minister of Education with only the native English-speaking population in mind (s. 40). Moreover, from now on, those students wishing to attend English-medium schools would have to pass tests to demonstrate a "sufficient knowledge" of this language, failing which they would receive their instruction in French (s. 41).[5] Together, these provisions were designed to restrict access to English-medium school for both immigrants and francophones. Nonetheless, the anglophone community was furious at what it saw as the restriction of its rights and hoped to punish the Liberal government in the 1976 elections, a strategy which backfired, however, with the coming to power of the *Parti Québécois* (Levine 1997: 176–177).

With regard to language of instruction, the more assertive Bill 101 or Charter of the French language which followed a year later stated that "[i]nstruction in the kindergarten classes and in the elementary and secondary schools shall be in French", this both in state schools and in those private schools partially funded by the Québec state (s. 72). Abolishing the freedom of choice regarding language of instruction, the Charter as originally drafted allowed attendance of English-medium schools only for anglophones with historical links to Québec, namely those children whose mother or father received their primary education in Québec in English. This had the effect of excluding three categories of people: immigrants, including those whose mother tongue was English; francophones; and Canadians from other provinces (Woehrling 2000: 287). Despite their immediate disapproval, the federal authorities nonetheless had no means to combat what was known as the 'Québec clause' since it was not incompatible with

4. The term 'allophone' is used in Quebec to denote those whose mother tongue is neither French nor English, but does not include indigenous peoples.

5. Section 40 nonetheless allowed for Aboriginal children to be taught in their native languages.

the *Constitution Act, 1867*, which continued to be in force at the time. Written in a way as to invalidate the Charter precisely on this point, the new Canadian Charter of Rights and Freedoms included in the *Constitution Act, 1982*, adopted without the agreement of Québec, resulted in a Supreme Court of Canada decision in 1984 (*A.G. (Québec) v Québec Protestant School Boards* [1984] 2 S.C.R. 66) which forced the provincial authorities to replace the 'Québec clause' with the 'Canada clause' (*Act to amend the Charter of the French language*, S.Q. 1993, c. 40, s. 24).

Nowadays, education in English is available upon request for those children: (1) whose mother or father is a Canadian citizen and received their primary education in English in *Canada*; (2) whose mother or father is a Canadian citizen and who has received or is receiving elementary or secondary instruction in English in *Canada*, and the brothers and sisters of that child; (3) whose father or mother, although not Canadian citizens, received elementary instruction in English in Québec; (4) who were receiving instruction in English in a public kindergarten class or in an elementary or secondary school at the time of the introduction of the Charter, and the brothers and sisters of that child; and (5) whose father or mother was residing in Québec at the time of the introduction of the Charter and had received elementary instruction in English outside Québec (s. 73).

In all cases, the instruction in English has to constitute the "major part" of the schooling received, a requirement that was upheld by the Supreme Court of Canada in 2005 on the condition that the definition of "major part" involved a qualitative rather than a strictly quantitative assessment (*Solski (Tutor of) v A.G. (Québec)* [2005] 1 S.C.R. 201; see also Woehrling 2005: 267–285). The Court decided not to deal with the issue of the constitutionality of Bill 104 (S.Q. 2002, c. 28), introduced amongst other reasons to close a loophole whereby attendance of a private school not subsidised by the state, even for a short period, was enough to guarantee subsequent passage into the English-medium state-funded school system. The resulting amendment made to the Charter was, however, declared inoperative in August 2007, when Québec's Court of Appeal considered it incompatible with article 23 of the Canadian Charter of Rights and Freedoms (*H.N. c. Québec (Ministre de l'Éducation)* 2007 QCCA 1111). This decision has proved highly controversial, not least because it was the two English-speaking judges whose opinion prevailed and because one of them was subsequently shown to have acted previously for Alliance Québec, the English-speaking lobby group behind many of the challenges to the Charter (see e.g., Cauchy 2007; Descôteaux 2007). With the support of Quebec's opposition parties, the Liberal government of Jean Charest has claimed that it intends to contest the decision in the Supreme Court of Canada (Porter 2007).

Despite the challenges, the Charter has resulted in a dramatic increase in the number of allophone pupils attending French-medium schools: 79,2% in 2006–07 (*Ministère de l'Éducation, du Loisir et du Sport* 2008). One of the hopes of the authorities has been that, over time, these *enfants de la loi 101* would demonstrate a greater affinity with Québec and the French language. Others are less certain about the long-term effectiveness of compulsory schooling in French for immigrants and argue that

"maintaining the distinct society may well depend on their having a deeper, less instrumental commitment than that" (Carens 2000: 133). Such concerns are all the more real because the Charter only requires instruction in French at kindergarten and at primary and secondary levels, not for CEGEP[6] or university studies.

> It is doubtful that, in the long term, school alone can guarantee the *francisation* of immigrants. To be sure, there are more immigrants who learn French at primary and secondary school, but this obligation does not apply to college level and it is noteworthy that when they have the choice, a majority of youngsters with immigrant backgrounds invariably opt for English schools at college and university levels. This has a much greater impact upon social and professional integration. (Monière 2003: 23)

4.2 New directions in acquisition planning

While legislative measures, such as those requiring attendance at French-language schools, have enjoyed a fair degree of success in the past, it is now generally accepted that the survival of French in the 21st century, especially in Montréal, depends on a language policy which is much broader in scope. Whereas in the beginning, the authorities preferred to concentrate on improving the instrumental value of French, possibly because minority languages are often dismissed as "anti-instrumental, as merely 'carriers' of 'identity'" (May 2003: 137), they soon realised the potential benefits of encouraging an affective attachment to the host society as an additional source of motivation. Indeed, numerous government documents have made claims such as "[f]or immigrants, the learning of French supports the development of their sense of belonging to the Québec community" (*Ministère des Communautés culturelles et de l'Immigration* 1991: 17) and "[t]his expression '*langue commune*' evokes the dual idea of 'communication' and 'community'" (*Comité interministériel sur la situation de la langue française* 1996: 239). It is thus now hoped that, in addition to having a communicative function, French will also be an expression of identity for new Quebecers. For even if French is a second language instead of a mother tongue for the latter, at least for the first generation, it does not follow that the attachment to this language must be purely instrumental: "second languages can play a significant role in one's linguistic identity" (Joseph 2004: 185).

The importance of integrative motivations has only been further stressed by the more recent debates about the definition of the Québec nation. For example, the Larose Commission (2001: 19) pointed out the need to explain to new arrivals that, "in strictly linguistic terms, arriving in Québec is not equivalent to arriving in Canada". While the Commission's proposal of formalising a Québec citizenship focused predominantly on French was ultimately rejected, the goal of creating an integrative motivation to

6. CEGEPs (*collèges d'enseignement général et professionnel*, 'colleges of general and vocational education') are post-secondary schools that prepare students for university (2 years) and provide technical and other diplomas (3 years).

learn the language by having recourse to civic values nonetheless remains. For example, the Liberal government's immigration and integration Action Plan for 2004–2007 stressed once again that the mastery of French by immigrants is in itself considered an expression of belonging to a society "which has become their own" (*Ministère des Relations avec les citoyens et de l'Immigration* 2004: 65). As stated in the same document, one of the aims of the 'francisation services' offered to immigrants is also "to develop a sense of belonging thanks to knowledge of the *langue publique commune*" (*Ministère des Relations avec les citoyens et de l'Immigration* 2004: 66).

This emphasis on the *public* dimension of French language use is a key element of current language policy in Québec. Indeed, it was never the intention to encroach upon private communications, the architects of the Charter clearly distinguishing the government's language policy from one of linguistic assimilation (see P. Béland 1999: 9–10). Nonetheless, the Charter did in the early days form part of a broader policy of promoting a *culture de convergence*, whereby immigrants in particular were encouraged to 'converge' towards the culture of the ethnic francophone majority.[7] With the abandonment of this policy, and the new concern for ethnic diversity that arose in the 1990s in particular, it became necessary to stress ever more so that French was being promoted solely as the "common language and language of public life" (*Ministère des Communautés culturelles et de l'Immigration* 1991: 17). The notion of *langue d'usage public* (language of public use) was introduced to replace (or at least exist alongside) the traditional categories used in censuses of the time, namely *langue maternelle* ('mother tongue') and *langue d'usage* (the language spoken at home) (*Comité interministériel sur la situation de la langue* 1996).

In order to evaluate the effects of the Charter, an 'indicator of the languages of public use' was also constructed based on statistical information relating to the use of languages in various public domains: formal communications, the workplace, shops, health establishments, and so on (see P. Béland 1999: 4). As demonstrated by table 3, the new indicator resulted in more positive statistics concerning the use of French than the traditional categories, especially with regard to the island of Montréal, home to the highest proportion of immigrants in the province.

The languages of public use indicator has been the object of some criticism on methodological grounds (Roy 2001); it has been claimed that the "*faux-fuyant*" ('red herring') or "chimerical" nature of the *langue d'usage public* concept conceals the actual precarious position of the French language, especially on the island of Montréal (Castonguay 2002: 13). Unlike *langue maternelle* and *langue d'usage*, the *langue d'usage public* indicator does not provide information about language maintenance and language shift tendencies – both amongst native speakers and new Quebecers – the only reliable data, in the view of some, that can be used to evaluate the vitality of French in Québec (Castonguay 2003).

7. Indeed in his capacity as Deputy Minister for Cultural Development, the main architect of the *culture de convergence* policy, the sociologist Fernand Dumont, was one of the co-signatories of the 1977 White Paper which led to the Charter (Mathieu 2001: 18–19).

Table 3. Percentage of the population according to mother tongue, the language spoken at home and the language of public use (index) on the island of Montréal, 1997. The population was 18 years or older and native or immigrated before 1995, and was required to declare one mother tongue only, N=7,213 (P. Béland 1999: 48).

	Language category			
Language	Mother tongue	Language spoken at home	Language of public use	Main language of public use
French	57	58	61	71
French and English	not available	1	17	not applicable
English	17	23	21	28
Other	26	18	2	2

Nonetheless, the notion of *langue d'usage public* was originally very popular in official circles precisely because it distanced itself from the assimilationist connotations of the concept of language shift, stressing instead the role of French as a second language. It forms part of a new approach to Québec national identity in general which is more civic in nature than was the case previously, and which has prompted efforts to 'de-ethnicise' French in Québec. A good example of official rhetoric on this point is provided by the title of the Larose Commission's report (2001): *Le français, une langue pour tout le monde*. In other words, no longer is French considered the property of the French Canadian majority, but rather as a language for all Quebecers, irrespective of ethnic origin, a principle which has become the cornerstone of Québec's unique model of integration and citizenship (see Oakes & Warren 2007).

Despite the governmental optimism, only 25% of allophones in Montréal in 1997 claimed to work in French 90% or more of the time (compared to 65% for native French speakers; see table 2 above). The latest statistics from 2006 show that, while 48% of allophones in the metropolitan region of Montréal used French "the most often", only 24% used "only French" (P. Béland 2008: 21). Moreover, amongst those 36.8% of allophones who did undergo language shift in 2006, 49% still opted for English as opposed to 51% for French (Secrétariat à la politique linguistique 2008: table 9). The instrumental motivation to use English thus persists. One suggested reason is the exodus of educated and wealthy francophones to the Montréal suburbs, which leaves immigrants on the island of Montréal with fewer middle-class francophone role models to encourage their integration (Leclerc 2007; see also Levine 1997: 356–362; 2002).

However, the attraction of English today also lies not in the fact that it is the language of a socio-economically advantaged minority in Québec so much as in its status as the language of socio-economic success on the North American continent, not to mention as the current *lingua franca* of an increasingly interconnected world (Stefanescu & Georgeault 2005: 591). Once again, this highlights the effect of language status

on efforts to promote language acquisition. As noted above, language policies, including those comprising acquisition planning measures, are rarely successful if they do not have support at the grassroots level:

> [A]ll the evidence to date suggests that governments are unable to legislate top-down about acquisition of lingua francas. Although language learning on an ideological basis was achieved in nation building, this was because top-down and bottom-up movements coincided: the spread of the national language was central to nation building; acquisition of the language was useful for individual success and social mobility. Such dual pressure is not present for any policy that tries to limit English-language spread. (Wright 2004: 169–170)

That "globalization and its linguistic ramifications are welcomed by many who see in it upward mobility" (Edwards 2003: 41) is a fact that language planners in Québec need to take into consideration if their efforts are not to run counter to the aspirations of new Quebecers or, for that matter, of all Quebecers, irrespective of mother tongue.

Indeed, on the same day that it heard the Solski case (see above), the Supreme Court of Canada was also called upon to settle a claim made by a group of *French-speaking* families who demanded access to education in English for their children, arguing that the restrictions imposed by the Charter of the French language violated the equality rights granted to them by Québec's own Charter of Human Rights and Freedoms (R.S.Q. c. C-12, ss. 10 and 12). The Court rejected the claim, stating that the granting of access to education in English in this case would have the effect of reading out of the Constitution (*Constitution Act, 1982*, s. 23) the right to education in English in Québec, or in French in the rest of Canada, intended solely for members of the relevant language minorities, a right which could not be invalidated by other equality rights (*Gosselin (Tutor of) v. A. G. (Québec)* [2005] 1 S.C.R. 238; see also Woehrling 2005: 297–300). Nonetheless, the case does highlight the need to reconcile the spread of French with the recognised importance of the global *lingua franca*, the latter as evidenced by the decision of the Jean Charest's Liberal government to introduce the teaching of English from Grade 1 at primary level (age 6) from 2006 (Chouinard 2005).

As has rightly been claimed by one commentator, "francisation is compatible with knowledge of English" (Pagé 2005: 222). Moreover, there is no reason why francisation should not also be considered compatible with the promotion of other languages, including those already spoken by immigrants. Indeed, it is in Québec that one finds the highest rate of trilingualism in Canada: whereas only 2.1% of the population of the rest of the country claimed to know English, French and at least one other language in 2001, 8.7% made the same claim in Québec, with 22.2% doing so on the island of Montréal on account of its high proportion of immigrants (*Office québécois de la langue française* 2005: 33; *Secrétariat à la politique linguistique* 2005: 10). As an increasingly active presence on the global scene, Québec can only benefit from making full use of the linguistic potential of its ethnolinguistically diverse population, and this need not necessarily undermine the status of French in Québec (Fréchette 2005). One of the

major challenges for French acquisition planning in Québec in the future is therefore to find a way of coexisting in harmony with acquisition planning that favours the learning of other languages, not least English. Only by finding a suitable balance between desires to learn and maintain other languages on the one hand, and to promote and spread French on the other, can the latter become "a language which is not imposed, but which imposes itself" (Stefanescu & Georgeault 2005: 593).

5. Corpus planning in Québec

As with status planning, the issue of corpus planning did not arise in the early days of French colonisation. Apart from the odd *canadianisme* or borrowing from an indigenous language, French as spoken in New France resembled on the whole that used by the lower classes of the 'Frenchified' parts of France, especially in the north-west (C. Bouchard 2002: 47). Moreover, the settlers had a reputation for speaking "French in the greatest purity, and without the least false accent" (Jefferys 1761: 9). No need was thus felt to alter the fabric of the language in any way. However, the linguistic isolation from France that followed the colony's becoming a British possession meant that the variety of French spoken there began to differ significantly over the next century. Not only was the language removed from the linguistic effects of the French Revolution, the return to France of many elites resulted in a greater emphasis on the language of the masses which, as well triggering the revival of many regionalisms, also opened the door to an influx of anglicisms:

> The fact that language was thus left in the care of the masses meant that Canadian French could not participate in the movement to create terminology linked to the emergence of industrial society; English, the only source on which the people could draw, had a deep impact on the language of commerce, that of workers and even that of farming, thus hindering the renewal of technical language [i.e., lexical modernisation] (Poirier 2000: 117).

While it was mainly foreign travellers who first noticed the differences that soon began to arise between European and Canadian French, some early observations were made by French Canadians themselves. The publication of Thomas Maguire's *Manuel des difficultés les plus communes de la langue française* (1841) prompted a more widespread awareness and marked the beginning of linguistic purism in French Canada. By the second half of the 19th century, it became of real concern that Canadian French had become a *patois* far removed from the prestigious variety of French spoken in Paris. Having begun to re-establish links with France after a century of rupture, it was members of the elite who were first roused by what has become known as the 'myth of French Canadian Patois' (C. Bouchard 2002). Arthur Buies, Louis Fréchette, Joseph-Amable Manseau, Oscar Dunn and others began to write an impressive number of books, pamphlets and newspaper columns in which they denounced the use of

anglicisms in particular.[8] In his *L'anglicisme, voilà l'ennemi*, Jules-Paul Tardivel (1880), for example, warned that "[i]f we do not watch out, it is possible that with time the language of the province of Québec will become a real *patois* which will only be French in name, a jargon that we would be better to abandon faced with the impossibility of reforming it" (Tardivel 1880: 5).

While it was the urban bourgeoisie who were initially targeted because of their close contact with English, the criticism soon spread to the lower classes as industrialisation forced the latter into the English-dominated cities in search of work (C. Bouchard 2002: 89, 91). Even the true peasants or *habitants* did not remain immune for long on account of the archaisms that also now differentiated Canadian French from that spoken in France at the time. Buies, Fréchette and other purists pushed for the modernisation and realignment of Canadian French with French as spoken in France, rejecting the widely-held belief that the former was in fact purer because it was closer to the classical French of Louis XIV's 17th-century France (C. Bouchard 2002: 93–95).

By the end of the 19th century, the 'myth of French Canadian Patois' had reached the public at large, who now began to feel a deep sense of linguistic insecurity in two respects: not only did they feel inferior by not speaking the dominant English language, they were now being told that they did not even speak French, but rather a mere *patois*. Fearing that French Canadians would opt for assimilation rather than a stigmatised identity, many commentators now attempted to counter the negative attitudes by stressing the legitimacy of the local variety of French (C. Bouchard 2002: 101). Such was the mission of the *Société du parler français du Canada* founded in 1902. While still denouncing the use of true anglicisms, the *Société* aimed to raise the profile of certain particularities of Canadian French, using historical studies to reveal that many of these were not anglicisms, as some falsely believed, but rather remnants of old French and certain dialects spoken in France (Mercier 2002). Nonetheless, the efforts of the *Société* and others to improve the standing of Canadian French was not enough to stem the linguistic insecurity felt by most French Canadians, a phenomenon which reached its peak during the period from 1940 until 1960 when attitudes towards French had never been as negative (C. Bouchard 2002: 85).

5.1 Corpus planning from the 1960s

With the Quiet Revolution of the early 1960s, the myth of French Canadian Patois was replaced by debates about *joual*, a distortion of the word *cheval* ('horse') taken from the

8. Many of these language columns can be searched and consulted in their entirety in the ChroQué database accessible through the website of the *Laboratoire de lexicologie et lexicologie québécoise* (http://www.lexique.ulaval.ca). Extracts from more general comments about the quality of language spoken in Quebec can be found in the *Perception de la qualité de la langue au Québec* corpus at the *Centre d'analyse et traitement informatique du français québécois at the Université de Sherbrooke* (http://www.usherbrooke.ca/catifq/corpus).

expression *parler cheval* ('to speak badly'). In his now famous *Les insolences du Frère Untel*, Jean-Paul Desbiens denounced what he considered to be this "decomposition", this "absence of language that is *joual*" (Desbiens 1960: 24), which he claimed epitomised the collective alienation of French Canadians: "Our pupils speak *joual*, write *joual* and don't want to speak or write in any other way. [...] The vice is therefore profound: it involves syntax. It also involves pronunciation" (Desbiens 1960: 24). Although less direct in its comments, the *Commission royale d'enquête sur l'enseignement dans la province de Québec*, known more commonly as the Parent Commission, was to make similar observations about the quality of the spoken and written French of Québec school children (Parent Commission 1966: 59–65).

It was in this climate that the *Office de la langue française* was established in 1961, demonstrating an "indication of the government's awakening interest in language planning" (d'Anglejan 1984: 31). Considering the attitudes of the time, it comes as no surprise that the newly founded *Office* was to adopt a normative line regarding its first major task, namely the promotion of a norm or standard to be used:

> The *Office* considers that, to resist the pressures exerted on the French of Québec by the English-speaking North American environment, it is essential to rely on the francophone world: that means that usage should align itself with international French, while making room for the expression of specifically North American realities. (*Office de la langue française* 1965: 6).

The only deviations condoned were lexical items which had no equivalent in European French: those anglicisms which "fill a gap in our vocabulary" (*Office de la langue française* 1965: 11) and a certain number of acceptable *canadianismes de bon aloi*, defined four years later by means of a list of 62 terms and expressions, including borrowings from indigenous languages (e.g. *atoca* 'cranberry') and innovations created to avoid anglicisms (e.g. *fin de semaine*) and to refer to Québec's unique climate, geography, fauna, flora, etc. (e.g. *poudrerie* 'blowing snow', *érablière* 'maple grove') (*Office de la langue française* 1969).

With the *Act to promote the French language in Québec* in (S.Q. 1969, c. 9), the *Office* was given an increased mandate to "foster the correction and enrichment of the spoken and written language" (s. 4). This dual preoccupation was reiterated in the *Official Language Act* (S.Q. 1974, c. 6, s. 55), which nonetheless marked a shift in policy with regard to both these corpus planning activities. On the question of correction, the Act replaced the *Office* with the *Régie de la langue française*, which was to prove much less normative than its predecessor (Maurais 1987: 400).

With regard to the enrichment or elaboration of the language, the Act signalled a more serious approach, by making provisions for the establishment of ministerial terminology committees to draw up lists of existing terms and their meanings (terminology unification), and make recommendations for new terms where needed (lexical modernisation) (s. 51). Once approved by the *Régie*, these terms would be published in the *Gazette officielle du Québec* upon which they would become "obligatory in texts

and documents emanating from the public administration, in contracts to which the public administration is a party and in teaching manuals and educational and research works published in French in the province of Québec and approved by the Minister of Education" (s. 53). In reality, no terminology committees were established until after the passing of the Charter of the French language, when the newly reinstated *Office de la langue française* set up its own terminology committee to coordinate the work of the ministerial ones (Maurais 1987: 402). As well as making similar provisions for terminology work as the previous language law, the Charter also extended the state's corpus planning activities to include the standardisation of an auxiliary code, in so far as it established a Commission de toponymie to "propose to the Government the standards and rules of spelling to be followed in place names" (s. 125).

The new approach towards both standardisation and terminology work was demonstrated in a number of corpus-related policy statements. For example, the *Énoncé d'une politique relative à l'emprunt de formes linguistiques étrangères* (*Office de la langue française* 1980) recognised that some borrowings (e.g. *design, tennis, shampooing*) and calques or word-for-word translations (e.g. *planche à voile* 'sailboard') are legitimate, as long as their adoption does not undermine the creation of neologisms in French (Vachon-L'Heureux n.d.: 15–17). What the 1980 *Énoncé* did for borrowings and calques, the *Énoncé d'une politique relative aux québécismes* (*Office de la langue française* 1985) did for so-called *québécismes* or Quebecisms, that is, those lexical items peculiar to French as used in Québec. These can be either of a formal type, where the term's form is unique (e.g., *cégepien* 'CEGEP student', *chiropratique* 'chiropractic') or semantic in nature, where only the meaning is particular to Québec (e.g., *dépanneur* 'convenience store', *baccalauréat* 'university degree'); they can also be grouped according to three categories: those using the existing pool or stock of French words (e.g., *banc de neige* 'snowdrift'); those which have been created (e.g., *tabagie* 'tobacconist's shop'); and those consisting of borrowings or calques, as seen above (Vachon-L'Heureux n.d.: 18).

While rejecting any prospect of a separate Québec language, the *Énoncé* nonetheless recognised the legitimacy of some of these forms in so far as they serve to enrich the French language as a whole (Maurais 1987: 403). Echoing statements made at the time regarding status planning goals (see above), the *Énoncé* also stressed that "[t]he private use of language is in no way affected and individual freedom concerning language use in no way violated" (*Office de la langue française* 1985: 4, cited in Maurais 1987: 400).

Other corpus policy statements issued by the *Office* concern the question of the feminisation of language. Following its three *avis de recommandation* in 1979, 1981 and 1984, the *Office* published *Titres et fonctions au féminin: essai d'orientation de l'usage* (*Office de la langue française* 1986), in which it made recommendations regarding the formation of feminine profession titles. Perhaps the most innovative of its suggestions was the feminine formed by adding *-e* to certain professions ending in *-eur* (e.g. *professeure*), somewhat radical because the regular form would use the suffix *-euse* (e.g. *chanteuse*). As well as summarising the recommendations of this first publication, *Au féminin: guide de féminisation des titres de fonction et de textes* (Biron 1991) extended

the activity to the feminisation of texts, making suggestions guided by two main principles: the use of both genders in full (e.g., *chaque étudiant et étudiante* and not *chaque étudiant/e*) and the use of generic or neutral terms and expressions (e.g., *le corps professoral* instead of *les professeurs et les professeures*).

In addition to these documents, the *Office* has produced a vast number of terminological tools, including lexicons, posters, handbooks, such as *Le français au bureau* (Guilloton & Cajolet-Laganière 2005), and an online technical dictionary that also provides translations in English and Latin (http://www.granddictionaire.com); it also offers a telephone consultation service on terminology issues, all of which aims to reinforce status planning goals by providing the resources necessary for the francisation of the business world, public administration and indeed the public sphere at large. However, it is not only the state which is engaged in corpus planning. A policy paper issued by the then *Régie de la langue française* in 1976 delegated responsibility for specialised terminology to the private sectors concerned (Daoust 1984: 83). It was in this way that certain companies came to play a leading role in their various fields (e.g., Bell Canada in telecommunications, Hydro-Québec in electricity and IBM in information technology) (Maurais 1987: 400). Of note too are works not published by the *Office*, but which nonetheless draw heavily on its efforts, such as the *Multidictionnaire de la langue française* (Villers 2003) and the various dictionaries referred to collectively as *Le visuel* (e.g. Archambault & Corbeil 2004).

5.2 The emergence of a Standard Québec French

That there exists a great number of resources is of course no guarantee that the suggested French terminology will be used (Daoust 1984: 94; Maurais 1987: 406). For example, one study which evaluated the use of feminine forms in the appointments sections of three Québec newspapers revealed that while feminisation was fairly well advanced, the forms used did not always coincide with official recommendations (Conrick 2002: 223–233). Nonetheless, the standardised terminology exists as an ideal, in the same way that any standard represents "an idea in the mind rather than a reality – a set of abstract norms to which actual usage may conform to a greater or lesser extent" (Milroy & Milroy 1999: 19). Indeed, the terminology work of language agencies and others in Québec over the years has contributed to the emergence of a standard variety of Québec French, defined as early as 1977 as "the socially prestigious variety of French that the majority of Quebecers tend to use in formal communication situations" (*Association québécoise des professeurs de français* 1977: 11). In its oral form, it is commonly referred to as Radio-Canada French after the French-language branch of the federal government-owned broadcaster, another actor in French corpus planning since the late 1950s (Radio-Canada 2003: 5; see also 2004).

Avoiding the most stigmatised features of French as spoken in Québec (e.g., diphthongisation of long vowels), it nonetheless includes many phonetic and phonological traits of French spoken in Québec that are now considered socially neutral. These

include affication or 'assibilation' of /t/ and /d/ before high, front vowels and semi-vowels (e.g., *petit* [pt^{s}i], *dire* [d^{z}iʀ] and the maintenance of the phonemes /ɑ/ and /œ̃/) (e.g., *pâte* [pɑt] and *brun* [bʀœ̃] as opposed to [pat] and [bʀɛ̃](, respectively, as heard in Parisian French) (Ostiguy &Tousignant 1993).

In its written form, a standard for Québec French has traditionally been more difficult to identify. In addition to some features concerning orthography (e.g. *canoé* instead of *canoë*), typography (e.g., accents, diereses and cedillas placed on upper-case letters) and syntax (e.g. *avoir voulu, j'aurais fini plus vite* 'had I wanted to, I could have finished faster'), it is defined in particular by the results of the corpus planning initiatives discussed above (i.e., accepted borrowings, calques, *québécismes*, feminine forms, etc.). For example, a study of the formal register of French used in *Le Devoir, La Presse*, *Le Soleil* as well as the French daily *Le Monde* found that what distinguished the Québec press the most from *Le Monde* was the number of lexical innovations or *québécismes*: 70% of the lexical forms specific to the Québec dailies examined (Villers 2005: 412). Words such as *traversier* and *commanditaire* are preferred in most contexts in Québec, including the most formal, whereas *ferry-boat* and *sponsor* are acceptable in the same contexts in France (Martel & Cajolet-Laganière 1996: 109–112). As noted by one commentator, "[t]he rejection of anglicisms – especially lexical anglicisms – is part of the standard of Québec French" (Maurais 1986: 83).

Indeed, it was the perceived inclusion of too many anglicisms, along with other items from colloquial and popular language, such as swear words, which led to much criticism of two attempts to codify Québec French, the *Dictionnaire du français plus* (1988) and *the Dictionnaire québécois d'aujourd'hui* (1992), which were eventually denied the endorsement of the Ministry of Education. Subsequent analyses of the criticisms revealed the need for a dictionary which provides a detailed picture of the social hierarchisation of the various usages of French as spoken in Quebec, that is, information about what words are appropriate for which situations. One dictionary, the *Multi-dictionnaire de la langue française*, goes some way to meeting this need, at least in its latest edition (Villers 2003). However, this is not a general dictionary so much as a list of difficulties of the French language with a corrective agenda. Moreover, it has been criticised for its numerous omissions, errors and dubious decisions regarding the acceptability and register of certain *québécismes*, the slowness with which several Québec usages have been accepted by the various editions, and the fact that it is inconsistent with some recommendations made by the *Office* in its online *Grand dictionnaire terminologique* (J. Auger 2005: 70–71).

The idea of a "dictionary of French for Canadians, a dictionary of words from academic language, and also of good French Canadian words" was first mooted in 1914 by Adjustor Rivard, one of the founders of the *Société du parler français du Canada* (Rivard 1914: 85–86, cited in Poirier 1986: 274). It was taken up again in the early 1980s by Pierre Auger, then in charge of terminology at the *Office* (P. Auger 1981). Following much academic discussion, the *Conseil de la langue française* submitted an opinion to the Minister responsible for the Charter for the French language supporting the

compilation of such a dictionary. The same document also noted the benefits not only for native French-speaking Quebecers but also those of immigrant descent, thereby linking corpus planning with acquisition planning goals.

> The existence of such a work would certainly have the consequence of increasing the linguistic security of Quebecers; it would provide foreigners with an awareness of how the French language has adapted to Québec; it would allow immigrants in the process of becoming French speakers to benefit from a solid, formally documented reference which would demonstrate the existence and legitimacy of a Standard Québec French; it would allow allophones who, at least at the beginning of their stay, get by with a sort of 'interlanguage', made up of their mother tongue and the language of the host community, to acquire a tool that can only facilitate their integration to Québec society. Indeed, the integration of immigrants into the French fact has become more and more talked about; reasserting the value of Québec French, by showing that there exists a Standard Québec French which is legitimate, can only facilitate their integration. (*Conseil de la langue française* 1991)

This benefit of the proposed dictionary was also stressed by the Larose Commission (2001: 89) who reiterated the importance of instruments of reference for Québec French, as well as by the FRANQUS research team at the Université de Sherbrooke, who were ultimately granted the responsibility of producing the new dictionary to be published in electronic format in 2008 and in hardcopy in 2009 (FRANQUS 2006).[9] Not all agree, however, and a small yet vociferous minority cling to the illusion of an 'international French', in reality the standard used in France. One commentator thus claims that "[t]here has in fact never been a greater act of legitimising *joual* as that undertaken today by the supporters of the general dictionary of Québec French" (Lamonde 1998: 85); another warns of the "linguistic ghettoisation" of Québec provoked by the "linguistic separatism" and "francophobic nationalism" of those disdainfully labelled the "*aménagistes*" or "language planners" (Meney 2003a; 2003b; 2004a; 2004b; 2004c; 2005a; 2005b; 2005c). Clearly, such opinions express extra-linguistic concerns and involve the question of which variety to promote or the status-planning activity referred to by Haugen as 'allocation of norms': yet another example of the inextricable link between the various types of language planning.

9. In fact, the two principal researchers of the FRANQUS project are largely responsible for linking the national dictionary project to the new civic approach to Quebec national identity: Pierre Martel was president of the *Conseil de la langue française* at the time of the opinion presented to the Minister in 1991; he was also responsible for organising the day devoted to questions of quality of language for the Larose Commission, of which Hélène Cajolet-Laganière was a commissioner.

6. New realities, new challenges

On 26 August 2007, the Charter of the French language celebrated its 30th anniversary. To mark the occasion, the Minister responsible for the Charter, Christine St-Pierre, launched a promotional campaign consisting of a television advertisement, posters on public transport and banners on certain websites. The aim of the campaign was to remind Quebecers of the importance of the Charter, the gains of which risk being taking for granted especially by the younger generation who do not need to fight for their linguistic rights in the same way as did their parents. But as seen in this chapter, if language planning is not to be met with resistance, it has to take into account the wishes of the populace; it must also change and adapt itself to new realities if it is to be successful. Québec in 2007 is not the same place as it was in 1977, and English is no longer the language of a socio-economically privileged elite so much as the *lingua franca* of an increasingly globalised world, knowledge of which is as necessary for success in today's Québec as it is in France, Sweden, Singapore and Korea. The prestige of English naturally leads to a strong instrumental motivation to learn it amongst all Quebecers, irrespective of ethnic background, so that the question of how to accommodate rather than reject English is one of the major challenges which now faces status and acquisition planning alike. Adjusting to English on the one hand and promoting French on the other will surely prove a delicate and difficult balance to strike, as witnessed by the new attack made only days before the 30th anniversary on the provisions of the Charter limiting access to instruction in English as discussed above.

That language policy in Québec is now adopting a less defensive and more open stance is also a consequence of increased ethnic and linguistic diversity that has followed intensive immigration. Although its ultimate goal of ensuring the maintenance of the French language remains the same, language planning and policy in Québec can no longer focus exclusively on the needs of the French Canadian majority; rather, it is today necessarily shaped by the desire to accommodate a growing number of immigrants, the group of Quebecers upon whom the future of French is now deemed to depend. While it will forever have difficulty competing with English in instrumental terms, French in Québec nonetheless has the advantage of being able to generate additional motivations of a sentimental or integrative nature. As seen in this chapter, current policy is to stress the importance of French for integration and cohesion, and in particular for Québec's unique model of citizenship. As stated in the final report of the *Commission de consultation sur les pratiques d'accommodement reliées aux différences culturelles* ('Consultation Commission on Accommodation Practices Related to Cultural Differences'), otherwise known as the Bouchard-Taylor Commission: "The French language is the main medium that allows Quebecers of all origins to get to know each other, interact, cooperate and participate in the development of Québec society." (Bouchard-Taylor Commission 2008: 108).

As with status and acquisition planning, corpus planning is also confronted with new challenges. The transnational nature of business today, together with the advent of

new technologies, are not without linguistic consequences and have made the work of terminologists all the more important for ensuring the maintenance of French in Québec. As for immigration, this has affected the development of corpus planning in so far as the policy of espousing a French of quality is now justified in terms of the need to improve the power of attraction of the language amongst immigrants. Again, a balance needs to be struck, this time between the promotion on the one hand of a largely fictitious 'international French', and on the other of a language which has the means to express Québec's unique identity and also serve as a mother tongue for those of French Canadian descent. According to the authorities and the majority of those working in the field of language policy and planning, the solution lies in the promotion of a Standard Québec French, to be codified in a new national dictionary to be published from 2008.

6.1 Directions for future research

An important factor behind the success of Québec language policy and planning to date lies it its grounding in language policy and planning research. Indeed, of the CAD $23 million allocated annually by the Québec government to the agencies responsible for the application of the Charter, CAD $6.5 million (28%) is spent on research related to language planning and policy (Dumas 2007). In order to ensure the continued success of language policy and planning in Québec, there is a need for further research that takes into consideration the new realities and challenges as discussed above. Of the numerous areas worthy of enquiry, two stand out as being of particular importance to applied linguists: language attitudes and motivations behind language acquisition.

Owing to the French-English language contact in Montréal, Québec has provided the context for some of the most important investigations into language attitudes since the advent of this field of study in the 1960s (e.g., Lambert, Hodgson, Gardner & Fillenbaum 1960; d'Anglejan & Tucker 1973; Bourhis, Giles & Lambert 1975; Genesee & Holobow 1989). These investigations have tended to reveal more positive attitudes towards English rather than French, both amongst anglophones and francophones; they have also demonstrated more favourable attitudes towards European French than to the variety of French used in Québec, which is often perceived as being of poor quality. In more recent years, such studies have become much less frequent despite the fact that the sociolinguistic environment in Québec has changed substantially over the last few decades. Francophone Quebecers are now more linguistically secure, which will undoubtedly affect how they view attempts to promote their language and particular variety of it. The new make-up of Québec society in the 21st century has also made it necessary to understand the language attitudes of an increasing number of immigrants, yet surprisingly next to no research has been conducted in this area. Linked to the question of attitudes are the motivations that lie behind language acquisition. How can a policy which aims to promote French as the language of public communications succeed without an in-depth understanding of the motivations that Quebecers of all origins clearly have to learn English as well? In this respect, applied linguists can make

important contributions by undertaking studies which seek to measure such attitudes and motivations, using the well developed methodologies available in their field (e.g. questionnaires, matched-guise technique). That language planners and policy makers in Québec have already begun to rise to the new challenges of globalisation and immigration demonstrates a creativity and openness to change that is all too often lacking in other French-speaking contexts. Language planning and policy researchers are thus in a unique position to inform concrete policy, thereby helping to ensure that Québec will continue to serve as a model for other contexts around the globe, from Catalonia and China to Belgium and France alike.

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English-French glossary

acquisition	*acquisition, appropriation*
additive bilingualism	*bilinguisme additif*
agreement	*accord*
ambiguous, ambiguity	*ambigu, ambiguïté*
aphasia, aphasic	*aphasie, aphasique*
apocope	*apocope*
apophonous	*apophone (alternance vocalique)*
arabization	*arabisation*
atypical	*atypique*
auditory deficit	*déficit auditif*
aural-oral	*audio-oral*
awareness	*conscience*
bilingual, bilingualism	*bilingue, bilinguisme*
borrowing	*emprunt*
buggy model/bug catalogue	*modèle de bogues/catalogue de bogues*
categorial grammar	*grammaire catégorielle*
categorial uniformity	*uniformité catégorielle*
categorize	*catégoriser*
channel	*canal*
clinical marker	*marqueur clinique*
computer-aided language learning (CALL)	*apprentissage des langues assisté par ordinateur (ELAO)*
clue (syntactic, semantic, etc)	*indication syntaxique, sémantique*
code-switching	*alternance linguistique/de codes*
codification	*codification*
cognate	*mot apparenté, congénère*
cognize, cognition	*avoir conscience de, cognition/connaissance*
colloquial words	*expressions familières*
Communicative Language Teaching (CLT)	*didactique de langue communicative*
computational complexity	*complexité informatique*
constructs	*concepts*
control group	*groupe témoin*
corpus linguistics	*linguistique de corpus*
counterbalanced instruction	*enseignement équilibré*

cued speech	*langage parlé complété (LPC)*
curriculum	*programme*
database	*banque de données*
data collection	*recueil de données*
deaf community	*communauté sourde*
deaf, deafness	*sourd, surdité*
diagnosis	*diagnostic*
diglossia	*diglossie*
(high and low functions)	(*fonction élevée, basse)*
discourse analysis	*analyse du discours*
discourse competence	*compétence discursive*
early parameters	paramètres précoces
elicitation task	*tâche empirique/de recueil de données*
enbedding	*emboîtement*
encode, encoding	*coder, codage*
epilepsy	*épilepsie*
feature	*trait*
feature checking	*vérification des traits*
feedback	*réaction*
findings	*résultats*
flexional ending	*terminaison flexionnelle ou désinence*
fluency	*facilité, aisance, fluidité*
formal expression	*expression formelle*
formulaic	*formulaïque, préfabriqué*
(expressions/language/sequence)	*(expressions, langage, séquence)*
free variation	*variation libre*
gender marker	*marque/indicateur du genre*
greeting	*salutation*
hearing loss	*perte auditive*
identity language	*langue identitaire*
idiomatic expression	*formation synaptique, expression idiomatique*
immersion	*immersion*
impairment	*déficience, affaiblissement, infirmité, traumatisme, handicap*
incidental	*secondaire, contingent, circonstanciel*
indigenous language	*langue autochtone*
Inf(lectional) features	*traits flexionnels*
input	*input, intrant, entrée*
instructed language learning	*apprentissage d'une langue en instruction*
instructed learners	*apprenants en instruction*
intelligent tutoring system	*système didactique intelligent*

interface model/user interface	*modèle de l'interface/interface de l'usager*
interlanguage	*interlangue*
jargon	*jargon, langage*
language learning	*apprentissage d'une langue*
language acquisition	*appropriation d'une langue*
language delay	*retard de langage/langagier*
language learning process	*processus d'apprentissage d'une langue*
language maintenance	*maintien linguistique*
language planning	*plannification linguistique*
learner	*apprenant*
learnability	*apprenabilité*
leave-taking behavior	*comportement de prise de congé*
lemma	*lemme*
lexeme	*lexème*
literacy	*littératie*
machine translation system	*système de traduction automatique*
magnetic resonance imaging	*imagerie par résonance magnétique*
mapping	*application*
merge	*fusion*
module (componant)	*module (composant)*
native speaker	*locuteur natif*
naturalistic learners	*apprenants en milieu naturel*
naturalistic language learning	*apprentissage d'une langue en milieu naturel*
natural language processing	*traitement automatique de langue(s)*
neologism	*néologisme*
neural imaging	*imagerie neurale*
noticing hypothesis	*hypothèse de la perception*
Optional Infinitive Stage	*étape de l'infinitif facultatif/optionnel*
output	*output, production, sortie*
output data	*données produites, de sortie*
overlay model	*modèle de recouvrement*
parallel processing	*traitement parallèle*
parataxis	*parataxe*
parsing	*analyse syntaxique (automatique)(de textes)*
pattern	*mode, modèle*
phoneme system	*système phonématique*
phonological feature	*trait phonologique*
phonological lexicon	*lexique phonologique*
phonological variants	*variantes phonologiques*
process	*processus, procédé*
processing	*traitement*

processing instruction	*instruction favorisant le traitement de l'input*
proficiency	*compétence*
profound deafness	*surdité profonde*
recast	*reformulation*
register	*registre*
repair	*rectification, correction*
revitalization	revitalisation, redynamisation
saliency	*saillance*
sentence generator	*programme générateur de phrases*
sequential processing	*traitement séquentiel*
slang	*argot*
Specific Language Impairment (SLI)	*Troubles spécifiques du développement du langage (dysphasie)*
speech/voice recognition	*reconnaissance vocale/de la parole*
speech synthesis	*synthèse de la parole*
spelling/grammar checker	*correcteur d'ortographe/de grammaire*
standard deviation	*écart type*
target language	*langue cible*
truncation	*troncature*
Unique Checking Constraint	contrainte de vérification unique
vernacular	*vernaculaire*

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