

The Future of Post-Human Education

*A Preface to a New Theory of
Teaching and Learning*

PETER BAOFU



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To Those in the Future World Beyond Formal and Informal Education

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- 3. *Beyond Civilization to Post-Civilization* (2006)
- 2. Volume 1: *The Future of Human Civilization* (2000)
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FOREWORD

For professionals in education who have devoted a lifetime to teaching and learning, Dr. Peter Baofu's book represents a significant contribution. With the assistance of virtual techniques, he has successfully distilled the major themes of educational wisdom, summarized them together with their positive and negative aspects, and laid a visionary foundation for further thought.

This work essentially replaces thousands of university courses that have been presented to hundreds of thousands of prospective teachers over the past 100 years in teacher certification programs. It cites the critical ideas that have been introduced and discussed in countless hours of classroom time.

Accolades to Dr. Baofu for his unique skills as a university teacher, researcher and communicator. May generations of future learners be the beneficiaries of this work, via the teachers who share and implement his insights.

*Sylvan Von Burg
School of Business
George Washington University*

ACKNOWLEDGMENTS

This book, like all other previous ones of mine, is written to challenge conventional wisdom and to replace it with an alternative novel way of thinking—or more specifically in the current context, a new theory to understand the future fate of education.

Consequently, it is no wonder that this book receives no external funding nor help from any formal organization or institution, because of its political incorrectness—as this is something that I often emphasized in all my previous books.

My only reward is that joyful wonder of conceiving something not thought of before in history.

In addition, I greatly appreciate the foreword by Sylvan von Burg at George Washington University School of Business.

In any event, and as always, I bear the sole responsibility for the ideas presented in this book.

ABBREVIATIONS

- ALD = Peter Baofu. 2007. *The Rise of Authoritarian Liberal Democracy: A Preface to a New Theory of Comparative Political Systems*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- BCIV = Peter Baofu. 2006. *Beyond Civilization to Post-Civilization: Conceiving a Better Model of Life Settlement to Supersede Civilization*. NY: Peter Lang Publishing, Inc.
- BCPC = Peter Baofu. 2005. *Beyond Capitalism to Post-Capitalism: Conceiving a Better Model of Wealth Acquisition to Supersede Capitalism*. NY: The Edwin Mellen Press.
- BCOS = Peter Baofu. 2010. *Beyond Cosmology to Post-Cosmology: A Preface to a New Theory of Different Worlds*. Cambridge, England: Cambridge International Science Publishing, Ltd.
- BDPD1 = Peter Baofu. 2004. Volume 1. *Beyond Democracy to Post-Democracy: Conceiving a Better Model of Governance to Supersede Democracy*. NY: The Edwin Mellen Press.
- BDPD2 = Peter Baofu. 2004. Volume 2. *Beyond Democracy to Post-Democracy: Conceiving a Better Model of Governance to Supersede Democracy*. NY: The Edwin Mellen Press.
- BEPE = Peter Baofu. 2011. *Beyond Ethics to Post-Ethics: A Preface to a New Theory of Morality and Immorality*. Charlotte, NC: Infomration Age Publishing.
- BNN = Peter Baofu. 2006. *Beyond Nature and Nurture: Conceiving a Better Way to Understand Genes and Memes*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- BWT = Peter Baofu. 2007. *Beyond the World of Titans, and the Renaking of World Order: A Preface to a New Logic of Empire-Building*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FAE = Peter Baofu. 2007. *The Future of Aesthetic Experience: Conceiving a Better Way to Understand Beauty, Ugliness and the Rest*. Cambridge, England: Cambridge Scholars Publishing, Ltd.

- FC = Peter Baofu. 2007. *The Future of Complexity: Conceiving a Better Way to Understand Order and Chaos*. London, United Kingdom: World Scientific Publishing Co.
- FCD = Peter Baofu. 2002. *The Future of Capitalism and Democracy*. MD: The University Press of America.
- FHC1 = Peter Baofu. 2000. Volume 1. *The Future of Human Civilization*. NY: The Edwin Mellen Press.
- FHC2 = Peter Baofu. 2000. Volume 2. *The Future of Human Civilization*. NY: The Edwin Mellen Press.
- FIA = Peter Baofu. 2008. *The Future of Information Architecture: Conceiving a Better Way to Understand Taxonomy, Network, and Intelligence*. Oxford, England: Chandos Publishing (Oxford) Limited.
- FPHC = Peter Baofu. 2004. *The Future of Post-Human Consciousness*. NY: The Edwin Mellen Press.
- FPHCHESS = Peter Baofu. 2010. *The Future of Post-Human Chess: A Preface to a New Theory of Tactics and Strategy*. Cambridge, England: Cambridge International Science Publishing, Ltd.
- FPHCT = Peter Baofu. 2009. *The Future of Post-Human Creative Thinking: A Preface to a New Theory of Invention and Innovation*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHE = Peter Baofu. 2009. *The Future of Post-Human Engineering: A Preface to a New Theory of Technology*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHEDU = Peter Baofu. 2011. *The Future of Post-Human Education: A Preface to a New Theory of Teaching and Learning*. Cambridge, England: Cambridge International Science Publishing, Ltd.
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- FPHK = Peter Baofu. 2008. *The Future of Post-Human Knowledge: A Preface to a New Theory of Methodology and Ontology*. Oxford, England: Chandos Publishing (Oxford) Limited.

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- FPHL = Peter Baofu. 2009. *The Future of Post-Human Language: A Preface to a New Theory of Structure, Context, and Learning*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHLAW = Peter Baofu. 2010. *The Future of Post-Human Law: A Preface to a New Theory of Necessity, Contingency, and Justice*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHMA = Peter Baofu. 2009. *The Future of Post-Human Martial Arts: A Preface to a New Theory of the Body and Spirit of Warriors*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHML = Peter Baofu. 2008. *The Future of Post-Human Mathematical Logic: A Preface to a New Theory of Rationality*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHMM = Peter Baofu. 2009. *The Future of Post-Human Mass Media: A Preface to a New Theory of Technology*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHO = Peter Baofu. 2009. *The Future of Post-Human Organization: A Preface to a New Theory of Communication, Decision-Making, and Leadership*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHP = Peter Baofu. 2010. *The Future of Post-Human Personality: A Preface to a New Theory of Normality and Abnormality*. Cambridge, England: Cambridge International Science Publishing, Ltd.
- FPHR = Peter Baofu. 2010. *The Future of Post-Human Religion: A Preface to a New Theory of Spirituality*. Cambridge, England: Cambridge International Science Publishing, Ltd.
- FPHS = Peter Baofu. 2010. *The Future of Post-Human Sexuality: A Preface to a New Theory of the Body and Spirit of Love-Makers*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHST = Peter Baofu. 2006. *The Future of Post-Human Space-Time: Conceiving a Better Way to Understand Space and Time*. New York: Peter Lang Publishing, Inc.
- FPHU = Peter Baofu. 2008. *The Future of Post-Human Unconsciousness: A Preface to a New Theory of Anomalous Experience*. Cambridge, England: Cambridge Scholars Publishing, Ltd.
- FPHUP = Peter Baofu. 2009. *The Future of Post-Human Urban Planning: A Preface to a New Theory of Density, Void, and Sustainability*. Cambridge, England: Cambridge Scholars Publishing, Ltd.

FPHWP = Peter Baofu. 2010. *The Future of Post-Human War and Peace: A Preface to a New Theory of Aggression and Pacificity*. Cambridge, England: Cambridge Scholars Publishing, Ltd.

• PART ONE •

Introduction

CHAPTER 1

INTRODUCTION—THE VALUE OF EDUCATION

If you think education is expensive, try ignorance.
—Derek Bok (QW 2010)

The Overvaluation of Education

Is education really so valuable that, in this information age of ours, there are many who believe that, as Derek Bok, ex-President of Harvard University, once put it, “if you think education is expensive, try ignorance”?

This overvaluation of education in our information age can be contrasted with an opposing idea in the anti-establishment circle that, as Maya Angelou, author of the popular novel *I Know Why the Caged Bird Sings*, once caught the attention when she wrote “that some people, unable to go to school, were more educated and more intelligent than college professors.” (BQ 2010)

Contrary to the two opposing sides of this debate on the nature of education (and other views as will be discussed in the book), the value of formal education (on one side of the controversy) and the importance of informal education (on the other side of the controversy) are neither possible nor desirable to the extent that their respective ideologues would like us to believe.

But one should not erroneously treat this challenge to the contrastive versions of the conventional wisdom on the future of education (and other views as will be clear later) as a suggestion that education is an useless endeavor, or that some fields of study (related to education) like philosophy, psychology, sociology, or even culture studies are to be dismissed. Surely, neither of these extreme views is reasonable either.

Instead, this book provides an alternative (better) way to understand the future of education, especially in the dialectic context of teaching and learning—while learning from different approaches in the literature but

without favoring any one of them (nor integrating them, since they are not necessarily compatible with each other). Thus, this book offers a new theory (that is, *the heterodox theory of education*) to go beyond the existing approaches in the literature on education in a new original way.

If successful, this seminal project is to fundamentally change the way that we think about education, from the combined perspectives of the mind, nature, society, and culture, with enormous implications for the human future and what I originally called its “post-human” fate.

The Different Faces of Education

A good starting point is to define, at the outset, the word “education,” which “is derived from *educare* (Latin) 'bring up,' which is related to *educere* 'bring out,' 'bring forth what is within,' 'bring out potential' and *ducere*, 'to lead.’” (WK 2010)

So, the word “education” in its broad sense refers to “any act or experience that has a formative effect on the mind, character or physical ability of an individual. In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another.” (WK 2010)

This definition aside—education has different faces to be considered. Although there can be many different faces of education, the following three suffice for illustration, namely, (a) the aims of education, (b) the process of education, and (c) the contents of education, as explained below and summarized in *Table 1.1*.

The Aims of Education

The first face of education has to do with its aims, which refer to the purposes or functions that education, as an intellectual endeavor, is supposed to have.

Surely, there can be many different aims of education, but the following five examples show us the often cited purposes or functions that education has been proposed to have: (WK 2010a)

- Ex: “preparation for political participation”
- Ex: “preparation for economic participation”
- Ex: “a product for use as social capital”
- Ex: “fulfillment of self-development”
- Ex: “development of character”

Of course, “[t]hese aims are not mutually exclusive and are often combined. For example, the enterprise of civil society depends on educating people to become responsible, thoughtful and enterprising citizens. This is an intricate, challenging task requiring deep understanding of ethical principles, moral values, political theory, aesthetics, and economics, not to mention an understanding of who children are.” (WK 2010a)

The Process of Education

The second face of education has to do with its process, which refers to the way in which education, as an intellectual endeavor, is supposed to be carried out.

Although there can be many different ways in which education can be carried out, the following two examples are most often cited in the literature, namely, (a) teaching (from the vantage point of a teacher) and (b) learning (from the vantage point of a student). (WK 2010)

Teaching

On one side of the process of education is teaching, where “[t]eachers need to understand a subject enough to convey its essence to students.” (WK 2010)

In the older days, teaching often meant “lecturing on the part of the teacher”; nowadays, however, teaching also consider “new instructional strategies such as team-based learning,” which “put the teacher more into the role of course designer, discussion facilitator, and coach and the student more into the role of active learner, discovering the subject of the course.” (WK 2010)

In either way, “the goal is to establish a sound knowledge base and skill set on which students will be able to build as they are exposed to different life experiences. Good teachers can translate information, good judgment, experience and wisdom into relevant knowledge that a student can understand, retain and pass to others.” (WK 2010)

Learning

On the other side of the process of education is learning, where students are supposed to receive knowledge from a teacher, and this can be done directly (e.g., by attending a class) and/or indirectly (e.g., by reading a book).

However, there are many different learning styles. For instance, “Joseph Renzulli recommended varying teaching strategies. Howard Gardner [1993] identified individual talents or aptitudes in his Multiple Intelligences theories. Based on the works of Jung, the Myers-Briggs Type Indicator and Keirseay Temperament Sorter focused on understanding how people's personality affects the way they interact personally, and how this affects the way individuals respond to each other within the learning environment. The work of David Kolb and Anthony Gregorc's Type Delineator follows a similar but more simplified approach.” (WK 2010; T. Armstrong 2010; KC 2010; AC 1996)

In any event, there are three major learning “modes,” as shown below: (WK 2010)

- “Visual”—“learning based on observation and seeing what is being learned.”
- “Auditory”—“learning based on listening to instructions/information.”
- “Kinesthetic”—“learning based on hands-on work and engaging in activities.”

Of course, there can be other learning modes, but these three suffice for the illustration at hand.

The Contents of Education

The third face of education has to do with its contents, which refer to the subject matter that a teacher should teach and a student should learn—in the broader relation to the aims and process of education.

But since different educators and scholars on education disagree about the contents of education over the ages, this raises the more important question about the foundation of education in the first place.

In other words, this then leads us to the theoretical debate on the nature of education (and its future), to which we now turn for further consideration in the next section.

The Theoretical Debate

For a more systematic analysis of the fundamental disagreements among different educators and scholars about the nature of education and its future, there are four main theoretical approaches in the debate to be summarized hereafter, and they can be called, in the absence of better words, namely, (a) the *teacher-centered* argument, (b) the *student-*

centered argument, (c) the *balanced* argument, and (d) the *heterodox* argument (which is my original contribution to the debate)—to be elaborated hereafter, respectively.

Lest misunderstanding occurs, two clarifications should be made here, as this is something that I regularly emphasize in my previous books, whenever a theoretical debate is summarized for a topic, *almost verbatim*.

Firstly, there can be other arguments (and theories within each) besides the first three here, that is, the “teacher-centered,” the “student-centered,” and the “balanced” arguments (as indicated above). The advantage to select these three here has to do with their illustrative representation of the diverse theories in the literature (which are deemed sufficient for the purpose at hand in this book).

And secondly, the three arguments are not necessarily mutually exclusive. For instance, those who advocate the “teacher-centered” argument can also consider the “student-centered” argument, although they do not focus on the latter.

And the reverse is also true, in that those who make the “student-centered” argument can also consider the “teacher-centered” argument, although they do not focus on the latter.

In other words, their disagreement is often one in degree, not in kind.

The Teacher-Centered Argument

With these two clarifications in mind—the first major theoretical approach is called, in the absence of better words, the *teacher-centered* argument, which focuses, relatively speaking of course, more on the role of a teacher in education.

Therefore, the word “teacher-centered” in the title of the argument is suggestive, because it refers to the focus on the role of a teacher in teaching his students.

Yet, the teacher-centered argument has different issues of concern, and different defenders of the argument offer their own distinctive stands on the issues, depending on their own interests.

For illustration, consider two often cited versions of the teacher-centered argument, namely, (a) liberal education, and (b) progressive education, in what follows, respectively.

Liberal Education

The term “liberal education” refers to a system of education which is to “provide...broad exposure to multiple disciplines and learning

strategies in addition to in-depth study in at least one academic area.” (WK 2010c)

Liberal education comes in all shapes and sizes; consider three different versions below, for illustration:

- Ex: “The Trivium”—this refers to “the study of grammar, logic, and rhetoric” (WK 2010b)
- Ex: “Educational Essentialism”—this refers to “an educational philosophy whose adherents believe that children should learn the traditional basic subjects” like “Reading, Writing, Literature, Foreign Languages, History, Mathematics, Science, Art, and Music.” (WK 2010e)
- Ex: “Educational Perennialism”—this refers to an educational philosophy whose advocates “believe that one should teach the things that one deems to be of everlasting importance to all people everywhere” like the ideas in the Great Books. (WK 2010f)

A clarification should be made here, in that “perennialism may appear similar to essentialism”—but “perennialism focuses first on personal development, while essentialism focuses first on essential skills....Both philosophies are typically considered to be teacher-centered, as opposed to student-centered philosophies of education....” (WK 2010f)

In any event, liberal education can be historically traced back to “the classical education movement...based in the traditions of Western culture, with a particular focus on education as understood and taught in the Middle Ages, with a further glance back to the Ancient Greek concept of *Paideia*.” (WK 2010b)

It was “first developed by Martianus Capella, and systematized by Petrus Ramus. Capella’s original goal was to provide a systematic, memorable framework to teach all human knowledge.” (WK 2010b)

Classical education so understood can be divided into three phases, as shown below: (WK 2010b)

- “Primary Education”—“teaches students how to learn,” on the basis of grammar, logic, rhetoric.
- “Secondary Education”—“then teaches a conceptual framework that can hold all human knowledge (history), and then fills in basic facts and practices of the major fields of knowledge, and develops the skills (perhaps in a simplified form) of every major human activity.”

- “Tertiary Education” —“then prepares a person to pursue an educated profession, such as law, theology, military strategy, medicine or science.”

In modern times, “Mortimer Adler and Robert Hutchins, both of the University of Chicago, ... set forth in the 1930s to restore the 'Great Books' of Western civilization to center stage in the curriculum. Although the standard classical works—such as the Harvard Classics—most widely available at the time, were decried by many as out of touch with modern times, Adler and Hutchins sought to expand on the standard 'classics' by including more modern works, and by trying to tie them together in the context of what they described as the 'Great Ideas,' condensed into a 'Syntopicon' index and bundled together with a new 'five foot shelf' of books as 'The Great Books of the Western World.’” (WK 2010b)

But for the critics, there are major problems with liberal education; consider two of them below for illustration.

Firstly, one criticism of liberal education is that, although “[t]hey were wildly popular during the Fifties, ... their popularity waned during the Sixties.” (WK 2010b)

This is especially so, when the critics of the “‘dead white males' (or 'dead white men,' 'dead white guys,' etc.) criticizes the emphasis on high culture in Western civilization in schools.... Critics of the traditional curriculum argued that it enshrined a world view that valued older European history....” (WK 2010d)

And secondly, another criticism of liberal education is that it does not give sufficient attention to the strengths of other forms of education (as will be introduced below).

Progressive Education

An alternative version of the teacher-centered argument has to do with “progressive education,” (or “learning by doing”), which refers to a system of education which values “the principle that humans are social animals who learn best in real-life activities with other people.” (WK 2010g)

For clarification, it must be stressed that “progressive education” is closely related to “experiential education,” in that “the former [progressive education] is the philosophy and the latter [experiential education] is the movement it informed (some might suggest it is still a current movement).” (WK 2010i) In addition, progressive education is also sympathetic to student-centered philosophies of education. (WK 2010f)

With this clarification in mind—“progressivists... claim to rely on the best available scientific theories of learning. Most progressive educators

believe that children learn as if they were scientists, following a process similar to John Dewey's model of learning," as shown below: (WK 2010g)

- "Become aware of the problem."
- "Define the problem."
- "Propose hypotheses to solve it."
- "Evaluate the consequences of the hypotheses from one's past experience."
- "Test the likeliest solution."

It is thus no wonder that, because of the focus on "real-world experiences and activities that center on the real life of the students," the "progressivist slogans are 'Learn by Doing!' and 'Learn by Discovery.'" (WK 2010g)

But for the critics, there are major problems with progressive education; consider two of them below for illustration.

Firstly, one criticism of progressive education is that it is closely tied with the American tradition of "pragmatism," which can contribute to relativist and immoral consequences.

For instance, "Bertrand Russell was especially known for his vituperative attacks" on pragmatism, or "on what he considered little more than epistemological relativism and short-sighted practicalism." (WK 2010h)

In fact, the American pragmatic tradition glorifies "what works," which has contributed to the infamous legacy of black slavery, the almost extermination of the Native Indians, the Monroe Doctrine for the domination and exploitation of Latin America, and the horrific use of the atomic bombs on the cities of Hiroshima and Nagasaki at the end of WWII, for instance.

And secondly, another criticism of progressive education is that it does not give sufficient attention to the strengths of other forms of education (like liberal education and others as will be introduced below).

The Student-Centered Argument

The second theoretical approach is called, in the absence of better words, the *student-centered* argument, which focuses, relatively speaking of course, more on the role of a student in education.

Therefore, the word "student-centered" in the title of the argument is suggestive, because it refers to the focus on the role of a student in learning.

Like the teacher-centered argument—the student-centered argument has different issues of concern, and different defenders of the argument offer their own distinctive stands on the issues, depending on their own interests.

For illustration, consider the student-centered argument in relation to (a) Montessori education, (b) Waldorf education, (c) democratic education, and (d) home education, as described below, respectively.

Montessori Education

The term “Montessori education” refers to “an approach to educating children based on the research and experiences of Italian physician and educator Maria Montessori (1870–1952).” (WK 2010j)

Montessori (1972 & 1998) focused on “what she referred to as 'the child's true normal nature' in 1907, which happened in the process of her experimental observation of young children given freedom in an environment prepared with materials designed for their self-directed learning activity. The method itself aims to duplicate this experimental observation of children to bring about, sustain and support their true natural way of being.” (WK 2010j; Standing, E. M. 1998)

Subsequently, “[t]he role of the teacher (sometimes called director, directress, or guide) is therefore to watch over the environment to remove any obstacles that would interfere with this natural development. The teacher's role of observation sometimes includes experimental interactions with children, commonly referred to as 'lessons,' to resolve misbehavior or to show how to use the various self-teaching materials that are provided in the environment for the children's free use.” (WK 2010j; Standing, E. M. 1998)

But for the critics, there are major problems with Montessori education; consider two of them below for illustration.

Firstly, one criticism of Montessori education is that it reflects more the personality of Montessori herself than a scientific confirmation of its claims.

For instance, “in *Maria Montessori: a Biography*, Rita Kramer [1976] reports that a New York Times writer interviewing Montessori in 1913 stated” in the following way: “The method is Montessori and Montessori is the method and one may well have grave doubts about how it will go with 'auto-education' when Maria Montessori's personality is removed.” (WK 2010j)

In other words, “this close association between the method and Dr. Montessori led to many conflicts and lack of collaboration to extend research into the method itself. For example, despite new insight and

greater knowledge available for applying the method in a scientific manner, the philosophical differences of personality and culture still exist to cloud and confuse its representation to the general public.” (WK 2010j; R. Kramer 1976; E. Hainstock 1997)

And secondly, another criticism of Montessori education is that it does not give sufficient attention to the strengths of other forms of education (like those as discussed before and others as will be introduced below).

Waldorf Education

The term “Waldorf education” refers to “a humanistic approach to pedagogy based upon the educational philosophy of the Austrian philosopher Rudolf Steiner, the founder of anthroposophy.” (WK 2010k)

Waldorf education focuses on “the role of the imagination, developing thinking that includes a creative as well as an analytic component. The educational philosophy’s overarching goals are to provide young people the basis on which to develop into free, moral and integrated individuals, and to help every child fulfill his or her unique destiny, the existence of which anthroposophy posits.” (WK 2010k; T. Nielsen 2004; R. Iannone 1999; R. McDermott 1996; B. Uhrmacher 1995)

But for the critics, there are major problems with Waldorf education; consider three of them below for illustration.

Firstly, one criticism of Waldorf education is that it remains Euro-centric.

For instance, “Waldorf schools have traditionally been numerically and culturally centered in Europe; the number of non-European schools has been slowly increasing, however, leading to a trend toward reinterpreting the formerly Euro-centric curriculum.” (WK 2010k)

Secondly, another criticism of Waldorf education is that it is uncritical to its own spiritual (religious) dogma.

For instance, “Waldorf education grows out of anthroposophy’s view of child development, which...includes the belief that humans possess an innate spirit that, having passed through previous lives, in the current life develops in a karmically appropriate environment before returning to the spirit world where it will prepare for a future reincarnation. Waldorf pedagogy views the teacher as having ‘a sacred task in helping each child’s soul and spirit grow.’” (WK 2010k; A. Giesenberg 2000)

This then led to “parents objecting that the role of anthroposophy in the educational method had not been disclosed to them, prior to enrollment. The pedagogy’s reliance on a single theory of child development has also been questioned and some Waldorf teachers’

uncritical attitude toward anthroposophy criticized.” (WK 2010k; T. Oppenheimer 1999)

Heiner Ullrich (1994) once rightly asked this critical question: “Can any solution be found to this fundamental paradox of Steiner’s pedagogy—the creation of a beneficial practice on the foundation of a dubious theory?”

And thirdly, another criticism of Waldorf education is that it does not give sufficient attention to the strengths of other forms of education (like those as discussed before and others as will be introduced below).

Democratic Education

The term “democratic education” refers to a democratic approach to education which does not have “compulsory uniform curricula.” (WK 2010l)

It is often said that “the first major writer to discuss a nascent theory of democratic education was Leo Tolstoy who operated his own democratic school for peasant children in Yasnaya Polyana, Russia in the late 19th century.” (WK 2010l)

In general, “[democratic] schools place emphasis on learning as a natural product of all human activity. They assume that the free market of ideas, free conversation, and the interplay of people provide sufficient exposure to any area that may prove relevant and interesting to individual students. Students of all ages learn together; older students learn from younger students as well as vice versa. Students of different ages often mentor each other in social skills.” (WK 2010l)

In “democratic schools, students are given responsibility for their own education. There is no pressure, implicitly nor explicitly, on students by staff to learn anything in particular. Students are given the right and responsibility to choose what to do with their time and attention. Because the curricula are different for each student, democratic schools do not compare or rank students.” (WK 2010l)

In fact, “[a] striking feature of democratic schools is the ubiquity of play. Students of all ages—but especially the younger ones—often spend most of their time either in free play, or playing games (electronic or otherwise). No attempt is made to limit, control or direct the play—it is seen as activity every bit as worthy as academic pursuits, often even more valuable. Play is considered essential for learning, particularly in fostering creativity. The pervasiveness of play has led to a recurring observation by first-time visitors to a democratic school that the students appear to be in perpetual ‘recess.’” (WK 2010l; D. Greenberg 2010)

But for the critics, there are major problems with democratic education; consider three of them below for illustration.

Firstly, one criticism of democratic education is that it is ideologically driven by the ideal of the “free market of ideas.”

By analogy, the free market in capitalism has its inherent problems (e.g., business cycles, negative externalities, monopolies, injustice, spiritual crisis, etc.), as this is something that I already went to great lengths to explain in *Beyond Capitalism to Post-Capitalism* (2005) and *The Future of Capitalism and Democracy* (2002)—and the same can be said about the free market in democratic education, whose ideal remains a romantic myth.

Secondly, another criticism of democratic education is that it is uncritical to the assumption about the nature of “play” in education.

In *The Future of Post-Human Creative Thinking* (2009), I already went to great lengths to explain how and why creativity is neither possible nor desirable to the extent that its ideologues would like us to believe.

And thirdly, another criticism of democratic education is that it does not give sufficient attention to the strengths of other forms of education (like those as discussed before and others as will be introduced below).

Home Education

The term “home education” (also known as “homeschooling,” “homeschool,” or “home learning”) refers to “the education of children at home, typically by parents but sometimes by tutors, rather than in other formal settings of public or private school.” (WK 2010m)

The term “home schooling” is sometimes confused with a related term “unschooling,” but the two are not exactly identical, although they are related. The reason is that “unschooling” is a version of “home schooling,” in that “a curriculum-free philosophy of homeschooling may be called unschooling, a term coined in 1977 by American educator and author John Holt in his magazine *Growing Without Schooling*.” (WK 2010m)

With this distinction between “unschooling” and “home schooling” in mind—“homeschooling is a legal option in many places for parents to provide their children with a learning environment as an alternative to publicly-provided schools. Parents cite numerous reasons as motivations to homeschool, including better academic test results, poor public school environment, improved character/morality development, and objections to what is taught locally in public school. It may be a factor in the choice of parenting style. It is also an alternative for families living in isolated rural locations or living temporarily abroad.” (WK 201m)

But for the critics, there are major problems with home education; consider four of them below for illustration.

Firstly, one criticism of home education is that the student in question can instead end up being poorly educated.

For instance, “Stanford University political scientist professor Rob Reich...wrote in 'The Civic Perils of Homeschooling' (2002) that homeschooling can potentially give students a one-sided point of view, as their parents may, even unwittingly, block or diminish all points of view but their own in teaching. He also argues that homeschooling, by reducing students' contact with peers, reduces their sense of civic engagement with their community.” (WK 2010m)

Secondly, another criticism of home education is that the studies which show that “homeschooled students can do well on standardized tests” are “biased,” because “some of these studies compare voluntary homeschool testing with mandatory public-school testing.” (WK 2010m; K. Pfleger 1998)

Thirdly, still another criticism of home education is that it can also lead to “unmonitored child abuse.” (WK 2010m)

For instance, “a Washington, D.C. mother who had withdrawn her four children from public school has been charged with their murder [in 2008]. It has been claimed that the homeschooling exemption in the District of Columbia allowed the abuse of the children to occur undetected.” (WK 2010m; J. Gross 2008)

And fourthly, one more criticism of home education is that it does not give sufficient attention to the strengths of other forms of education (like those as discussed above).

The Balanced Argument

The third theoretical approach is called, in the absence of better words, the *balanced* argument, which focuses, relatively speaking of course, more on combining both the teacher-centered and student-centered arguments.

In this sense, the word “balanced” in the title of the argument is suggestive, because it refers to the extent of considering both the teacher-centered and student-centered arguments without exclusively emphasizing the role of the teacher or that of the student in education.

For illustration, consider the Socratic method as a good illustration of the balanced argument in action, as shown below.

The Socratic Method

The term “Socratic method” (also known as “method of Elenchus” or “Socratic debate”) is named “after the Classical Greek philosopher Socrates” and refers to “a form of inquiry and debate between individuals with opposing viewpoints based on asking and answering questions to stimulate critical thinking and to illuminate ideas.” (WK 2010n)

The Socratic method is thus “a dialectical method, often involving an oppositional discussion in which the defence of one point of view is pitted against the defence of another; one participant may lead another to contradict him in some way, strengthening the inquirer's own point. (Think about the question before you speak.)” (WK 2010n)

In this sense, the Socratic method does not explicitly favor the teacher or the student in an intellectual exchange, as both sides have their own role to play for the pursuit of truth.

Above all, “the Socratic method is a negative method of hypothesis elimination, in that better hypotheses are found by steadily identifying and eliminating those that lead to contradictions. The Socratic method searches for general, commonly held truths that shape opinion, and scrutinizes them to determine their consistency with other beliefs.” (WK 2010n)

In the end, as W. K. C. Guthrie argued in *The Greek Philosophers* (1989), “the Socratic method was actually intended to demonstrate one's ignorance. Socrates, unlike the Sophists, did believe that knowledge was possible, but believed that the first step to knowledge was recognition of one's ignorance.” (WK 2010n)

As Guthrie wrote, “[Socrates] was accustomed to say that he did not himself know anything, and that the only way in which he was wiser than other men was that he was conscious of his own ignorance, while they were not. The essence of the Socratic method is to convince the interlocutor that whereas he thought he knew something, in fact he does not.” (WK 2010n)

This demonstration of one’s own ignorance in the Socratic method “is widely used in contemporary legal education by most law schools in the United States. In a typical class setting, the professor asks a question and calls on a student who may or may not have volunteered an answer. The professor either then continues to ask the student questions or moves on to another student.” (WK 2010n)

In psychotherapy, “the Socratic method has been adapted,...most prominently in Classical Adlerian Psychotherapy, Cognitive Therapy and Reality Therapy. It can be used to clarify meaning, feeling, and consequences, as well as to gradually unfold insight, or explore alternative actions.” (WK 2010n; J. Overholser 1996)

But for the critics, there are major problems with the Socratic method; consider four of them below for illustration.

Firstly, one criticism of the Socratic method is that “there is...more often...no clear answer at all” at the end of any Socratic questioning, and this is especially true in contemporary legal education. (WK 2010n)

Secondly, another criticism of the Socratic method is that reasoning by itself does not necessarily lead to knowledge, freedom, or happiness.

For instance, Isaiah Berlin (1969:144,152-4) precisely made this critical point in a famous passage: “This is the positive doctrine of liberation by reason....I must assume that if the law I impose is rational (and I can only consult my own reason) it will automatically be approved by all the members of my society so far as they are rational beings. For if they disapprove, they must, *pro tanto*, be irrational; then they will need to be repressed by reason: whether their own or mine cannot matter, for the pronouncements of reason must be the same in all minds...If this leads to despotism, albeit by the best or the wisest..., can it be that there is something amiss in the premises of the argument?...Can it be that Socrates and the creators of the central Western tradition...who followed him have been mistaken, for more than two millennia, that virtue is not knowledge, nor freedom identical with either? That despite the fact that it rules the lives of more men than ever before in its long history, not one of the basic assumptions of this famous view is demonstrable, or, perhaps, even true.”

Thirdly, still another criticism of the Socratic method is that reasoning by itself does not answer some deep questions in religion or ethics.

For instance, Soren Kierkegaard in his 1843 book titled *Fear and Trembling* published in 1843 under the pseudonym Johannes de silentio (John the Silent) told the story of Abraham's willingness to sacrifice Isaac to make the case of fideism., because “to the eyes of a non-believer,...it must necessarily have appeared to be an unjustifiable attempted murder, perhaps the fruit of an insane delusion,” but for Kierkegaard, “to believe in the incarnation of Christ, in God made flesh, was to believe in the 'absolute paradox,' since it implies that an eternal, perfect being would become a simple human. Reason cannot possibly comprehend such a phenomenon; therefore, one can only believe in it by taking a 'leap of faith.’” (WK 2010o)

In the same spirit, it is fitting, at this juncture, to remember that “Aristotle also claimed that this [Socratic] method is not suitable for ethics.” (WK 2010n)

And fourthly, one more criticism of the Socratic method is that it does not give sufficient attention to the strengths of other forms of education (like those as discussed above).

The Heterodox Argument

And fourthly, unlike the previous three arguments (viz., the teacher-centered, the student-centered, and the balanced)—the fourth one to be introduced here can be called, in the absence of better words again, the *heterodox* argument, which learns from all other theoretical approaches (which include the three previous arguments and also other examples as will be introduced in the rest of this book), without, however, favoring any of them, nor trying to integrate them (as they are not necessarily compatible with each other, as the introduction of the theoretical debate in the previous sub-sections has shown).

The Heterodox Theory of Education

My *heterodox* argument can be more precisely called *the heterodox theory of education*, since it is to propose a new theory of education.

The word “heterodox” is defined, in a formal definition, as being “contrary to or different from an acknowledged standard, a traditional form, or an established religion: unorthodox, unconventional <heterodox ideas>.” (MWD 2010)

In accordance to this formal definition, my argument is “heterodox” because it provides an unconventional way to understand education, and my heterodox theory of education has four distinctive features to remember.

Firstly, my theory makes good use of all theoretical approaches in the literature on education, be they about the teacher-centered argument, the student-centered argument, or the balanced argument—especially from the most comprehensive combined perspectives of the mind, nature, society, and culture (as will be clear in Chapter Two and Chapter Three).

Secondly, just like many other theories of mine in my previous books, my theory here does not heavily favor any specific theory over others in the literature, nor trying to integrate them (as they are not necessarily compatible with each other).

Thirdly, my theory treats the issue of education in the distinctive dialectic context of teaching and learning—especially in the larger dialectic context of no teaching without learning (or differently put, no teacher-centeredness without student-centeredness), and vice versa, together with the subsequent transcendence of both.

And fourthly, it contains sixteen major theses, namely, (a) the first thesis: the absoluteness-relativeness principle, (b) the second thesis: the predictability-unpredictability principle, (c) the third thesis: the

explicability-inexplicability principle, (d) the fourth thesis: the preciseness-vagueness principle, (e) the fifth thesis: the simpleness-complicatedness principle, (f) the sixth thesis: the openness-hiddenness principle, (g) the seventh thesis: the denseness-emptiness principle, (h) the eighth thesis: the slowness-quickness principle, (i) the ninth thesis: the expansion-contraction principle, (j) the tenth thesis: the theory-praxis principle, (k) the eleventh thesis: the convention-novelty principle, (l) the twelfth thesis: the evolution-transformation principle, (m) the thirteenth thesis: the symmetry-asymmetry principle, (n) the fourteenth thesis: the regression-progression principle, (o) the fifteenth thesis: the sameness-difference principle, and (p) the sixteenth thesis: the post-human rebellion—to be elaborated in the rest of the book, with a summary in the concluding chapter.

Of course, as this is something that I often emphasized in my previous books, other principles (besides the 15 as cited above) are also relevant, but these 15 are the most relevant in the current case study (in terms of the number of citations of each principle in the book).

Even then, in some cases, the difference between any two given principles, for instance, in terms of the number of citations in a book, is rather small, so the reason in those cases is more aesthetic (than otherwise), because it looks nicer to list only 15 theses for 15 principles (than 21 theses for all of the 21 principles) in the Table of Contents.

This is true, even if different studies of the same kind can yield different views about the degree of relevance for each principle, depending on the specific nature of a research in question, needless to say. So, if a different author analyzes the same subject matter in a different way, the relevance of the principles will be different.

With this clarification in mind—the seminal project here, if successful, will fundamentally change the way that we think about education, from the combined perspectives of the mind, nature, society, and culture, with enormous implications for the human future and what I originally called its “post-human” fate.

Theory and Meta-Theory

The *heterodox* argument, or *the heterodox theory of education*, presupposes some kind of meta-theory, in special relation to methodology and ontology—just as all theories, either explicitly or implicitly, require their own versions of meta-theory.

In my case, I already proposed (in my previous books) my distinctive approach to methodology (known as “sophisticated methodological holism”) and ontology (known as “existential dialectics”).

The next two sections are to introduce my meta-theory—that is, existential dialectics and sophisticated methodological holism, respectively—to be repeated, *often verbatim* (with only a few updated revisions), from my previous works, as this is something that I often do in each new book of mine as an introduction to some background information for the convenience of the readers.

A Unified Theory of Everything

In the end, my distinctive approach to meta-theory serves as a foundation to unify all domains of knowledge for an overarching understanding of all forms of reality (by way of some ontological principles at the meta-theoretical level and the comprehensive perspectives of the mind, nature, society, and culture at the theoretical level—as will be explained in the next two sections).

This is so, without committing the sins of reductionism and reverse-reductionism (as often seen in many holistic approaches, with the fad of systems approach as a most recent notorious example, as already critically explained in *The Future of Post-Human Formal Science*, or *FPHFS*), since my distinctive approach makes good use of different schools of thought without favoring any of them nor trying to integrate them (as they are not necessarily compatible with each other), so as to include (or adjust for) heterogeneity, conflict, subjectivity, and complexity, for example.

In this sense, the word “unified” does not have to mean an integrative approach, in a narrow sense, nor a systems approach, in a broad one, both of which I have critically rebuked (in my previous books), while learning from them.

This overarching project (consisting of numerous theories of mine, as will be summarized in the next section), thus, constitutes my grand unified theory of everything in the world and beyond.

The Logic of Existential Dialectics

To start, the ontology of existential dialectics can be summarized in this section—*often verbatim* (with only a few updated revisions), from my previous works, as this is something that I regularly do in each new book of mine as an introduction to some background information for the convenience of the readers.

After all, this book, like all others of mine, is in conversation with all previous ones of mine, for the final aim to converge all of them into a larger grand project on the future of intelligent life, both here on earth and there in deep space unto multiverses.

The summary can be organized in relation to (a) the conception of existential dialectics (or its ontics), (b) the syntax of existential dialectics (or its ontomethodology and ontologic), (c) the semantics of existential dialectics (or its ontosemantics), and (d) the pragmatics of existential dialectics (or its ontopragmatics), respectively hereafter—again *often verbatim*.

This means that, for those readers who had read some of my previous books, the summary below is really not much new (*almost verbatim*, with only some updated revisions).

But for those who have never read my previous books, it is a good review of them.

The Conception of Existential Dialectics (or Its Ontics)

This ontology was originally designated as “existential dialectics” in *Beyond Capitalism to Post-Capitalism* (herein abbreviated as *BCPC*), although it was already analyzed in other books of mine like the 2 volumes of *The Future of Human Civilization* (*FHC*), *The Future of Capitalism and Democracy* (*FCD*), *The Future of Post-Human Consciousness* (*FPHC*), and the 2 volumes of *Beyond Democracy to Post-Democracy* (*BDPD*).

Lest any confusion occurs, it is important to stress at the outset that the word 'existential' in “existential dialectics” has nothing to do with Existentialism, which I rebuked in *FHC*, *FCD*, and also *FPHC*. Instead, the word here merely refers to the existence of intelligent life (both primitive and advanced) in a broad sense.

Some Basic Concepts

The conception of existential dialectics (or its ontics) makes use of different concepts (like “sets,” “elements,” “relations,” “operations,” “functions,” “truth values,” “axioms,” “postulates,” and “principles”—as shown in *Table 4.3*), which are important for the understanding of any logic of ontology.

That clarified—existential dialectics, as a language of ontology, can be analyzed in different ways that a language, as an analogy, is often analyzed, namely, in relation to phonology (“the study of patterns of a language’s sounds”), phonetics (“the study of the physical aspects of sounds of human language”), morphonology (“the study of the internal

structure of words”), syntax (“the study of how words combine to form grammatical sentences”), semantics (“the study of the meaning of words [lexical semantics] and fixed word combinations [phraseology]”), and pragmatics (“the study of how utterances are used...literally, figuratively, or otherwise...in communicative acts”). (WK 2007)

But since my theory of existential dialectics makes use of the English language for communication here, it does not propose a new way to make the patterns of a language’s sounds (as in phonology), to study the physical aspects of sounds (as in phonetics), or even to strive for a new organization of the internal structure of words for the English language (as in morphonology).

For this reason, the language of existential dialectics to be analyzed hereafter is not concerned with the phonological, phonetic, and morphonological aspects of the English language. Instead, the analysis will explore the syntax, semantics, and pragmatics of existential dialectics as a language of ontology to improve our understanding of reality.

The Ontic Dispute

But first, there is an ontic dispute to be addressed, which is related to what I called “the dilemma of ontology” as introduced earlier in *Sec. 1.4 of The Future of Post-Human Knowledge (FPHK)*.

A good point of departure concerns what I want to call *the ontic dispute*, on how to understand the very nature of ontology.

Traditionally, scholars in the field used to study the conception of ontology in terms of its entities (e.g., material objects, abstract numbers), properties (e.g., duration, plurality), and relationships (e.g., causation).

This is a good starting point, but it suffers from different problems. Consider three examples of bias below, which are quite common in the literature, and the recent version (of treating concepts and principles in ontology on the basis of “plurality,” “dynamism,” “duration,” “interaction,” “life,” “consciousness,” and “volition”) by Reginald Firehammer (2005) only constitutes a latest addition to this old (impoverishing) tradition.

Firstly, the classification of entities, properties, and relationships is too material-centric, in often focusing more on the existence of material entities than on non-material ones.

Secondly, the classification is too anthro-centric, in often favoring the factor of human agency in depicting reality.

And lastly, the classification is too confused among the three categories relating to each other, in often lumping them together without

adequate consideration of their intricately interrelationships (both in relation to each and in relation to all).

A good alternative is precisely what I want to offer in this debate, that is, a new classification of ontological entities, properties, and their relationships in terms of *method*, *structure*, *process*, *agency*, and *outcome* instead. Let me explicate what these words mean below.

In relation to “method”—it concerns how ontology is to be studied. In this sense, the word 'method' here should not be confused with the different usage of the same term 'method' as a technique of investigation in the context of methodology (as already introduced in *Sec. 1.2 of FPHK*).

In relation to “structure”—it concerns what the general patterns of entities, properties, and relationships are.

In relation to “process”—it concerns how these general patterns change over time.

In relation to “agency”—it concerns how agency affects any change of these general patterns over time (without putting, however, too much emphasis on the role of human agency).

And in relation to “outcome”—it concerns what the outputs of this change over time are.

The Syntax of Existential Dialectics (or Its Ontomethodology and Ontologic)

The syntax of existential dialectics, analogously speaking, refers here to the structure of an ontology which can be studied by way of combining ideas into complex relationships like ontological principles to depict reality in the world—and can be analyzed in seven sub-sections, namely, (a) the selection criteria, (b) further clarifications on classification, (c) ontomethodology, (d) ontologic, (e) the principles as short cuts, (f) the principles as family resemblances, and (g) the dialectic constraints imposed by the principles, respectively hereafter.

The Selection Criteria

To start, not any pair of relationship can be chosen as an ontological principle in existential dialectics; otherwise, there could be billions of them under the sky.

Four illustrations below suffice to clarify this point.

(a) Firstly, an ontological principle cannot *overlap* with other principles, in that it is too closely related with other ones.

Of course, one cannot totally rule out any relationship between two entities, especially in a complex world of everything being linked to everything else—but the comparison here is relative, not absolute.

In this sense, the flexibility-inflexibility pair cannot be an ontological principle, since it has something closely in common with other ones (like the simpleness-complicatedness principle, for instance).

As an illustration, something which is flexible in interpretation is more likely to allow multiple viewpoints and thus makes the overall picture more complicated than otherwise (simple).

(b) Secondly, an ontological principle cannot be *redundant* in relation to other principles, in that it somehow duplicates other principles.

In this sense, for instance, the directness-indirectness pair cannot be an ontological principle, because it somehow duplicates other ontological principles (like the preciseness-vagueness principle, for instance).

As an illustration, something which is direct means to be right to the point and does not need to go to an unnecessarily long loop—so it is less vague, in being clearer about the thing in question.

(c) Thirdly, an ontological principle cannot be *derived* from other ones—as if it is a child-parent relationship.

In this sense, the convenience-inconvenience pair cannot be an ontological principle, because it can be derived from other ones (like the slowness-quickness principle, for instance).

For instance, something which is convenient already implies that it can be obtained quickly (rather than slowly)—all things considered.

(d) And fourthly, an ontological principle cannot be *trivial* (or *parochial*)—as if it is only one component competing with other ones for inclusion in a set.

In this sense, the consistency-inconsistency pair cannot be an ontological principle, because its validity is limited (or parochial), as it can be easily challenged and replaced by opposing major (not minor) theories (e.g., the correspondence theory of truth, the pragmatic theory of truth, the semantic theory of truth, the disclosedness theory of truth, and whatnot), not just in accordance to the consistency theory of truth (for consistency).

In this sense, the consistency argument is only one among different opposing arguments in relation to the logic of what constitutes “truth.”

Although these examples are not exhaustive, they illustrative the selectiveness of any ontological principle to be existentially dialectic.

Further Clarifications on Classification

Lest any misunderstanding carelessly occurs, some further clarifications on classification should be made here (and summarized in *Table 4.8*).

(a) Firstly, the total number of ontological principles is unknown, to be discovered later, as our knowledge of the world becomes more advanced.

Consequently, the principles as introduced in my books are not exhaustive, with new ones being added, whenever more of them are discovered in later research.

At least, future generations can pick up where I leave off and continue the discovery.

In this sense, my work should be treated as a pioneering effort for the development of a systematic, comprehensive analysis of a new general ontology for the future of knowledge.

(b) Secondly, the principles are not rigidly classified, as they can be reclassified in a different way.

For instance, the preciseness-vagueness principle is classified under the category of “structure” but can be reclassified under the category of “method,” although in so doing, it has a different meaning in the context of method.

The same logic applies to the same-difference principle under the category of “outcome,” which can be reclassified under the category of “structure,” although in so doing, once more, it has a different meaning in the context of structure.

(c) Thirdly, the principles are to be understood together, not that each principle is to be treated independently of others. After all, the principles are mutually constraining, in that they work together as a whole.

(d) Fourthly, the principles are relevant to all subject matters, but some principles are, relatively speaking of course, more useful to some subject matters than others under certain conditions—as implied in the symmetry-asymmetry principle.

(e) And fifthly, the principles constitute only two levels of analysis, this time, at the ontological and methodological levels—while other levels of analysis (from the perspectives of the mind, nature, society, and culture) are also needed, in order to understand reality in its totality (as explained in the section on “sophisticated methodological holism,” so as to avoid the dual dangers of reductionism and reverse-reductionism).

Ontomethodology

With these selection criteria and clarifications in mind—the syntax of existential dialectics can be divided into two main smaller sections for analysis, since they are related to each other in the context of some fundamental principles, that is, (a) ontomethodology and (b) ontologic, to be addressed hereafter, respectively.

In the context of ontomethodology, some ontological principles are proposed here in relation to the nature of methodology, which however is tied up with the general issue of ontology in the context of knowledge.

In this sense, ontomethodology (in the context of these ontological principles in the category of method) are related with ontologic in general (in the context of ontological principles in general).

Some good instances of ontological principles involving ontomethodology include the formalness-informalness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the partiality-totality principle, and the absoluteness-relativeness principle, which will be introduced in conjunction with ontological principles in the ontologic of existential dialectics in general hereafter.

Ontologic

With this clarification of the relationship between ontomethodology and ontologic in mind (which is comparable to the relationship between methodology and ontology as described in *Sec. 1.3* of *FPHK*)—the first three principles in existential dialectics were introduced in *BCPC*. And more principles were later added to the logic in my subsequent books (like *FC*, *FAE*, and others).

More specifically, in *BCPC*, I proposed three principles (based on previous works of mine, not just something out of the blue) for the ontological logic, namely, (a) the regression-progression principle on the direction of history, (b) the symmetry-asymmetry principle on the relationships among existents, and (c) the change-constancy principle on the alteration of things—or in a more elegant term, the dynamics of space-time (in *FC*).

In *The Future of Complexity (FC)*, I added three more principles, on top of the three aforementioned, namely, (d) the partiality-totality principle on the relationships between the parts and the whole, (e) the order-chaos principle on the pattern of things, and (f) the predictability-unpredictability principle on the occurrence of things—as part of the ontological logic of existential dialectics.

In *The Future of Aesthetic Experience* (or simply *FAE*), another principle is added, namely, (g) the evolution-transformation principle (on the multiple kinds of agency).

Also in *FAE*, I then reclassified the 7 principles into four categories, namely, (i) in relation to method, for the partiality-totality principle and the predictability-unpredictability principle, (ii) in relation to process, for the change-constancy principle and the order-chaos principle, (iii) in relation to agency, for the symmetry-asymmetry principle and the evolution-transformation principle, and (iv) in relation to outcome, for the regression-progression principle.

In *The Rise of Authoritarian Liberal Democracy (ALD)*, I added two more principles, namely, (h) the softness-hardness principle on the force of agency (which is to be classified under the category about agency) and (i) the same-difference principle on the metamorphosis of change (which is to be classified under the category about outcome).

In *The Future of Information Architecture (FIA)*, I introduce three additional principles, that is, (j) the simpleness-complicatedness principle on the interconnection among things, (k) the preciseness-vagueness principle on the refinement of things, and (l) the slowness-quickness principle on the speed of change—with the first two in relation to structure and the third in relation to process.

In *The Future of Post-Human Unconsciousness (FPHU)*, I added three more principles, that is, (m) the openness-hidden principle on the detection of things, in relation to structure, (n) the explicability-inexplicability principle on the underlying mechanisms of things, in relation to method, and (o) the expansion-contraction principle on the growth of things, in relation to process.

In *The Future of Post-Human Knowledge (FPHK)*, I added one more principle, that is, (p) the absoluteness-relativeness principle on the multiplicity of entities, in relation to method.

In *The Future of Post-Human Mathematical Logic (FPHML)*, I added one more principle, that is, (q) the formalness-informalness principle on the formal requirements of systems, in relation to method.

In *The Future of Post-Human Engineering (FPHE)*, I added one more principle, that is, (r) the theory-praxis principle on the duality of knowledge, in relation to agency.

In *The Future of Post-Human Creative Thinking (FPHCT)*, I added one more principle, that is, (s) the convention-novelty principle on the nature of creative thinking, in relation to agency.

In *The Future of Post-Human Geometry (FPHG)* here, I added one more principle, that is, (t) the finiteness-transfiniteness principle on the nature of numbers, in relation to structure.

And in *The Future of Post-Human Urban Planning (FPHUP)*, I added one more principle, that is, (u) the denseness-emptiness principle on the distribution of entities in space, in relation to structure.

With this update, there are twenty-one principles so far in existential dialectics, that is, five principles for the category in relation to method (viz., the formalness-informalness principle, the partiality-totality principle, the predictability-unpredictability principle, the explicability-inexplicability principle, and the absoluteness-relativeness principle), five principles for the category in relation to structure (viz., the finiteness-transfiniteness principle, the simpleness-complicatedness principle, the preciseness-vagueness principle, the openness-hiddenness principle, and the denseness-emptiness principle), four principles for the category in relation to process (viz., the change-constancy principle, the slowness-quickness principle, the order-chaos principle, and the expansion-contraction principle), five principles for the category in relation to agency (viz., the theory-praxis principle, the convention-novelty principle, the symmetry-asymmetry principle, the evolution-transformation principle, and the softness-hardness principle), and two principles for the category in relation to outcome (viz., the regression-progression principle and the same-difference principle).

There are thus twenty-one principles in existential dialectics—so far (as summarized in *Table 4.4*).

The Principles as Short Cuts

Yet, these principles should be treated with caution, lest misunderstanding occurs, since they do not constitute rigid dualities (or dichotomies).

The reason is that each pair in an ontological principle consists of two opposites, which are, however, merely short cuts both for multiple variations and degrees, as well as for different interactions with multiple other entities unlike them.

In this light, each pair can end up having hundred (or even thousand, if not more) different versions, which interact with hundred (or even thousand, if not more) other entities—as summarized in *Table 4.5*.

There are two clarifications here.

Firstly, this conception of shortcuts is not mutually exclusive nor absolute, in that the opposites can come in all shapes and sizes, with different degrees. For instance, by analogy, just as there are different

degrees of the two colors “white” and “black”—there are likewise different degrees of the opposites in each ontological pair, to the extent that there can be multiple entities (not only two) interacting with each other in each pair.

And secondly, this conception of shortcuts do not ignore other possible entities in interacting with the two opposites (with their different versions) in each pair. For instance, by analogy, there are not only the two colors “white” and “black” as opposites, since there are other colors too besides them like “yellow,” “green,” “purple,” or else. The same logic can be applied to each ontological pair, in that they also interact with other entities, not with only two of them (with their different versions).

Therefore, with these two clarifications in mind—each pair in an ontological principle serves only as an abbreviation for something more complicated and, therefore, although it contains two opposites, it should not be confused as a duality (dualism).

Existential dialectics rejects any dualism (or dichotomy) as too rigid and instead allows the multiplicity of entities, to the extent that between the two opposites in each pair exist many other alternatives to choose from. They are named in that short form for aesthetic elegance only, instead of listing all possible entities between the two opposites in the title (which would be too cumbersome and sound extremely awkward).

To be dialectic is to go beyond any rigid dichotomy and transcend into something different altogether in the long haul. One may be tempted to call the dialectic logic here with a different name like existential “multilectics” (instead of “dialectics”), but this naming is incorrect (or even misleading), for the two reasons aforesaid.

After all, all the possible entities between any two opposites in an ontological pair are still about the two opposites, although each ontological pair come in all shapes and sizes (with different degrees) and do not exist by themselves but also interact with other entities unlike them. The virtue of revealing an ontological pair is to show how they relate within themselves (in multiple versions) and also interact with others unlike them (also in multiple versions).

This will be clear in a later sub-section titled “the dialectic constraints imposed by the principles.”

The Principles as Family Resemblances

In addition, each ontological principle is generic, with some other comparable ontological pairs to be put in the same family (like a *family resemblance*)—as summarized in *Table 4.6*.

Ludwig Wittgenstein (1953) once suggested the idea of “family resemblance” in explaining different games classified under the same family called *games*.

Why should, for instance, playing football and chess as playing “games,” when it is well understood that football is not the same as chess? The answer is that, although each game is different and has different rules, many of them (though not all) share, more or less, some commonalities (e.g., scoring as necessary for winning).

And this is so, even though some games share more than some others in any given selection of criteria, and no two games are exactly identical. So, Wittgenstein’s point here is that there is no essential core which is common to all games, and the best that one can look for is some characteristics which are common to many (but not all) games. (A. Biletzki 2006)

(a) Appropriate Family Resemblances

In the context of existential dialectics, I want to distinguish two types of family resemblances, and, in the absence of better words, let me call them (a) *appropriate* family resemblances and (b) *inappropriate* family resemblances.

In regard to appropriate family resemblances—good examples include some of the pairs as already explained in an earlier section on selection criteria, like the flexibility-inflexibility pair, which can be put in the family resemblance of the simpleness-complicatedness principle, although the two pairs are not exactly identical. Likewise, the directness-indirectness pair can be put in the family resemblance of the preciseness-vagueness principle, although, again, the two pairs are not exactly identical.

In this sense, which specific pair in a family should be used to designate the name of the family can be at times a bit arbitrary, but with good reason.

For illustration, in the context of method, the partiality-totality principle can take the different form like individualisticness-holisticness, just as the explicability-inexplicability principle can take the different form like underlyingness-regularness—although each two pairs are not exactly identical and have slightly different meanings and usages.

A more comprehensive listing of this family resemblance for all other principles is shown in *Table 4.6* on the syntax of existential dialectics.

In fact, this section on family resemblances overlaps with the semantics of existential dialectics, which will be introduced later in the next section (and summarized in *Table 4.11*).

(b) Inappropriate Family Resemblances

However, there are some family resemblances which are not appropriate, and let me distinguish two of them by calling them, in the absence of better words, (b1) *inadequate* family resemblances and (b2) *compound* family resemblances (as summarized in *Table 4.10*).

(b1) In regard to “inadequate” family resemblances—there are some pairs which are not adequate, because they fail the test of selection criteria (as already pointed out in an earlier section), especially in relation to the criterion of not being *trivial* (or *parochial*)—as if it is only one component competing with other ones for inclusion in a set.

For instance, the *consistency-inconsistency* pair is inadequate, because it is only one component competing with other ones for inclusion in the larger set of the formalness-informalness principle (like the *completeness-incompleteness* pair and the *soundness-unsoundness* pair, as discussed in my book titled *The Future of Post-Human Mathematical Logic*, or *FPHML* in short).

The same is true for the *cognition-noncognition* pair, which overlaps with both the completeness-incompleteness pair and the soundness-unsoundness pair in the larger set of the formalness-informalness principle.

(b2) In regard to “compound” (or non-atomic) family resemblances—there are some pairs which are not appropriate for a different reason, because they fail the test of selection criteria (as already pointed out in an earlier section), especially in relation to the criterion of not *overlapping* with other principles, in that it is too closely related with other ones.

For instance, the *normality-abnormality* pair is compound (and thus inappropriate), because it overlaps with several other principles, like the symmetry-asymmetry principle, the density-emptiness principle, the convention-novelty principle, and the same-difference principle, for instance (as already discussed in *FPHP*).

The normality-abnormality pair overlaps with the symmetry-asymmetry principle, because being “abnormal” (say, for those with mental illnesses) is often treated not equally by others who are “normal.” So, the relationship reveals the symmetry-asymmetry principle.

The normality-abnormality pair also overlaps with the density-emptiness principle, because being “abnormal” (say, for those with mental illnesses) is often not as dense in the overall (not local) distribution of a population as those who are “normal.” So, the relationship reveals the density-emptiness principle.

The normality-abnormality pair also overlaps with the convention-novelty principle, because being “abnormal” (say, for those with mental

illnesses) often exhibits non-conventional (non-conformist) ideas and behaviors when contrasted with those who are “normal.” So, the relationship reveals the convention-novelty principle.

The normality-abnormality pair also overlaps with the same-difference principle, because being “abnormal” (say, for those with mental illnesses) shares some similarities in outcome when compared with those who are “normal” (in that both contribute to the control and regulation of human thoughts and behaviors in society, albeit in different ways). Yet, being “abnormal” also has something different from being “normal,” in that abnormal thoughts and behaviors follow a different pattern when contrasted with those which are normal. So, the relationship reveals the same-difference principle.

These illustrations of inadequate and compound family resemblances show how difficult it is to come up with an ontological principle in existential dialectics out of the blue, because many of them violate the selection criteria in one way or the other. It is all too easy to join two opposing words and simply make them into a pair, but it is all too difficult to pass the test of the selection criteria to be qualified as an ontological principle in existential dialectics.

Other examples of compound (and inadequate) family resemblances are shown in *Table 4.10* on “The Syntax of Existential Dialectics VII: Types of Inappropriate Family Resemblances.”

The Dialectic Constraints Imposed by the Principles

The principles, as they constitute the syntax of existential dialectics, are dialectic in character, such that, when they are applied, they impose dialectic constraints on how reality is to be understood.

Consider, say, the symmetry-asymmetry principle as an illustration here, in order to summarize two main characters of the dialectic constraints in question (as summarized in *Table 4.7*).

Firstly, to be dialectic here is to go beyond the narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme), be they about “self” vs. “world,” “freedom” vs. “unfreedom,” “barbarity” vs. “civilization,” “individuality” vs. “communality,” and so on.

One way to do so (to go beyond) is to consider them all in terms of co-existence (without favoring one over the rest). For instance, my theory of “post-civilization” (to be summarized later in the section on the pragmatics of existential dialectics) is to go beyond barbarity and civilization in terms of understanding barbarity and civilization as being co-existent.

And the same logic can be said in relation to my theories of “post-democracy,” “post-capitalism,” and others (also to be introduced later in the section on the pragmatics of existential dialectics), in regard to freedom vs. unfreedom, equality vs. inequality, communality vs. individuality, spirituality vs. materiality, and so on.

But to consider them all (in the dichotomies—and, for that matter, in any rigid multi-dimensional classificatory scheme) as co-existent is not the same as to imply that the opposing categories in any classificatory scheme are all equal, since, in accordance to the symmetry-asymmetry principle (as an illustration here), if they are equal in terms of being considered as co-existent, they are asymmetric in terms of being unequal in dialectic interaction (e.g., X can be more dominant than Y in case A, or Y is more dominant than X in case B), although in some special cases, they can be relatively equal (e.g., X and Y are relatively equal in case C).

For this reason, there are different versions of “post-democracy” and “post-capitalism” in my theories. As an illustration, in version I of the theory of post-democracy, freedom is more dominant than equality, whereas in version II of the theory of post-democracy, equality is more so than freedom.

But this “X more than Y” has to be understood in the context of dialectic logic (not in symbolic logic, as conventionally understood), in that both “X” and “Y” are important in post-democracy (in the context of dialectic logic), but in an asymmetry way.

By contrast, in symbolic logic, it often favors one over the other—be it in regard to privileging freedom over equality (in Fascism), favoring freedom relatively more than equality (in Liberal Democracy), or favoring equality relatively more than freedom (in Socialist Democracy). In regard to the latter two cases (about Liberal Democracy and Socialist Democracy), the difference between dialectic logic and symbolic logic can be one in degree, not in kind—in this sense, albeit not in other senses.

The same reasoning can be said about the relationships between individuality and communality, between spirituality and materiality, and between formal legalism and informal legalism in the different versions of my theory of “post-capitalism.”

Secondly, to be dialectic is to go beyond the narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme) in another way, this time, in a transcendent way, that is, in exploring other possibilities or even other issues not considered within the narrow confines of narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme).

As an analogy, in this second meaning, to go beyond the narrow dichotomy of “black” vs. “white” is not just to choose both “black” and “white” (as in the first meaning) but also to explore other options (e.g., “green,” “purple,” “blue,” etc.—and, alternatively, “shade,” “line,” “curve,” etc.).

By the same reasoning, to go beyond “democracy” is to transcend democracy (as in version III of my theory of “post-democracy”) and to explore other possibilities of lifeforms (e.g., “floating consciousness,” “hyper-spatial consciousness,” etc., to live beyond the narrow obsession with freedom and equality).

This dialectic character of the principles in existential dialectics has important implications for the pragmatics of existential dialectics (as will be clear shortly, in the section on the pragmatics of existential dialectics).

The Semantics of Existential Dialectics (or Its Ontosemantics)

The syntax of existential dialectics so understood in terms of ontological principles only gives us the structure of ontology in the world, in an abstract (general) sense. These principles by themselves do not tell us the specific meanings in a given context.

In order to grasp the specific meanings of the principles in a given context, it is necessary to study the semantics of existential dialectics (as summarized in *Table 4.11*).

And the analysis of the ontological principles as family resemblances in the previous section on syntax is only a starting point (and thus overlaps a bit with the semantics of existential dialectics here).

For this reason, I have often gone to great lengths in my previous books on different subjects to explain the specific meanings of the principles when applied in different contexts.

Consider two examples below for illustration, which are not exhaustive.

In *FPHST*, for instance, I used the first three principles (i.e., the change-constancy principle, the regression-progression principle, and the symmetry-asymmetry principle) to propose “the perspectival theory of space-time,” for a better way to understand space and time—especially, though not exclusively, in relation to future post-human history (as summarized in *Table 1.3*, *Table 1.4*, *Table 1.5*, and *Table 1.6*).

In so doing, I had to introduce concepts and theories specific to the field of physics and other related fields (e.g., “absolute space” and “absolute time” in “classical mechanics” and “relative space-time” in “the theory of relativity”).

And in *BNN*, I also exploited the three principles to propose the “transcendent” approach to the study of genes and memes as a new way to understand the interaction between nature and nurture.

In so doing, I had to explore concepts and theories in the world of evolutionary biology (e.g., “mutation,” “variation,” “adaptation,” “selection,” and “inheritance” in classical evolutionary theory) and neural biology (e.g., “chromosome,” “gene,” “DNA,” “RNA,” “protein,” “neuron,” “neural network,” and “behavior”).

Other examples, besides these two here, are given in other books of mine on different topics.

Therefore, this semantic dimension of existential dialectics is important, since, in each of my books when the ontological principles are used, each principle becomes relevant in a different meaning when contextualized within a given case study in question.

In this book, for instance, the principles are relevant in relation to the subject matter of cosmology (as summarized in the concluding chapter), and they can be shown in all shapes and sizes (since they are also to be treated as “short cuts,” as indicated before), without, however, being reduced to “specific ontology” (as opposed to “general ontology”), as explained in *Table 4.9*.

The Pragmatics of Existential Dialectics (or Its Ontopragmatics)

Even the semantics of existential dialectics is not enough to understand reality, since semantics by itself does not tell us the nature of intentionality and interests in relation to the matrix of power formations and conflicting interests when existential dialectics as an ontology is applied.

Surely, one cannot completely separate the pragmatics of existential dialectics from its semantics (and for that matter, its syntax), but the point here is to give each a more elaborated analysis.

For this reason, the pragmatics of existential dialectics needs to be studied too, in special relation to the inclusion of power formation and conflicting interests in the application of the principles of existential dialectics (as summarized in *Table 4.12*).

It is thus no wonder that all my previous books have shown in different ways how and why these ontological principles and their theoretical applications can reveal the future world to come in a way that humans have never known, in a totally different battleground for

competing human (and later post-human) interests by myriad groups fighting for their own versions of hegemony.

Perhaps a summary of my previous works in relation to existential dialectics and their contributions to my new theories as proposed over the years is deemed revealing here, for the further understanding of the pragmatics of existential dialectics (in close relation to the semantics of existential dialectics too).

That stressed—the following summary in four sub-sections is something that I often do in my previous books too, as a way to introduce the intellectual background of my ideas.

So, for those readers who had read my previous works, the following sub-sections serve as a reminder, as they are repeated hereafter *often verbatim* (with only some updated changes, with the rest kept intact).

These sub-sections are, namely, (a) the two-way street connecting theory with meta-theory, (b) the theoretical application of existential dialectics, (c) direct and indirect applications of existential dialectics, and (d) multiple applications of existential dialectics—to be summarized hereafter, respectively.

The Two-Way Street Connecting Theory and Meta-Theory

However, lest any misunderstanding occurs, it is important to remember that the pragmatics of existential dialectics is not a one-way street (that is, using the ontological principles for theoretical insights in praxis) but a two-way one, namely, (a) from meta-theory to theory, and (b) from theory to meta-theory.

(a) On one side of the street, the ontological principles can inspire some theoretical insights in praxis, that is, in relation to some specific fields.

(b) On the other (opposing) side of the street, however, the study of a subject matter in the specific fields in turn reveals some more hitherto unknown ontological principles to be discovered and identified.

For this reason, three new principles were added in *FC*, one in *FAE*, two in *ALD*, and three in *FIA*, on top of the original three in *BCPC*, for example (as there are more)—after some research on the specific subject matters.

Both theory and meta-theory enrich each other in all my works over the years.

The Theoretical Application of Existential Dialectics

This two-way street connecting theory and meta-theory has contributed to my original construction of 45 specific theories in 35 books (including this one here, up to now, in mid-2010) on numerous fields in all domains of knowledge, which can be classified in terms of specific “meta-theories” (about epistemology, methodology, logic, ontology, etc.) and specific “theories” (about the mind, nature, culture, society, and the rest—as will be further explained later in the sub-section on “the holistic organization of an inquiry” in the section about “sophisticated methodological holism”).

The final aim of my numerous new specific theories (on both theory and meta-theory) is to converge all of them (as proposed in my numerous books) into a grand project about the future of intelligent life, both here on earth and in deep space.

In fact, all these theories of mine serve as a foundation to unify all domains of knowledge for an overarching understanding of all forms of reality (by way of some ontological principles and the comprehensive perspectives of the mind, nature, society, and culture), while allowing for heterogeneity, conflict, subjectivity, and complexity, for example.

With this grand project in mind—the summary of my specific theories on meta-theory are given in this section (on “existential dialectics”) and the next (on “sophisticated methodological holism”), whereas the specific theories on theory will be summarized in the following categories of (a) society, (b) culture, (c) the mind, (d) nature, and (e) the rest, as shown below, in that order.

(a) Society

The category of “society” here can be divided into four sub-categories, i.e., (a1) social organizations, (a2) social institutions, (a3) social structure, and (a4) social systems.

(a1) Social Organizations

In relation to social organizations, I proposed a new thesis on the ambivalent nature of virtual organizations in the future, known as “the theory of e-civic alienation” in *FCD* (and summarized in *Table 4.19*).

And in *FPHO*, another theory called “the combinational theory of organization” is worked out, although it was first proposed in Ch.6 of *ALD*.

(a2) Social Institutions

There are different social institutions, be they about (a2.1) politics, (a2.2) economics, (a2.3) military affairs, (a2.4) mass media, (a2.5) law, and (a2.6) education, for instance.

(a2.1) In relation to politics, I offered different visions on (a2.1.1) political theory, (a2.1.2) comparative politics, and (a2.1.3) international relations, to cite three main ones.

(a2.1.1) In the context of political theory, my vision of a path-breaking political system in future times concerns the different forms of “post-democracy” to supersede democracy unto the post-human age.

My vision of post-democracy was called “the theory of post-democracy” (as summarized in *Table 4.22*, *Table 4.23*, and *Table 4.24*), whereas *Table 4.25* explains the distinctions among democracy, non-democracy, and post-democracy.

And *Table 4.26* stresses the multiple causes of the emergence of post-democracy, while *Table 4.27* clarifies some possible misunderstandings in regard to post-capitalism and post-democracy.

(a2.1.2) In the context of comparative politics, I also showed, in *ALD*, how and why authoritarianism can be an advanced form of liberal democracy (just as it has its own counterpart in non-liberal democracy), or what I originally called “authoritarian liberal democracy” (as summarized in *Table 4.21*), before it is to be superceded by “post-democracy.”

(a2.1.3) In the context of international relations (both at the institutional and structural levels), I provided, in *BWT*, “the theory of cyclical progression of empire-building,” for a better way to understand the logic of empire-building on earth and beyond—with the rise of what I originally envisioned as “hyper-empires” (like “the Chinese Union” and “the Indian Union”), “meso-empires” (like “the European Union” and “the North American Union”) and “micro-empires” (like “the Middle Eastern Union” and “the Latin American Union”) in the coming “post-post-Cold War era” as a visionary illustration, as summarized in *Table 4.20*.

In addition, in *FPHWP*, I proposed “the multifaceted theory of war and peace” to understand war and peace, in a small sense—or aggression and pacificity, in a broad sense.

(a2.2) In relation to economics, I also offered another vision, this time to understand the future forms of economic systems, that is, the different forms of “post-capitalism” to supersede capitalism unto the post-human age.

My vision of post-capitalism was referred to (in *FCD*, *BDPD* and *BCPC*) as “the theory of post-capitalism” (as summarized in *Table 4.28*, *Table 4.29*, *Table 4.30*, *Table 4.31*, and *Table 4.32*). And *Table 4.33* clarifies the differences among capitalism, non-capitalism, and post-capitalism, whereas *Table 4.34* shows multiple causes of the emergence of post-capitalism.

This vision on “post-capitalism” constitutes the third theoretical application of existential dialectics, this time, in that there is no wealth without poverty (or the wealth/poverty dialectics).

(a2.3) In relation to military affairs, I also proposed “the multifaceted theory of war and peace” (in *FCD*, although it was first so labeled in *FPHK*) for a new way to understand the causes of war—and, for that matter, the rise and fall of different forms of warfare over time.

This theory was further expanded in *FPHWP*, where I suggested a new way to understand war and peace, in a small sense—or aggression and pacificity, in a broad sense.

(a2.4) In relation to mass media, I also proposed “the totalistic theory of communication” in *The Future of Post-Human Mass Media* (or in short, *FPHMM*).

(a2.5) In relation to law, I also proposed “the reconstruction theory of law” in *The Future of Post-Human Law* (or in short, *FPHLAW*).

(a2.6) In relation to education, I propose “the heterodox theory of education” in *The Future of Post-Human Education* (or in short, *FPHEDU*).

(a3) Social Structure

In relation to social structure, I proposed two additional theories, that is, “the theory of the cyclical progression of hegemony” in *FCD* (and also in *FPHC* and *BDPD*), and “the theory of the cyclical progression of empire-building” (in *BWT*, as already indicated above)—with important implications for the symmetry-asymmetry principle in existential dialectics, just to cite one example.

Also, in *BNN*, I also proposed “the theory of contrastive advantages” to understand the persistence of social structure by gender, race, ethnicity, or any other groupings.

(a4) Social Systems

In relation to social systems, there are several sub-categories for illustration, which can be about (a4.1) urbanization, (a4.2) technology, (a4.3) demography, (a4.4) the environment, and (a4.5) social trends as a whole.

(a4.1) In relation to urbanization, I proposed “the contingent theory of urban planning” in *FPHUP* for a new way to understand density and void.

(a4.2) In relation to technology, I worked out “the ambivalent theory of technology” in *FPHE* for a new way to understand the nature of technology.

Some other books (like *FPHMM*, *FAE*, *FCD*, and *FHC*) also deal with technology, and a good example concerns “the synthetic theory of

information architecture” in *FIA* on taxonomy, network, and intelligence, in conjunction with the rise of technology.

(a4.3) In relation to demography, I proposed, first in *FHC* (and later in other books like *FCD*, *FPHC*, *FPHU*, etc.), “the theory of post-humanity,” in relation to the “post-human” age at some distant point of “after-postmodernity,” long after human extinction, to be eventually superseded by “post-humans” of various forms.

Some good candidates of the post-human lifeforms include, for instance, “thinking robots,” “thinking machines,” “cyborgs,” “genetically altered superior beings,” “floating consciousness,” “hyper-spatial consciousness,” “unfolding unconsciousness,” “the hyper-sexual body,” and “the hyper-martial body.” This post-human vision of mine was first originally worked out in *FHC* and further elaborated in both *FCD*, *FPHC*, *FPHU*, *FPHS*, and *FPHMA*, for instance.

Lest any confusion occurs, I need to emphasize two clarifications here about the term “post-human” as a neologism in my works.

Firstly, the word “post-human” here should *not* be confused with another term which looks similar but has a totally different meaning in the literature of postmodernism, namely, “post-humanism”—which constitutes a critique of “humanism” as traditionally understood (especially, though not exclusively, in relation to the idea of progress in science and reason in the Enlightenment project). (WK 2008)

And secondly, the word “post-human” here should also *not* be confused with a similar term which is used to champion the ideology of technology for the future co-existence between humans and cyborgs in “trans-humanism.” (WK 2008a)

Instead, my term “post-human” in relation to “posthuman-ism” also rejects “transhumanism” (especially, though not exclusively, in relation to the promises of technology) and refers to something else altogether, that is, the future extinction of humans and its post-human successors in deep space and beyond unto multiverses.

Later, in *BEPE*, I went further and provided a more comprehensive critique of “transhumanism,” together with other issues.

With these two clarifications in mind (as summarized in *Table 1.31*)—in the end, a most fundamental question about intelligent life now has an answer, in that, if asked, “What is the future of human civilization?”—my answer in *FCD* (89) is thus: “As addressed in Ch.7 of *FHC*, a later epoch of the age of after-postmodernity (that is, at some point further away from after-postmodernity) will begin, as what I called the ‘post-human’ history (with the term ‘post-human’ originally used in my doctoral dissertation at M.I.T., which was finished in November 1995,

under the title *After Postmodernity*, still available at M.I.T. library, and was later revised and published as *FHC*). The post-human history will be such that humans are nothing in the end, other than what culture, society, and nature (with some luck) have shaped them into, to be eventually superseded by post-humans (e.g., cyborgs, thinking machines, genetically altered superior beings, and others), if humans are not destroyed long before then.”

(a4.4) In relation to the environment, I also addressed the issue of sustainability, especially in *FHC*, *FCD*, and *FPHUP*. For instance, in *FPHUP*, I specifically proposed a new theory, “the contingent theory of urban planning,” on the need to go beyond the contemporary obsession with sustainability, in the context of not only the environment but also other issues.

(a4.5) In relation to social trends as a whole, I proposed in Ch.9 of *FCD* (367-8), that “civilizational history will continue into the following cyclical progression of expansion, before it is to be superseded (solely as a high probability, since humans might be destroyed sooner either by themselves or in a gigantic natural calamity) by posthumans at some distant point in after-postmodernity (which I already discussed in *FHC*)” unto multiverses (different constellations of universes):

Local → Regional → Global → Solar →
Galactic → Clustery... → Multiversal

In *BDPD*, this thesis of mine was referred to as “the theory of the cyclical progression of system integration and fragmentation,” at the systemic level—in close relation to another thesis analyzed in Ch.9 of *FCD*, which was called, in the absence of better words, “the multifaceted theory of war and peace” in *FPHK* (as already indicated above).

In *FC*, I also proposed “the dialectic theory of complexity” to account for the factor of uncertainty, which can have a major role to play in the world.

(b) Culture

The category of “culture” here can also be divided into different sub-categories like (b1) aesthetics, (b2) religion, (b3) popular (mass) culture, (b4), logic, (b5) civilization as a whole, (b6) ethics, (b7) epistemology (methodology), (b8) metaphysics (ontology), and (b9) ideology.

However, (b7) epistemology (methodology), (b8) metaphysics (ontology), and (b9) ideology are already discussed elsewhere, be they about “meta-theory” (e.g., methodology and ontology under the categories of “existential dialectics” here and “sophisticated methodological holism”

in the next section) or “theory” (e.g., ideology under the categories of “social institutions,” as described earlier, and also of “civilization as a whole,” as will be addressed shortly).

(b1) Aesthetics

In relation to aesthetics, I proposed “the transformative theory of aesthetic experience” in *FAE* about some great transformations of aesthetic experience in future history.

(b2) Religion

In relation to religion, I proposed “the comparative theory of religion” in *FHC* (and also in *FCD*, although it was first so labeled in *FPHK*).

And in *FPHR*, I provided a solid foundation of this theory with a better name, that is, “the comparative-substitutive theory of religion” for a new way to understand spirituality.

(b3) Popular (Mass) Culture

In relation to popular (mass) culture, there are some sub-categories for illustration, which can be, for example, (b3.1) mass culture in general and (b3.2) sports (like chess).

(b3.1) In relation to mass culture in general, I proposed, in *FHC*, a new way to understand mass culture in terms of some fundamental dilemmas, which is called, in the absence of better words, “the dualistic theory of mass culture” in *FPHO*.

(b3.2) In relation to sports (like chess), I proposed, in *FPHCHESS*, “the mediative-variative theory of chess” for a new way to understand tactics and strategy (in different traditions). Other sports were also addressed elsewhere, say, in the book on martial arts (in *FPHMA*).

(b4) Logic

In relation to logic, I also worked out, in *FPHML*, “the contrastive theory of rationality” for a new way to understand rationality and knowledge (in the context of mathematical logic).

(b5) Civilization as a Whole

In relation to civilization as a whole, I also argued, in *FHC*, no freedom without unfreedom (as shown in *Table 4.13*) and no equality without inequality (as shown in *Table 4.14*), especially in relation to the seven dimensions of life existence first worked out in *FHC* (i.e., the technological, the everyday, the true, the holy, the sublime/beautiful, the good, and the just).

Even more interestingly, in *BDPD* and later in *BCIV*, I further revealed a theoretical refinement of existential dialectics, this time, in arguing that there is no civilization without barbarity, with human civilization to be eventually superseded by what I originally analyzed as “post-human post-civilization” (which should not be confused with “post-

human civilization”), in the context of the freedom/unfreedom and equality/inequality dialectics.

In the final analysis, civilization cannot live without barbarity and has to learn to co-exist with it in ever new ways. Preposterous as this may seem to many contemporaries—it is no more imperative to preserve civilization than necessary to destroy barbarity, and the ideal of civilization is essentially bankrupt, to be eventually superseded by “post-civilization” (as summarized in *Tables 4.35-4.43*).

This freedom/unfreedom and equality/inequality dialectics holds in pre-modernity, modernity, postmodernity, and what I originally called “after-postmodernity” in *FHC* and *FCD*—especially, though not exclusively, in the context of the emergence of “post-humans.”

There are two specific theories about “after-postmodernity” here. The first theory about “after-postmodernity” is about the trinity of pre-modernity, modernity, postmodernity, and after-postmodernity at the cultural level—and was called, in *BDPD*, “the theory of the trinity of modernity to its after-postmodern counterpart,” although it was first analyzed in *FHC* and later in *FCD* and also *BCIV* (as summarized in *Table 1.34*, *Table 1.35*, *Table 1.36*, and *Table 1.37* and will be elaborated further in the later sub-section on “the rest” about future history).

The second theory about “after-postmodernity” is about pre-modernity, modernity, postmodernity, and after-postmodernity at the historical level. For instance, a conclusion in *FHC*, which is shocking indeed for many contemporaries, is none other than that “[t]he post-human history will therefore mark the end of human history as we know it and, for that matter, the end of human dominance and, practically speaking, the end of humans as well. The entire history of human civilization, from its beginning to the end, can be summarized by four words, linked by three arrows (as already discussed in *FHC*):

Pre-Modernity → Modernity →
Post-Modernity → After-Postmodernity

In *BDPD*, this thesis of mine was specifically called “the theory of the evolution from pre-modernity to after-postmodernity,” at the historical level—as shown in *Table 1.34*, *Table 1.35*, *Table 1.36*, and *Table 1.37* (and will be elaborated further in the later sub-section on “the rest” about future history).

Therefore, “[t]he end of humanity in the coming human extinction is the beginning of post-humanity. To say an untimely farewell to humanity is to foretell the future welcome of post-humanity.” (P. Baofu 2002: 89)

This thesis of mine was known in *BDPD* as “the theory of post-humanity,” at the systemic level—as already indicated in (a4.3) above.

(b6) Ethics

And in relation to ethics, I proposed, in *BEPE*, “the theory of post-ethics” for a new way to understand morality and immorality.

(c) The Mind

The important vision about “post-humans” (as summarized above) brings us to the category of “the mind” here, which, as is often understood in everyday’s usage, refers to the “brain” and the “body” (together with their interactions) and has different levels of consciousness which can be both “spiritual” and non-spiritual.

Therefore, the “mind” already presupposes the “brain,” “body,” and “spirit” (or “soul”), so that one does not fall into the intellectual trap of the “mind-body dualism” as debunked in modern (and especially, postmodern) philosophy (which I already went to great lengths to explain in *The Future of Human Civilization*).

That said—the category of “the mind” can be divided into two sub-categories, namely, in relation to (c1) biology and (c2) psychology.

(c1) Biology

In relation to biology, there are two concerns here, namely, (c1.1) genes and intelligence and (c1.2) the human body.

(c1.1) In relation to genes and intelligence, I worked out “the theory of contrastive advantages” (which was originally proposed in *FCD* and further worked out in *BNN*, as summarized in *Table 1.24*), to show the nature-nurture interactions of multiple levels in action (e.g., the biological, the psychological, the structural, the systemic, the cultural, and others) for humans and post-humans on earth and beyond, to the extent that different groups, be they on the basis of race, gender, ethnicity, class, age, or else, are not equal, on average, and have never been, nor will they be, even if there can be exceptions.

(c1.2) In relation to the human body, for instance, in *FPHMA*, I suggested “the expansive-contractive theory of martial arts,” in which two great future transformations of the martial body were envisioned, that is, both “with the hyper-martial body” and “without the body” (as summarized in *Table 1.32*)—although this issue can also be classified under the category of “culture.”

And in *FPHS*, I proposed “the theory of virtual sexuality,” in which three great future transformations of the sexual body were envisioned, that is, “virtual pleasure,” “the hyper-sexual body,” and “the post-sexual floating mind” (as summarized in *Table 1.33*).

(c2) Psychology

In relation to psychology (which also overlaps with biology too, however), I also proposed some greater transformations of the mind to come in the future, especially though not exclusively in the post-human age.

These greater transformations of the mind in psychology can be further sub-divided into different categories, namely, (c2.1) consciousness, (c2.2) unconsciousness (together with subconsciousness), (c2.3) creativity, (c2.4) learning, (c2.5) aggression (and pacificity), and (c2.6) personality.

(c2.1) In relation to consciousness, I analyzed, in *FPHC*, the nature of consciousness in relation to the conceptual dimensions of consciousness (as shown in *Table 1.12*), the theoretical levels of consciousness (as shown in *Table 1.13*), the thematic issues of consciousness (as shown in *Table 1.14*), the different dimensions of human existence (viz., having-ness, belonging-ness, and being-ness) in relation to consciousness (as shown in *Table 1.15*, *Table 1.16*, *Table 1.17*, and *Table 1.18*).

In *BCPC*, the nature of consciousness was further explored in relation to cognition, emotion, and behavior, which can be in consciousness and other mental states (e.g., subconsciousness and unconsciousness), in the context of existential dialectics, as shown in *Table 1.19*, *Table 1.20*, *Table 1.21*, *Table 1.22*, and *Table 1.23*.

In fact, in *FCD*, I already proposed three different theories in relation to the limits of cognition, emotion, and behavior, namely, “the theory of cognitive partiality,” “the theory of emotional non-neutrality,” and “the theory of behavioral alteration.”

Then, I argued that the existence of human consciousness will be superseded one day with “floating consciousness” (as first proposed in *FCD*) and “hyper-spatial consciousness” (as first proposed in *FPHC*) as a climax of evolution in consciousness, after the future extinction of human consciousness (as shown below):

Primordial consciousness → Human consciousness →
Post-human consciousness (with floating consciousness and hyper-spatial
consciousness as a climax in the evolution of consciousness)

In *BDPD*, these latest theses of mine were called “the theory of floating consciousness” and “the theory of hyper-spatial consciousness,” both at the cosmological and psychological levels (as summarized in *Table 1.26* and *Table 1.25*).

(c2.2) In relation to unconsciousness, for instance, in *FPHU*, the unconscious mind will undergo tremendous change, to the rise of what I

originally called “unfolding unconsciousness” in relation to anomalous experience, as a climax of evolution in unconsciousness, in conjunction with the conscious mind (both human now and post-human later), especially at the psychological level, as shown below:

Primordial unconsciousness → Human unconsciousness →
 Post-human unconsciousness (with unfolding unconsciousness
 as a climax in the evolution of unconsciousness)

In *FPHU*, this thesis of mine is called “the theory of unfolding unconsciousness” in a small sense, or “the unfolding theory of anomalous experience,” in a larger one, as shown in *Table 1.27* and *Table 1.28*.

(c2.3) In relation to creativity, for instance, in *FPHCT*, I also proposed “the comprehensive theory of creative thinking” to explore the role of creative thinking, in relation to technology and other factors, together with my original proposal of important creative techniques and traits (as shown in *Table 1.29*) and its double nature of desirability and undesirability (as shown in *Table 1.30*).

(c2.4) In relation to learning, for instance, in *FPHL*, I worked out “the multilogical theory of learning” for a new way to understand the nature of structure and context in language, in relation to learning and its future development in the context of the mind.

(c2.5) In relation to aggression (and pacificity), I proposed “the multifaceted theory of war and peace” in *FPHWP* (as mentioned above).

(c2.6) And in relation to personality, I worked out “the contrarian theory of personality” in *FPHP* for a new way to understand normality and abnormality.

(d) Nature

The category of “nature” here refers to the state of nature, which can be divided into some sub-categories like (d1) physics, (d2) cosmology, (d3) biology, (d4) geography, and (d5) geology.

But since biology in (d3) overlaps with biology in (c1)—only physics, cosmology, geography, and geology are addressed hereafter.

(d1) Physics

In relation to physics, I also proposed “the perspectival theory of space-time” in *FPHST* (based on *FPHC*) for a new way to understand space and time, as shown in *Table 1.3*, *Table 1.4*, *Table 1.5*, and *Table 1.7*.

In *FPHG* (based on *FPHC* and *FPHST*), I proposed “the selective theory of geometry” for a new way to understand geometry, with implications for the understanding of space-time in the context of infinity, symmetry, and dimensionality for future lifeforms that our world has

never known (as shown in *Table 1.6*, *Table 1.7*, *Table 1.8*; *Table 1.9*, *Table 1.10*, and *Table 1.11*).

And in *FC*, I proposed “the dialectic theory of complexity” for a new way to understand order and chaos in the state of nature and beyond.

(d2) Cosmology

In relation to cosmology, my theories on physics (as indicated above) already have important implications for understanding the nature and the future of the universe (which was also addressed in *FHC*, among other works aforcited).

I also proposed “the theory of hyper-spatial consciousness” in *FPHC* (and also in *FPHG*) for a new way to understand the future evolution of the mind to enter into different dimensions of space-time that our current world has never known.

In addition, in *BCOS*, I proposed “the theory of post-cosmology” for a new way to understand the beginnings and ends of the cosmos and beyond.

(d4) Geography

In relation to geography, I proposed “the theory of the geopower of nature” in *ALD* for a different way to understand the relationships between geography and other entities (like the mind, culture, and society).

(d5) Geology

And in relation to geology, I proposed “the resettlement theory of geology” in *FPHGEOL* for a different way to understand the relationships between statics and dynamics.

(e) The Rest

The category of “the rest” here refers to what cannot be strictly classified in any of the previous categories (i.e., society, culture, the mind, and nature). A good illustration of “the rest” refers to that which is, namely, (e1) historical.

(e1) Historical

Precisely here, I proposed “the theory of the evolution from pre-modernity to after-postmodernity” (as first worked out in *FHC* and later in *FCD* and *FPHC*), which overlaps—as a reminder from (b5)—with the issue concerning “civilization as a whole” in (b5).

For instance, in both *FCD* and *FPHC*, I worked out the structure of “post-human civilization” in terms of the trinity of after-postmodernity (i.e., “free-spirited after-postmodernity,” “post-capitalist after-postmodernity,” and “hegemonic after-postmodernity”).

Both conceptually and theoretically, the trinity of after-postmodernity is a sequential extension to the trinity of modernity (i.e., “free-spirited modernity,” “capitalist modernity,” and “hegemonic modernity”) and the

trinity of postmodernity (i.e., “free-spirited postmodernity,” “capitalist postmodernity,” and “hegemonic postmodernity”) as first proposed in *FHC*.

And the trinity of pre-modernity (i.e., “pre-free-spirited pre-modernity,” “pre-capitalist pre-modernity” and “hegemonic pre-modernity”) was later conceived in *BCIV* to complete the historical set from pre-modernity to after-postmodernity.

In *BDPD*, this thesis about the trinity of pre-modernity, modernity, postmodernity, and after-postmodernity was collectively known as “the theory of the trinity of modernity to its after-postmodern counterpart,” at the cultural level—as already so mentioned in (b5) earlier, and summarized in *Table 1.34*, *Table 1.35*, *Table 1.36*, and *Table 1.37*.

At the structural level, all these trinities are subject to the existential constraints (e.g., the freedom/unfreedom and equality/inequality dialectics in the context of “the cyclical progression of hegemony”), be the historical epoch in pre-modernity, modernity, postmodernity, or after-postmodernity in future times. Each of the historical epochs has its ever new ways of coming to terms with the ever new (different) mixtures of freedom/unfreedom and equality/inequality.

This is importantly so, not because, as is falsely assumed in conventional wisdom, one certain way is superior (or better) than another in terms of achieving more freedom and less unfreedom, or more equality with less inequality.

On the contrary, indeed, in each of the historical epochs, each increase of unfreedom greets each freedom achieved, just as each increase of inequality welcomes each equality achieved, albeit in ever new (different) ways. In *BDPD*, this thesis of mine was labeled as “the theory of the cyclical progression of hegemony,” at the structural level, though it was first analyzed in *FCD*.

In *BDPD*, more theoretical applications of existential dialectics were further examined, in relation to five main features, in the context of the duality of oppression, namely, (a) that each freedom/equality achieved is also each unfreedom/inequality created, (b) that the subsequent oppressiveness is dualistic, both by the Same against the Others and itself and by the Others against the Same and themselves, (c) that both oppression and self-oppression can be achieved by way of downgrading differences (between the Same and the Others) and of accentuating them, (d) that the relationships are relatively asymmetric among them but relatively symmetric within them, even when the Same can be relatively asymmetric towards itself in self-oppression, and the Others can be likewise towards themselves, and (e) that symmetry and asymmetry

change over time, with ever new players, new causes, and new forms, be the locality here on Earth or in deep space unto multiverses—as summarized in *Table 4.13*, *Table 4.14*, *Table 4.15*, and *Table 4.16*.

The same logic also holds both in relation to wealth and poverty (as addressed in *BCPC* and summarized in *Table 4.17* on the wealth/poverty dialectics) and in relation to civilization and barbarity (as addressed in *BCIV* and summarized in *Table 4.18* on the civilization/barbarity dialectics).

In *BDPD*, this thesis on existential dialectics was labeled as “the theory of existential dialectics.”

Direct and Indirect Applications of Existential Dialectics

A different way to appreciate the usefulness of existential dialectics is by way of the analysis of its (a) direct and (b) indirect applications.

(a) In direct applications, on the one hand, the logic of existential dialectics can shed some theoretical insights on diverse phenomena in the world, and good instances are the usage of the principles of existential dialectics for the theoretical insights on the freedom/unfreedom dialectics, the equality/inequality dialectics, and the wealth/poverty dialectics—as introduced earlier in (b5) and (e) in the previous sub-section.

For instance, my books like *FPHST*, *BNN*, *FAE*, *FC*, *FIA*, *FPHU*, *FPHK*, *FPHML*, *FPHE*, *FPHMM*, *FPHCT*, *FPHG*, *FPHUP*, *FPHL*, *FPHO*, *FPHMA*, *FPHS*, *FPHLAW*, *FPHFS*, *FPHWP*, *FPHP*, *BEPE*, *BCOS*, *FPHGEOL*, *FPHCHESS*, *FPHR*, and *FPHEDU* use the principles to reveal some theoretical insights on the perspectives of space and time (as in *FPHST*), of nature and nurture (as in *BNN*), of beauty and ugliness (as in *FAE*), of order and chaos (as in *FC*), of taxonomy and network (as in *FIA*), of the unconscious mind (as in *FPHU*), of the nature of knowledge (as in *FPHK*), of mathematical logic (as in *FPHML*), of engineering (as in *FPHE*), of mass media (as in *FPHMM*), of creative thinking (as in *FPHCT*), of geometry (as in *FPHG*), of urban planning (as in *FPHUP*), of language (as in *FPHL*), of organization (as in *FPHO*), of martial arts (as in *FPHMA*), of sexuality (as in *FPHS*), of law (as in *FPHLAW*), of formal science (as in *FPHFS*), of aggression and pacificity (as in *FPHWP*), of normality and abnormality (as in *FPHP*), of morality and immorality (as in *BEPE*), of the beginnings and ends of the universe (as in *BCOS*), of statics and dynamics (as in *FPHGEOL*), of tactics and strategy (as in *FPHCHESS*), of secularness and sacredness (as in *FPHR*), and of teaching and learning (as in *FPHEDU*).

(b) In indirect applications, on the other hand, the theoretical insights can further be used to reveal other phenomena directly from them (viz., the theoretical insights) and therefore indirectly from the principles themselves.

A good illustration is of course the use of the theoretical insights on the freedom/unfreedom and equality/inequality dialectics for the understanding of the civilization/barbarity dialectics.

This distinction between direct and indirect applications may sound a bit academic, since even in indirect applications, the phenomena under study can still be directly related back to the principles themselves.

In the previous example, as an illustration, the civilization/barbarity dialectics can be directly related to the principles of existential dialectics without the intermediate role of the freedom/unfreedom and equality/inequality dialectics.

Multiple Levels of Application

There is another issue to be clarified, however. In other words, the theoretical insights can be applied to multiple levels of analysis—even though, in a given example, it may refer to one level or a few only.

For instance, in the example concerning the freedom/unfreedom dialectics, it can be used at the structural level (e.g., in relation to the theory of the cyclical progression of hegemony), but it can also be exploited for other levels (e.g., the theory of post-capitalism at the institutional level).

All these levels of application should not be misleadingly construed, as I stress this before, as a one-way street (that is, to use the ontological principles for theoretical application at multiple levels of specific analysis) but a two-way one, in which theoretical insights in praxis, when studied in more specific contexts, can in turn refine the nature of existential dialectics (for example, with the addition of new principles).

Sophisticated Methodological Holism

The summary of my original meta-theory on methodology is provided below, again, to be repeated *often verbatim* from my previous works—as this is something I regularly do in each new book to introduce my past works, which are in conversation with this current one.

This means that, for those readers who had read some of my previous books, the summary below is really not much new (*almost verbatim*, with only some updated revisions).

That clarified—this original contribution of mine to the study of methodology takes the form of an approach known as “the theory of methodological holism” or “methodological holism” in short, as already worked out in *FPHC* (2004).

I have made good use of this methodological approach of mine for all of my previous works.

The Confusion of Holism with Systems Approach

Yet, it is imperative to stress at the outset, as I often emphasized this in all my previous books, that my approach of “methodological holism” does not oppose or exclude “methodological individualism” (as some readers may be tempted to assume, as is conventionally understood) but actually includes it.

The confusion here has to do with equating holism with systems approach in general (be it about systems theory, chaos theory, complexity theory, or else), which I debunked, while learning something from it, as already elaborated in *The Future of Complexity* (2007)—and *The Future of Post-Human Formal Science* (2010) is another addition to this critique of the intellectual fad of systems approach.

In other words, my meta-theory of holism, or sophisticated methodological holism in short, makes a distinction between doing holistic work and doing systems work, for two reasons.

The first reason is that holism, in my theory, does not imply systems approach, since it rejects systems approach because of the myriad problems that the literature on systems approach has been unable to resolve, while learning something from it.

And the second reason is that my theory is related to the other theory of mine, that is, existential dialectics, which does not exclude methodological individualism (but includes it, because it simply goes beyond both reductionism and reverse-reductionism in a dialectic way).

For these reasons (and others too, as summarized in *Table 4.1*), my version of methodological holism is *sophisticated*—not *vulgar* as sometimes used by inapt scholars employing the same term.

The Ontological Constraints

Sophisticated methodological holism is subject to some ontological constraints, and five good examples include “the partiality-totality principle,” “the predictability-unpredictability principle,” “the explicability-inexplicability principle,” “the absoluteness-relativeness

principle,” and “the formalness-informalness principle” in existential dialectics.

Of course, there can be more than five ontological principles in relation to method, but the five examples here are sufficient to illustrate the point in question.

With this caveat in mind—the first two were already analyzed in previous books of mine like *FC* and *FAE*, whereas the third one was addressed in *FPHU*, and the last two were accounted for in *FPHK* and *FPHML*, respectively.

For now, it suffices to show that sophisticated methodological holism, because of these ontological constraints on methodology, targets two major sins of methodology, namely, what I call, in the absence of better words, (a) *reductionism* and (b) *reverse-reductionism*—both of which come in all shapes and sizes, to be summarized below (and also shown in *Table 4.2*).

Against the Varieties of Reductionism

There are four versions of reductionism to be summarized here, which sophisticated methodological holism rejects, namely, (a1) conceptual, (a2) theoretical, (a3) methodological, and (a4) ontological forms of reductionism.

(a1) In conceptual reductionism, a good case in point concerns myriad dualities like mind vs. body, self vs. world, democracy vs. non-democracy, and the like (as already addressed in *FHC*, *FPHC*, and *BDDP*, for instance).

(a2) In theoretical reductionism, an illuminating case study is best exemplified by what I originally called “the foundation fallacy” in *FPHST*, in any attempt to naively understand space-time from the physical perspective as the foundation and, consequently, to dangerously dismiss (or belittle) other perspectives.

In *FAE*, I elaborated further these versions of reductionism in the literature on aesthetics (e.g., form vs. content, representation vs. expression, critics vs. artists, and externalism vs. internalism).

In *FIA*, I revealed other forms of reductionism in the literature on information architecture (e.g., the constructivist argument and the representational argument).

In *FPHU*, I showed the persistent legacy of reductionism, this time, in the literature on anomalous experience (e.g., the obsession with physics, chemistry, and biology for explaining anomalous experience).

In *FPHE*, I examined another case of reductionism in action, in the context of engineering (e.g., technical constraints vs. normative constraints).

In *FPHMM*, I elaborated one more version of reductionism, in relation to the three domains of communication (e.g., the competing views on sending, connecting, and receiving).

In *FPHCT*, I explored another version of reductionism, in relation to invention and innovation (e.g., the bio-psychological argument vs. the socio-cultural arguments).

In *FPHG*, I identified another version of reductionism, in relation to infinity, symmetry, and dimensionality (e.g., the Euclidean argument vs. the non-Euclidean arguments).

In *FPHUP*, I analyzed another version of reductionism, in relation to density and void (e.g., the engineering argument and the ecology argument).

In *PFHL*, I examined another version of reductionism, in relation to structure and context (e.g., the structuralist argument and the contextualist argument).

In *PFHO*, I explored another version of reductionism, in relation to communication, decision-making, and leadership (e.g., the rational-system argument vs. the natural-system argument vs. the open-system argument).

In *PFHMA*, I revealed another version of reductionism, in relation to the martial body and spirit (e.g., the spiritual argument vs. the materialist argument vs. the defensive argument).

In *PFHS*, I analyzed another version of reductionism, in relation to the sexual body and spirit (e.g., the naturalist argument vs. the constructivist argument).

In *PFHLAW*, I examined another version of reductionism, in relation to law (e.g., the necessity argument vs. the contingency argument).

In *FPHWP*, I show another version of reductionism, in relation to war and peace (e.g., the aggressivist argument vs. the pacifist argument).

In *BEPE*, I analyzed another version of reductionism, in relation to morality and immorality (e.g., the objectivist argument vs. the non-objectivist argument vs. the skeptical argument).

In *BCOS*, I examined another version of reductionism, in relation to the contested beginnings and speculative ends of the universe (e.g., the scientific argument vs. the religious argument vs. the esoteric argument vs. the metaphysical argument).

In *FPHP*, I showed another version of reductionism, in relation to normality and abnormality (e.g., the natural argument vs. the social argument vs. the cultural argument vs. the mental argument).

In *FPHGEOL*, I scrutinized another version of reductionism, in relation to statics and dynamics (e.g., the catastrophe argument vs. the uniformity argument vs. the revision argument).

In *FPHCHESS*, I showed another version of reductionism, in relation to tactics and strategy (e.g., the natural argument vs. the social argument vs. the cultural argument vs. the mental argument).

In *FPHR*, I revealed another version of reductionism, in relation to secularness and sacredness (e.g., the critical argument vs. the skeptical argument vs. the theist argument).

And in *FPHEDU*, I examine another version of reductionism, in relation to teaching and learning (e.g., the teacher-centered argument vs. the student-centered argument vs. the balanced argument).

(a3) In methodological reductionism, a good illustration can be the debate between different versions of qualitative and quantitative methods (as already analyzed in *FC* and also *FHC*).

In *FPHML*, I examined similar reductionism, this time, in the literature on mathematical logic (e.g., the obsession with consistency, soundness, and completeness).

And in *FPHFS*, I explored the problems of reductionism in the context of formal science (e.g., the analytical argument, as opposed to the synthetic argument).

(a4) In ontological reductionism, an excellent instance involves another debate, this time between emergentism and reductionism in complexity theory (as addressed in *FC*) and also in psychology (as elaborated in *FPHC*, in the context of Being and Belonging).

But to target against the varieties of reductionism constitutes only a side of the same coin, and the other side concerns the varieties of reverse-reductionism.

Against the Varieties of Reverse-Reductionism

The other side of the same coin is the reverse version of reductionism, which is what I want to call, in the absence of better words, *reverse-reductionism*.

My sophisticated version of methodological holism targets against the varieties of reverse-reductionism (just as it also rejects the ones of reductionism).

Perhaps nothing expresses better the popularity of reverse-reductionism than the “anything-goes” mentality in postmodernism of our time, as shown in the following four versions.

(b1) In conceptual reverse-reductionism, any concept of “art” (e.g., fine art, applied art, outsider art, junk art) is welcome in postmodernism (as already analyzed in Ch.4 of *FHC*—and also in *FAE*).

(b2) In theoretical reverse-reductionism, a variety of art and literary theories co-exist. Take the case of literary studies, as there are now Literary Structuralism, Marxist Literary Criticism, New Criticism, Phenomenology, Hermeneutics, Language-Game Literary Criticism, Feminist Literary Criticism, Reception Theory, Reader Response Criticism, Poststructuralism, Semiotics, Psychoanalytic Literary Criticism, just to cite some well-known ones, with no one being said to be better than any others (as detailedly analyzed in Ch.4 of *FHC*). (S. Raman 1997)

In *BNN*, I even introduced “the compromise fallacy” as another good illustration of theoretical reverse-reductionism, in misleadingly treating both genetic and environmental approaches as equally valid.

(b3) In methodological reverse-reductionism, multiple methodologies are deemed as acceptable in postmodernism (e.g., doing art without praxis, doing art with praxis, and doing art by sublation), as analyzed in Ch.4 of *FHC*.

And in *FPHFS*, I exposed the problems of reverse-reductionism in the context of formal science in relation to systems theory (e.g., the synthetic argument).

(b4) In ontological reverse-reductionism, no privileged ontology is allowed, and the door is open practically for anything in postmodernism (e.g., the equal status of the ontology of Being vs. that of Becoming, as already addressed in Ch.4 of *FHC*—and also in *FPHC*).

In *FAE*, I also introduced another version of reverse-reductionism, that is, “the pluralist fallacy,” in the context of understanding aesthetic experience, for instance—although this fallacy has been committed not exclusively in relation to the ontological level (but also at the conceptual, theoretical, and methodological ones).

These dual dangers against reverse-reductionism (in this sub-section) and reductionism (in the previous sub-section) are something that sophisticated methodological holism rejects. And in *FPHFS*, I addressed these two problems further.

This point about the dual dangers is important enough, since many scholars often favor one against the other, but it is vital to target both.

The Holistic Organization of an Inquiry

With these dual dangers against reductionism and reverse-reductionism in mind—sophisticated methodological holism suggests that an inquiry of any given phenomenon is more complete, if treated in the

context of a comprehensive analysis at all relevant levels, which challengingly encompass all the fields of human knowledge, ranging from the natural sciences and formal sciences through the social sciences to the humanities.

This section is something that I had already stressed in all my previous books and repeat (*often verbatim*) hereafter. But, for those readers who had read my previous books, this serves as a reminder.

With this reminder in mind—there are multiple ways to engage in a holistic inquiry with all relevant levels of analysis. Over the years, I have proposed different ways to fulfill this holistic methodological requirement, as repeated in my previous books.

Hereafter is a summary of four major ways, namely, (a) by discipline, (b) by domain, (c) by subject, and (d) by meta-analysis—all of which fulfill the holistic requirement of sophisticated methodological holism on a given issue.

(a) In a holistic organization by discipline, a good illustration is the multiple levels of analysis, namely, (a1) the micro-physical, (a2) the chemical, (a3) the biological, (a4) the psychological, (a5) the organizational, (a6) the institutional, (a7) the structural, (a8) the systemic, (a9) the cultural, (a10) the macro-physical (cosmological), and (a11) other relevant levels, which are either a combination of all these levels or the practical applications with a combination of them.

This holistic organization by discipline is used in *FCD* and *BCPC*, for instance.

(b) In a holistic organization by domain, some good candidates include the classification of different perspectives of analysis in relation to (b1) nature, (b2) the mind, (b3) society, and (b4) culture, as already worked out in *BCIV*, *FPHST*, *FC*, *FAE*, *FPHU*, *FPHK*, *FPHE*, and *FPHFS*.

Culture in (b4), in this re-classification, is the same as culture in (a9) and can be further divided into different sub-categories, with good examples like (a9i) epistemology (methodology), (a9ii) aesthetics, (a9iii) ethics, (a9iv) metaphysics (ontology), and (a9v) religion. For clarification, epistemology (methodology) in (a9i) and metaphysics (ontology) in (a9iv) overlap with the category of “meta-theory.”

Society in (b3) includes the organizational in (a5), the institutional in (a6), the structural in (a7), and the systemic in (a8).

The mind (b2) has more to do with the chemical in (a2), the biological in (a3), and the psychological in (a4), although it can overlap with (a1), (b3) and (b4), for instance.

It should be stressed that the “mind” here also includes the categories like the “brain,” “body,” and the “spirit” (or the “soul”)—whenever needed in a given context, so that one does not fall into the intellectual trap of the “mind-body dualism” in the history of modern (and especially, postmodern) philosophy, which I already went to great lengths to explain in *The Future of Human Civilization*. After all, in everyday’s usage, the “mind” already implies the “brain” and the “body” (together with their interactions) and has different levels of consciousness which can be both “spiritual” and non-spiritual.

And nature in (b1) refers to the micro-physical in (a1) and the macro-physical (cosmological) in (a10), although it can also overlap with (a2), (a3) and (a4).

(c) In a holistic organization by subject, some excellent examples concern the analysis of consciousness in *FPHC* (i.e., on Having, Belonging, and Being); of civilization in *FHC* (i.e., the True, the Holy, the Everyday, the Technological, the Beautiful/Sublime, the Good, and the Just); of international politics in *BWT* (i.e., Hyper-Empires, Meso-Empires, and Micro-Empires); of nature and nurture in *BNN* (i.e., genes and memes); of information architecture in *FIA* (i.e., taxonomy and network); of mathematical logic in *FPHML* (i.e., consistency, soundness, and completeness); of communication in *FPHMM* (i.e., sending, connecting, and receiving); of creative thinking in *FPHCT* (i.e., invention and innovation); of geometry in *FPHG* (i.e., infinity, symmetry, and dimensionality); of urban planning in *FPHUP* (i.e., density and void), of language in *FPHL* (i.e., structure and context), and of organization in *FPHO* (i.e., communication, decision-making, and leadership), in *FPHMA* (i.e., the martial body and the martial spirit), in *FPHS* (i.e., the sexual body and the sexual spirit), in *FPHLAW* (i.e., necessity and contingency), in *FPHWP* (i.e., aggression and pacificity), in *FPHP* (i.e., normality and abnormality), in *BEPE* (i.e., morality and immorality), in *BCOS* (i.e., the beginnings and ends of the universe), in *FPHGEOL* (i.e., statics and dynamics), in *FPHCHESS* (i.e., tactics and strategy), in *FPHR* (i.e., secularness and sacredness), and in *FPHEDU* (i.e., teaching and learning)—by incorporating all the relevant levels of analysis as cited above in each.

(d) And in a holistic organization by meta-analysis, two good cases in point involve the works on post-capitalism in *BCPC* and on authoritarian liberal democracy in *ALD*, with the classification of analysis in theory and meta-theory.

The essential point to remember here, as I thus stress in all my previous books, is that the multiple levels of analysis can be reorganized in

many different ways, insofar as none of the levels (if relevant to an inquiry in question) is ignored or dismissed, to avoid the danger of reductionism (and for that matter, the one of reverse-reductionism, in the opposite direction).

Three Clarifications

Three clarifications are needed here, however, to avoid any hasty misunderstanding.

Firstly, the entities in each classification are not mutually exclusive. For instance, in the holisitic organization by domain, nature in (b1) can also be linked to the chemical in (a2), the biological in (a3), and the systemic in (a8). And the mind (b3) can alternatively be related to the micro-physical in (a1) and the chemical in (a2), for example.

Secondly, there is also the important factor of luck (or uncertainty in conventional usage), but it is already implied or allowed in each of the organizations of an inquiry—especially in relation to the predictability-unpredictability principle and the order-chaos principle in existential dialectics. This topic about uncertainty was already addressed in *FHC*—and more extensively, in *FC*, in the context of order and chaos.

And lastly, the comparison in a classification is not absolute, but relative, as there are often some shades of gray, not exactly black or white (figuratively speaking).

Some further clarifications and qualifications of sophisticated methodological holism are shown in *Table 4.2*.

Some Distinctive Usefulness

In the end, sophisticated methodological holism—when applied, especially though not exclusively, as illustrated in my numerous works—can enrich the understanding of reality in some distinctive ways. Here are four examples (as revealed in each of my books).

Firstly, it provides a comprehensive analysis of a subject matter, from which much can be learned about reality, both in relation to the perspectives of the mind, nature, society, and culture.

Secondly, it offers a new classification of the subject matter.

Thirdly, it suggests some visions of the future in relation to the subject matter in question.

And fourthly, it proposes some insights on meta-theory (e.g., methodology and ontology) in general—with the clear understanding, however, of the dilemma of specific vs. general ontology (as shown in

Table 4.9 on the syntax of existential dialectics in the context of the dilemma of ontology).

For this very reason, all of these ways are important, without reducing one into the analysis of another. (*FPHCT*)

Chapter Outline

With this summary of my two original meta-theories (on methodology and ontology, *almost verbatim* from my previous works) in mind—this book is organized in four main parts, namely, (a) Part I on the introduction to this book, (b) Part II on teaching, (c) Part III on learning, and (d) Part IV on the conclusion of the book.

The book is thus organized in four chapters.

The introductory chapter here, that is, Chapter One titled “Introduction—The Value of Education,” begins by first questioning the overvaluation of education and then summarizing the different faces of education—together with the theoretical debate in the literature, my heterodox theory of education, the relationship between theory and meta-theory, existential dialectics, sophisticated methodological holism, and some further clarifications.

Chapter Two titled “Teaching and Its Duplicity” explores the nature of teaching from the four perspectives of the mind, nature, society, and culture, with a deconstructive analysis of each.

Chapter Three titled “Learning and Its Ambivalence” examines the nature of learning from the four perspectives of the mind, nature, society, and culture, with a constructive critique of each.

The last chapter titled “Conclusion—The Future of Education” summarizes the analysis in the book in the dialectic context of teaching and learning, with sixteen major theses, namely, (a) the first thesis: the absoluteness-relativeness principle, (b) the second thesis: the predictability-unpredictability principle, (c) the third thesis: the explicability-inexplicability principle, (d) the fourth thesis: the preciseness-vagueness principle, (e) the fifth thesis: the simpleness-complicatedness principle, (f) the sixth thesis: the openness-hiddenness principle, (g) the seventh thesis: the denseness-emptiness principle, (h) the eighth thesis: the slowness-quickness principle, (i) the ninth thesis: the expansion-contraction principle, (j) the tenth thesis: the theory-praxis principle, (k) the eleventh thesis: the convention-novelty principle, (l) the twelfth thesis: the evolution-transformation principle, (m) the thirteenth thesis: the symmetry-asymmetry principle, (n) the fourteenth thesis: the regression-progression principle, (o) the fifteenth thesis: the sameness-

difference principle, and (p) the sixteenth thesis: the post-human rebellion—to be elaborated in the rest of the book, with a summary in the concluding chapter.

This seminal project is to fundamentally alter the way that we think about education, from the combined perspectives of the mind, nature, society, and culture, with enormous implications for the human future and what I originally called its “post-human” fate.

Some Clarifications

But some additional clarifications are needed, before a formal analysis of the nature of education is to begin in Chapter Two.

These clarifications, lest any potential misunderstanding by the readers occurs, refer to (a) the conversation with my previous books, (b) the illustrative selection of case studies and examples, (c) detailed analysis versus overall analysis, (d) two distinctive features of using quotations, and (e) the use of neologisms.

These clarifications are something that I also regularly repeat in my previous books too, so these points are repeated hereafter, *often verbatim*—albeit in a different context this time.

In Conversation with My Previous Books

Firstly, my heterodox theory of education is constructed on the theoretical foundation of my previous books (i.e., *FHC*, *FCD*, *FPHC*, *BDPD*, *BCPC*, *BCIV*, *FPHST*, *BNN*, *BWT*, *FC*, *FAE*, *ALD*, *FIA*, *FPHU*, *FPHK*, *FPHML*, *FPHE*, *FPHMM*, *FPHCT*, *FPHG*, *FPHUP*, *FPHL*, *FPHO*, *FPHMA*, *FPHS*, *FPHLAW*, *FPHFS*, *FPHWP*, *FPHP*, *BCOS*, *BEPE*, *FPHGEOL*, *FPHCHESS*, and *FPHR*—as explicated in “The List of Abbreviations”).

Just consider the following two illustrations, namely, (a) in relation to other related theoretical debates and (b) in relation to different visions as worked out in my previous books.

(a) The first illustration is that the theoretical debate here also involves a few other related theoretical issues.

These other related theoretical issues have to do with some deeply contested theoretical debates, which, however, I had already gone to great lengths to analyze in my numerous (previous) books, as summarized below. It should also be stressed, lest misunderstanding occurs, that each of the theoretical debates (as listed below) does not exhaust the issues

covered in the books, as each book covers more issues than what is listed below (for illustration only).

- On Learning
 - Ex: *The Future of Post-Human Language*
- On Communication
 - Ex: *The Future of Post-Human Mass Media*
- On Science
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *The Future of Complexity*
 - Ex: *The Future of Post-Human Knowledge*
 - Ex: *The Future of Post-Human Geology*
- On Personality
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *The Future of Post-Human Personality*
- On Creativity
 - Ex: *The Future of Post-Human Creative Thinking*
 - Ex: *The Future of Aesthetic Experience*
- On Cognition
 - Ex: *The Future of Post-Human Unconsciousness*
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *The Future of Capitalism and Democracy*
 - Ex: *The Future of Post-Human Creative Thinking*
 - Ex: *The Future of Post-Human Personality*
- On Intuition
 - Ex: *The Future of Post-Human Unconsciousness*
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *Beyond Capitalism to Post-Capitalism*
 - Ex: *The Future of Capitalism and Democracy*
- On Emotion
 - Ex: *The Future of Post-Human Unconsciousness*
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *The Future of Aesthetic Experience*
 - Ex: *Beyond Capitalism to Post-Capitalism*
 - Ex: *The Future of Capitalism and Democracy*
 - Ex: *The Future of Post-Human Personality*
- On Behavior
 - Ex: *The Future of Post-Human Language*
 - Ex: *The Future of Post-Human Unconsciousness*
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *Beyond Capitalism to Post-Capitalism*

- Ex: *The Future of Capitalism and Democracy*
- Ex: *The Future of Post-Human Sexuality*
- Ex: *The Future of Post-Human Personality*
- Ex: *The Future of Post-Human Martial Arts*
- On Spirituality
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *The Future of Post-Human Religion*
 - Ex: *The Future of Capitalism and Democracy*
 - Ex: *Beyond Capitalism to Post-Capitalism*
 - Ex: *The Future of Post-Human Sexuality*
 - Ex: *The Future of Post-Human Martial Arts*
 - Ex: *The Future of Post-Human Unconsciousness*
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: *Beyond Ethics to Post-Ethics*
- On No Morality Without Immorality
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *The Future of Capitalism and Democracy*
 - Ex: *Beyond Democracy to Post-Democracy*
 - Ex: *Beyond Ethics to Post-Ethics*
- On Being and Belonging
 - Ex: *The Future of Post-Human Consciousness*
 - Ex: 2 volumes, *The Future of Human Civilization*
- On Different Dimensions of Human Existence
 - Ex: 2 volumes, *The Future of Human Civilization*
- On No Freedom Without Unfreedom
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *The Future of Capitalism and Democracy*
 - Ex: *Beyond Capitalism to Post-Capitalism*
 - Ex: *Beyond Democracy to Post-Democracy*
 - Ex: *Beyond Civilization to Post-Civilization*
- On the Cosmos
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *The Future of Post-Human Space-Time*
 - Ex: *Beyond Cosmology to Post-Cosmology*
 - Ex: *The Future of Post-Human Geometry*
 - Ex: *The Future of Post-Human Geology*
- On Modernity, Post-Modernity, and After-Postmodernity
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *Beyond Civilization to Post-Civilization*
- On Pre-Modernity
 - Ex: *Beyond Civilization to Post-Civilization*

- On Uncertainty
 - Ex: *The Future of Complexity*
 - Ex: 2 volumes, *The Future of Human Civilization*
- On Comparative Religion
 - Ex: 2 volumes, *The Future of Human Civilization*
- On Science and Religion
 - Ex: 2 volumes, *The Future of Human Civilization*
 - Ex: *Beyond Cosmology to Post-Cosmology*
- On Religion and the Environment
 - Ex: *The Future of Capitalism and Democracy*
- On the Separation of Church and State
 - Ex: 2 volumes, *The Future of Human Civilization*

Therefore, those who are interested in these other theoretical issues (and debates) which are related to the current context can consult these other books of mine for more details.

(b) And the second illustration is that one of the major theses of this book concerns the future, be it human and later post-human, which is closely linked with the different visions that I had worked out in my previous books, in relation to the mind, nature, society, and culture.

Of course, for the convenience of the readers, a summary of some of these visions will be provided whenever necessary, as shown in the two sections on meta-theory above (*often verbatim*) and in different tables at the end of this chapter and the concluding chapter, for instance.

Yet, I still expect the readers to read my previous books directly for more details—as this book is written in conversation with my previous ones.

Case Studies and Examples

Secondly, the case studies and examples in the chapters are not exhaustive but solely illustrative. Nor are they necessarily mutually exclusive, as they can be reclassified in a different way. And exceptions are allowed.

One is tempted to assume, however, that, since the case studies and their examples are not exhaustive, more case studies and examples are needed. But the problem here is that just adding more of them does not necessarily change the conclusions to be drawn and may even lead to redundancy.

After all, the case studies and examples used in this book are chosen with care and deemed sufficient for the purpose at hand, even though they are solely illustrative.

Detailed Analysis versus Overall Synthesis

Thirdly, there is a distinction between detailed analysis and overall synthesis, in that the former is, especially though not exclusively, more for the specialized viewpoint of a specific discipline, whereas the latter is, especially though not exclusively, more for the broad horizon of an interdisciplinary approach—relatively speaking, of course.

Or, by analogy, there is a distinction between depicting a “tree” (with tiny details) in a “forest” and viewing the entire “forest” itself (with the broader horizon).

This book, like all previous ones of mine, tries to strike a balance between the two forms of understanding, although this does not imply that the two forms should be exactly equally offered, in an exact 50-50 balance.

Instead, the book, more often than not, does not allow the tiny details to obscure the larger picture in a given case study, because the entire book is inter-disciplinary in nature and tries to look at the entire “forest,” not being bogged down with the detailed analysis of an individual “tree” in the forest, by analogy.

In this sense, although detailed analysis can be provided whenever needed for a given case study, the important point to remember is the overall horizon with its broadness of scope.

Two Distinctive Features of Using Quotations

Fourthly, the way that quotes are used in this book (and others of mine) has two distinctive features, as explained below.

The first distinctive feature is that, at the end of each quotation, sometimes there are more than one reference—in which case the first reference is for the original citation, and the rest of the references are for the convenience of the reader for more information about the issue under quotation.

And the second feature is that quotations are used as often as possible, so as to let others speak for themselves, without the nuisance of putting my own words into their mouths. Even more importantly, this allows me to use the original text as an evidence for critical analysis at the end of each section.

The Use of Neologisms

And finally, I use different neologisms in my books, mostly to introduce my original concepts and theories, and good instances include those here or elsewhere in my previous books (e.g., “the heterodox theory of education,” “post-democracy,” “hyper-spatial consciousness,” “post-capitalism,” and whatnot). Needless to say, they are used here solely for our current intellectual convenience, as they will be renamed differently in different ways in future history.

As I thus wrote in *FCD* (508-9), “all these terms ‘post-capitalism,’ ‘post-democracy’...and other ones as introduced in...[the] project (e.g.,...‘posthuman elitists,’ and ‘posthuman counter-elitists,’ just to cite a few of them) are more for our current intellectual convenience than to the liking of future humans and post-humans, who will surely invent more tasteful neologisms to call their own eras, entities, and everything else, for that matter. But the didactic point here is to use the terms to foretell what the future might be like, not that its eras and entities must be called so exactly and permanently. After all, William Shakespeare (1995: Act II, Scene II, Line 47) well said long ago: ‘What is in a name? That which we call a rose by any other name would smell as sweet.’”

As I had also stressed time and again before, each of the neologisms can be re-written as a different “X,” only to be re-named differently by the powers that be in different eras of future history.

With these clarifications for thought in mind—I now proceed to Chapter Two on teaching and its duplicity.

Table 1.1. Different Faces of Education

• The Aims of Education

- Ex: “preparation for political participation”
- Ex: “preparation for economic participation”
- Ex: “a product for use as social capital”
- Ex: “fulfillment of self-development”
- Ex: “development of character”

• The Process of Education

- Ex: teaching
- Ex: learning

• The Contents of Education

- Ex: these refer to the subject matter that a teacher should teach and a student should learn, in the broader relation to the aims and process of education.
- But since different educators and scholars on education disagree about the contents of education over the ages, this raises the more important question about the foundation of education in the first place.

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 1.2* of *FPHEDU*. See book for citations.

Table 1.2. Four Great Future Transformation of Education

• Online Education

—Ex: education will be carried out more and more on the Internet.

• Virtual Education

—Ex: education will be carried out one day by the technological breakthrough of uploading info into the brain.

• Holistic Education

—Ex: education will be carried out more and more broadly and deeply, in accordance to the future evolutions of the mind in relation to perception, conception, imagination, intuition, emotions, and behaviors, for example.

• Spiritual Education

—Ex: education will further be shaped by future spiritual transformations in a way that the human world has never known.

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Ch.4 of FPHEdu*. See text for citations.

**Table 1.3. The Theoretical Debate on Space-Time
(Part I)**

• **Isaac Newton’s Absolutist (Substantivist) Theory of Space-Time**

—space and time are independent from each other. The structure of space-time is $E3 \times E1$ (with the structure of space, P , as the set of spatial locations in a three-dimensional Euclidean space, $E3$, and the structure of time as the set of temporal moments, T , in the one-dimensional real time, $E1$).

—space and time are also independent from the effects of matter and events. The existence of space and time is possible even in a world absent of matter (and, for that matter, even in a world absent of events), as if they were material objects but with their total unchangingness thorough time.

• **Albert Einstein’s Relativist Theory of Space-Time**

—space and time are interchangeable (not absolute), just as matter and energy are equivalent (not independent) with the famous equation, $E = mc^2$ (as in the special theory of relativity in 1905).

—space-time and matter-energy are also relative in a grand union (as in the general theory of relativity in 1915). Thus, each pair affects the other pair, as “matter 'tells' spacetime how to curve [in a non-Euclidean geometry] and curved spacetime 'tells' matter how to behave....Space contracts near mass and dilates away from it. Time dilates near mass and contracts away from it. Clocks positioned farther away from the mass of the earth run faster than clocks closer to the earth.” (L. Shlain 1991: 328-330)

(continued on next page)

**Table 1.3. The Theoretical Debate on Space-Time
(Part II)**

• **Peter Baofu’s Perspectival Theory of Space-Time**

- space and time can be understood from multiple perspectives, be they in relation to culture, society, nature, and the mind, with each perspective revealing something about the nature of space-time and simultaneously delimiting its view. This is subject to “the regression-progression principle” in existential dialectics.
- each perspective of space and time exists in society and culture with good reasons, with some being more successful and hegemonic (dominant) than others. This is subject to “the symmetry-asymmetry principle” in existential dialectics.
- space and time will not last, to be eventually superseded (altered) by post-humans in different forms (e.g., stretching/shrinking space-time, engineering more dimensions of space-time, and manipulating multiverses), be they here in this universe or in multiverses. Thus, even the physical existence of space-time cannot last forever, with ever more transformations in the process. This is subject to “the change-constancy principle” in existential dialectics.
- the conventional wisdom (especially by physicists) of treating the physical perspective of space and time as the foundation of all other perspectives (of space and time) and of regarding them as much less important is a form of reductionism, committing what I call *the foundation fallacy*, in misleadingly dismissing the multiple perspectives of space and time in relation to culture, society, nature, and the mind.

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. Some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: A summary of *Sec. 1.1*, *Sec. 1.2*, and *Sec. 1.3* of *FPHST*—and, for that matter, the rest of *FPHST*

Table 1.4. Main Reasons for Altering Space-Time

• The Need to Make New Energy-Matter

- Ex: manipulating molecular bonds for new materials
- Ex: creating nanotechnologies on the atomic scale
- Ex: engineering the atomic nucleus
- Ex: restructuring most elementary particles
- Ex: inventing new forms of matter and energy

• The Need to Create New Space-Time

- Ex: creating “warp drive” (as in science fiction) for space travel
- Ex: creating “pocket universes”

• The Need to Conquer the Cosmos unto Multiverses

- Ex: spreading floating consciousness and hyper-spatial consciousness, besides other forms that humans have never known, in the cosmos and beyond unto multiverses for ultimate conquest

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions. Also, it should be stressed that the three reasons are all related, in that they all contribute to the evolution of intelligent life in the cosmos unto multiverses in the most distant future beyond our current knowledge.

Sources: A summary of *Sec. 6.2* of *FPHST*. See also *FHC*, *FCD*, *FPHC*, *FC*, *FPHU*, and *FPHG*, for example.

Table 1.5. The Technological Frontiers of the Micro-World

- **Type I-Minus**
—Ex: building structures and mining
- **Type II-Minus**
—Ex: playing with the genetic makeups of living things
- **Type III-Minus**
—Ex: manipulating molecular bonds for new materials
- **Type IV-Minus**
—Ex: creating nanotechnologies on the atomic scale
- **Type V-Minus**
—Ex: engineering the atomic nucleus
- **Type VI-Minus**
—Ex: restructuring most elementary particles
- **Type Ω -Minus**
—Ex: altering the structure of space-time

Notes: As already indicated in *Sec.4.4.2.2* of *FPHC*, the problem with this micro-classification (from Barrow's work) is that the civilization types (with the exception of Type Ω -Minus, for example) are not quite distinct, since many of them can be achieved more or less in a civilization, to the extent that Type II-minus and Type III-minus, just to cite two plausible types, can be historically contemporaneous, relatively speaking, unlike the vast historical distance between, say, Type O and Type I (or Type I and Type II) civilizations. In other words, the micro-classification here is not very useful to understand civilization types but is revealing to see the technological frontiers of the micro-world.

Sources: A reconstruction from J.Barrow (1998:133), as originally shown in *Table 4.7* of *FPHC*. See *FPHC* for more info.

**Table 1.6. Finity, Transfinity, and Infinity
(Part I)**

• **Infinity**

- The term “infinity,” which is “symbolically represented with ∞ ,” derives from the Latin *infinitas* (or “unboundedness”), to refer to “several distinct concepts—usually linked to the idea of 'without end'—which arise in philosophy, mathematics, and theology.” (WK 2008c)
- In the context of mathematics, “infinity” is often “treated as if it were a number (i.e., it counts or measures things: 'an infinite number of terms') but it is a different type of 'number' from the real numbers. Infinity is related to limits,...large cardinals,...projective geometry, extended real numbers and the absolute Infinite,” for instance. (WK 2008c)

• **Transfinity**

- To avoid confusion, my usage of the word “transfinite” (as used here in the ontological principle) is not the same as the one which was originally coined by Georg Cantor to refer to “cardinal numbers or ordinal numbers that are larger than all finite numbers, yet not necessarily absolutely infinite” (in the mind of God), as opposed to “relative” infinity (in the mind of Man). (WK 2008d) In other words, for Cantor, there are two kinds of infinity, “absolute” and “relative”—with “relative” infinity or “transfinity” (in the mind of Man) being dependent on “absolute” infinity (in the mind of God) for its existence.
- By contrast, my usage of the word “transfinite” here differs radically from the one used by Cantor (and other mathematicians) and is more limited, in light of the problems confronting any attempt to understand the idea of infinity, be it by intuition, imagination, and conception (as already shown in the previous three sub-sections).
- With this clarification in mind, I allow numbers which can be many times larger—or smaller, for that matter—than the finite things that we encounter in daily life, but they do not have to be related to the idea of infinity at all (which may not exist).

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**Table 1.6. Finiteness, Transfiniteness, and Infinity
(Part II)**

• Transfiniteness (*cont'd*)

- Of course, there may be some *borderline* cases, in which it is not clear whether the number in question is transfinite (in my usage) or simply a mathematical convenience. A good example of a borderline case is the Planck unit of length for “the smallest space possibly measured in nature,” which is “less than billionths of trillionths of trillionths of an inch” (or something like 1.6×10^{-35} meters). (P. Baofu 2006a; N. McAleer 1987: 219; WKV 2008; D. Corbett 2008)
- The ideas concerning symmetry and dimensions in the examples above were addressed in Chapter Three and Chapter Four of *FPHG*. For now, it suffices to further add that it is mind-boggling to even conceive or imagine extreme numbers like the Planck unit of length (or others). Does it really exist at all? Or is it merely a mathematical convenience to describe a physical situation that the human mind does not understand properly?
- In any event, “transfiniteness” (in my usage) can be used as a further extension (of number) to the finite numbers in daily life—albeit with some borderline cases in mind.

• Finiteness

- It refers to numbers which are bounded (that is, with an end), especially (though not exclusively) in relation to things in everyday life.

Source: From *Sec. 1.4* and *Sec. 2.2.3* of *FPHG*

Table 1.7. Theoretical Speculations of Multiverses

-
- **“Baby Universes” (Ex: Andre Linde and others)**
—Ex: In a flat universe theory, “even if our part of it eventually collapses,...some spots in the cosmos would suddenly start inflating on their own, creating brand-new "baby universes.” (P. Baofu 2000: 623)
 - **“Parallel Universes” (Ex: Stephen Hawking and others)**
—Ex: In quantum cosmology, there allows the existence of infinite numbers of parallel universes, with tunneling among them. (M. Kaku 1994: 256) Hawking later revised his views on this.
 - **“Pocket Universes” (Ex: Alan Guth)**
—Ex: “As the pocket universes live out their lives and recollapse or dwindle away, new universes are generated to take their place....While life in our pocket universe will presumably die out, life in the universe as a whole will thrive for eternity.” (A. Guth 1997: 248; P. Baofu 2002: 482)
 - **“Brane Worlds” (Ex: Warren Siegel, Lisa Randall, and others)**
—Ex: Our universe is stuck on a membrane of space-time embedded in a larger cosmos, with different brane worlds connecting and/or colliding with each other.

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Source: From *Table 4.8* of *FPHC*

**Table 1.8. The Confusion between “Many Worlds” and “Multiverse”
(Part I)**

• **First Problem**

- The first problem in this second confusion concerns a debate between the “many-worlds” interpretation of quantum mechanics by Hugh Everett (1957) and others, and the Copenhagen interpretation by Niels Bohr and Werner Heisenberg on the effects of quantum states after interacting with an external environment (e.g., by a measuring observer).
- On the one hand, the Copenhagen interpretation of quantum mechanics is more indeterministic in its concern with the probabilities of the outcomes of a wave function after interacting with an external environment (e.g., by a measuring observer using light to detect, for example, “an electron in a particular region around the nucleus at a particular time.” (WK 2008e) Each wave function for the state of a particle refers to “a mathematical representation used to calculate the probability for it to be found in a location, or state of motion.” (WK 2008f) And the “wavefunction collapse” means that “the act of measurement causes the calculated set of probabilities to ‘collapse’ to the value defined by the measurement.” (WK 2008f)
- On the other hand, the Everett’s interpretation is more deterministic, in rejecting “the objective reality of wavefunction collapse” and “instead explaining the subjective appearance of wavefunction collapse with the mechanism of quantum decoherence.” (WK 2008g) The words “quantum decoherence” here refers to “the mechanism by which quantum systems interact with their environments to exhibit probabilistically additive behavior,” in such a way that “the quantum nature of the system is simply ‘leaked’ into the environment.” (WK 2008g) For example, “[a]s a result of an interaction, the wave functions of the system and the measuring device become entangled with each other. Decoherence happens when different portions of the system’s wavefunction become entangled *in different ways* [italic added] with the measuring device....” (WK 2008g) Thus, for Everett, the appearance of “wavefunction collapse” can be explained by “quantum decoherence” for quantum states to branch out in different independent worlds after interacting with an external environment.

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**Table 1.8. The Confusion between “Many Worlds” and “Multiverse”
(Part II)**

• **First Problem (*cont’d*)**

- Yet, a major criticism against Everett’s interpretation is that these different independent worlds in Everett’s sense “will never be accessible to us,” because of the interference by the measuring observer in an external environment. (WK 2008g)
- For illustration, “once a measurement is done, the measured system becomes entangled with both the physicist who measured it and a huge number of other particles, some of which are photons flying away towards the other end of the universe; in order to prove that the wave function did not collapse one would have to bring all these particles back and measure them again, together with the system that was measured originally. This is completely impractical, but even if one can theoretically do this, it would destroy any evidence that the original measurement took place (including the physicist’s memory).” (WK 2008g)
- But then, the critics ask, If these independent worlds in Everett’s sense are inaccessible to us, how do we know much of anything really about them?

• **Second Problem**

- What is relevant at the quantum mechanical level may not necessarily apply to the world at the physical level.
- In fact, the persistent inability among contemporary physicists to unify the theory of relativity for large objects at the physical level and quantum mechanics for tiny objects at the quantum mechanical level should warn us about the danger of reductionism, by reducing the understanding of different universes (“parallel universes”) at the physical level from a generalization of “many worlds” at the quantum mechanical level.

• **Third Problem**

- There is no empirical evidence to suggest that there are infinite (or extremely many) possible worlds in the cosmos as the many-worlds model by Everett would have us to believe.

Source: From Sec. 4.4.1 of FPHG

**Table 1.9. Hyperspace and Its Challenge
(Part I)**

• First Problem

- Hyperspace for intra- and inter-universal travel is assumed to be possible, on the basis of four main assumptions; although there may be others, these are the often cited ones.
- The first assumption concerns the existence of “entry” and “exit” points in hyperspace, which is easier said than done to enter, go through, and then exit hyperspace.
- For instance, using hyperspace “requires complex calculations...of single or multiple hyperspace jumps and the control of the jump....Perturbations such as those experienced by ship in space from the gravitational field around an object such as a planet or even a star are exacerbated in hyperspatial travel, since mass in real space distorts hyperspace in an equal measure. 'Jumping' near to a gravitational mass is likely to make resulting exit from hyperspace to be highly uncertain, with the level of improbability i increasing with the square of the distance to the nearest gravitational 'well.'” (WK 2008h)
- Besides, “[o]nly spaceships equipped with a special force field can enter hyperspace, because exposure to hyperspace even for short period of time is hazardous to unprotected humans.” (WK 2008h)

• Second Problem

- The second assumption concerns the faster-than-light speed. It is well known that Einstein argued for the speed of light as the ultimate limit, but nowadays physicists do allow the violation of this limit under certain conditions (like the hypothetical existence of tachyons, as will be explained further in a later sub-section on time travel).
- Even then, there is a challenge to explain in science fiction “why ships can travel faster than light in hyperspace,” and two good arguments are that “hyperspace may be smaller than real space and therefore a star ship's propulsion seems to be greatly multiplied, or else the speed of light in hyperspace is not a barrier as it is in real space. Whatever the reasoning, the general effect is that ships traveling in hyperspace seem to have broken the speed of light, appearing at their destinations much more quickly and without the shift in time that the Theory of Relativity would suggest.” (WK 2008h)

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**Table 1.9. Hyperspace and Its Challenge
(Part II)**

• **Third Problem**

—The third assumption concerns the speed of time (to be measured, say, by a clock), but this is elaborated in a different section on the related issue of “time travel” (as shown in a different table on time travel).

• **Fourth Problem**

—The fourth assumption concerns spatial shortcut, as it is possible, because of the curvature of space, in that “the manifold of ordinary three-dimensional space is curved in four or more 'higher' spacial dimensions (a 'hyperspace' in the geometric sense...). This curvature causes certain widely separated points in three-dimensional space to nonetheless be 'adjacent' to each other four-dimensionally. Creating an aperture in 4D space (a wormhole) between these locations can allow instantaneous transit between the two locations; a common comparison is that of a folded piece of paper, where a hole punched through two folded sections is more direct than a line drawn between them on the sheet. This idea probably arose out of certain popular descriptions of General Relativity and/or Riemannian manifolds, and may be the original form from which later concepts of hyperspace arose.” (WK 2008h)

—But this does not mean that hyperspace is always safe. In fact, “in some science fiction, the danger of hyperspace travel is due to the chance that the route through hyperspace may take a ship too close to a celestial body with a large gravitational field, such as a star. In such scenarios, if a starship passes too close to a large gravitational field while in hyperspace, the ship is forcibly pulled out of hyperspace and reverts to normal space. Therefore, certain hyperspace 'routes' may be mapped out that are safe, not passing too close to stars or other dangers.” (WJ 2008h)

Source: From *Sec.4.4.1* of *FPHG*

**Table 1.10. The Problems of Time Travel into the Future
(Part I)**

• First Problem

- The first problem concerns “time dilation under the Theory of Special Relativity” (which separates space-time from mass-energy as special cases). Suppose you are on a moving train and an observer outside the train is watching you along the tracks. As your train moves along at the speed of light (or something close to it), “time, as measured by your watch, ticked along at a slower pace than time measured by the observer. Not only that, distance changed, too. For the observer, a one-foot ruler whizzing by on the train would have measured less than a foot.” (NO 2000)
- In fact, you may not even notice that this slower clicking of the clock; in fact, everything looks normal to you inside the train as it was before: “The weird thing is that, for you on the train, time wouldn’t seem to be moving slower and your ruler wouldn’t be shorter—all would appear normal.” (NO 2008) By contrast, you instead think that “time on the rest of the Earth would appear to be ticking along slower and its rulers would be shorter.” (NO 2000) So, both of you insist that the other clock (not his) is clicking more slowly—assuming, of course, an inertial frame of reference.
- Now, change the story a bit, in that, this time, instead of an “inertial reference frame,” acceleration is allowed, and you are on your way to board a spaceship. As an illustration, suppose “[y]ou board a spaceship and take off for deep space. The ship approaches the speed of light. Time for you seems to pass as it always has. It takes you about five seconds to tie your shoe. But to an observer on Earth (assuming he or she could watch you), you are moving at a snail’s pace. It takes hours to tie your shoe.” (NO 2000) In any event, “you continue on your journey. You slow down, stop, and accelerate back to Earth. You arrive home. You have aged two years during your flight. Two hundred years have passed on Earth. You have successfully travelled forward through time.” (NO 2000) In this case, both the observer (if he is still alive) and you agree that you have aged less.

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**Table 1.10. The Problems of Time Travel into the Future
(Part II)**

• **First Problem (*cont'd*)**

—In other words, when you are back to Earth, a lot of things have changed since, and you may find rather strange to be in a new environment which you hardly recognize, when compared with what you used to think as your city, or the Earth (two years ago, well, in accordance to your time of measurement). This means that you are in the future (two hundred years later), even though you are still relatively young (only two years older). But, can you go back? Well, no. The reason is that “[a]ccording to relativity, you can only move through time in one direction.” (NO 2000)

• **Second Problem**

—The second problem concerns “time dilation under the Theory of General Relativity” (which unifies space-time with mass-energy in a general theory), the same result of time dilation occurs.

—For instance, when “one clock is deeper in a gravity well than the other,” a result is that “the clock deeper in the well” will “tick...more slowly; this effect must be taken into account when calibrating the clocks on the satellites of the Global Positioning System, and it could lead to significant differences in rates of aging for observers at different distances from a black hole.” (WK 2008i)

—More precisely, by way of another example, “it has been calculated that, under general relativity, a person could travel forward in time at a rate four times that of distant observers by residing inside a spherical shell with a diameter of 5 meters and the mass of Jupiter. For such a person, every one second of their 'personal' time would correspond to four seconds for distant observers. Of course, squeezing the mass of a large planet into such a structure is not expected to be within our technological capabilities in the near future.” (WK 2008i; R. Gott 2002)

—The point here, however, is that time travel into the future, in this sense, is allowed, theoretically speaking, but in a very limited way, from the theory of relativity. But one can also ask, What if the theory of relativity were wrong? Well, in that case, there would be a need to find a better theory to explain time travel into the future.

**Table 1.11. The Problems of Time Travel into the Past
(Part I)**

• **First Problem**

- The first problem concerns the faster-than-light-speed, since, in accordance to the theory of special relativity, when an object goes faster than the speed of light, something weird can happen, in that, instead of having the clock clicking more slowly, it is moving backward, in relation to some inertial frame of reference—which then raises the issue of whether time travel into the past is possible at all.
- But the problem here is about the violation of the law of causality. In everyday language, an excellent illustration of causality violation is that, suppose you travel back into the past and then kill your parents, this then means that you could not have been born. But this is not true, since you are alive.
- Yet, “in the case of a hypothetical signal moving faster than light, there would always be some frames in which the signal was received before it was sent, so that the signal could be said to have moved backwards in time.” The violation of causality exists in this case.
- The first part of the problem is that, in accordance to the theory of special relativity, “it would take an infinite amount of energy to accelerate a slower-than-light object to the speed of light”—let alone the energy needed to propel an object to go faster than the speed of light. (WK 2008i) Although some suggest the possibility of “negative energy,” it remains to be seen to what extent this is true.
- And the second part of the problem is that, “although relativity does not forbid the theoretical possibility of tachyons which move faster than light at all times, when analyzed using quantum field theory it seems that it would not actually be possible to use them to transmit information faster than light and there is no evidence for their existence.” (WK 2008i; S. Chase 1993)

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**Table 1.11. The Problems of Time Travel into the Past
(Part II)**

• **Second Problem**

- The second problem concerns cosmic string and black holes, since it is the theory of general relativity which “extends the special theory to cover gravity, illustrating it in terms of curvature in spacetime caused by mass-energy and the flow of momentum.” (WK 2008i)
- On the other hand, “[g]eneral relativity describes the universe under a system of field equations...and there exist solutions to these equations that permit what are called 'closed time-like curves,' and hence time travel into the past....The first of these was proposed by Kurt Gödel, a solution known as the Gödel metric, but his (and many others') example requires the universe to have physical characteristics that it does not appear to have.” (WK 2008i; K. Thorne 1994)
- But then, the problem now becomes: “Whether general relativity forbids closed time-like curves for all realistic conditions is unknown.” (WK 2008i)

• **Third Problem**

- The third problem concerns wormholes and related ones, and “[w]ormholes are a hypothetical warped spacetime which are also permitted by the Einstein field equations of general relativity, although it would be impossible to travel through a wormhole unless it was what is known as a traversable wormhole.” (WK 2008i; M. Visser 1995) In other words, “a wormhole is a hypothetical topological feature of spacetime that is fundamentally a 'shortcut' through space and time. Spacetime can be viewed as a 2D surface, and when 'folded' over, a wormhole bridge can be formed. A wormhole has at least two mouths which are connected to a single throat or tube. If the wormhole is traversable, matter can 'travel' from one mouth to the other by passing through the throat.” (WK 2008j)
- But the problem here is three-fold, as shown in what follows.

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**Table 1.11. The Problems of Time Travel into the Past
(Part III)**

• **Third Problem (*cont'd*)**

- The first part of the problem is that “there is no observational evidence for wormholes.” (WK 2008j)
- The second part of the problem is that it is not clear how exactly wormholes (and black holes, for that matter) could allow time travel into the past at all.
- And the third part of the problem is that if using wormholes (and black holes, for that matter) to travel into the past requires something to go faster than light too, then this raises another issue concerning the two problems as previously indicated in the sub-section on the faster-than-light-speed.

• **Fourth Problem**

- The fourth problem is that some physicists have argued that, even should time travel into the past be possible, by way of these three methods, the person still would not return to the same past history that he exactly experienced before, but in a different one. (WK 2008i)
- In other words, “strictly speaking,” time travel into the past is not “really” possible, in light of these criticisms, so there is no need to worry that one could travel into the past and kill one’s parent, as a way to violate the law of causality.

Source: From *Sec. 4.4.2 of FPHG*

**Table 1.12. The Conceptual Dimensions of Consciousness
(and Other Mental States)**

- **On Heredity and Time**
 - Heredity and the Environment
 - The Past and the Present

- **On Layers of Mental States and Abnormality**
 - Consciousness, Unconsciousness, and Preconsciousness
 - Normality and Paranormality

- **On Organicity and Motivation**
 - Mechanicity and Organicity
 - Primary Motivations and Multiple Motivations

- **On Other (Mostly Epistemic) Considerations**
 - Synthesis and Analysis
 - Situation and the Subject
 - Process and Outcome
 - Reasoning and Other Modes of Thinking
 - Meta-Conceptual Nominalism and Realism

Notes:: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*. A re-construction, but with my own contribution, originally from G.Lindzey & C.Hall, *Introduction to Theories of Personality* (NY: John Wiley & Sons, 1985).

**Table 1.13. The Theoretical Levels of Consciousness
(and Other Mental States)
(Part I)**

- **At the Micro-Physical Theoretical Level**
 - Quantum-Mechanics
 - Electromagnetism

- **At the Chemical Theoretical Level**
 - Biochemistry

- **At the Biological Theoretical Level**
 - Evolutionary Biology
 - Neuroscience
 - Artificial Intelligence

- **At the Psychological Theoretical Level**
 - Psychodynamic Psychology
 - Psychoanalytical Psychology
 - Analytical Psychology
 - Socially Oriented Psychology
 - Experimental (Behavioral) Psychology
 - Operant Reinforcement Theory
 - Stimulus-Response Theory
 - Social Learning Theory
 - Cognitive (Gestalt) Psychology
 - Humanist Psychology
 - Existential Psychology
 - Field Theory
 - Psychometric Psychology
 - Idiographics
 - Constitutional Psychology
 - Social Psychology
 - Symbolic Interactive Theory
 - Social Exchange Theory

(continued on next page)

**Table 1.13. The Theoretical Levels of Consciousness
(and Other Mental States)
(Part II)**

• **At the Organizational Theoretical Level**

- Managerial-Bureaucratic Theory
- Oligarchic Theory
- Network Theory

• **At the Institutional Theoretical Level**

- Functionalist Theory
- Anomic Theory

• **At the Structural Theoretical Level**

- Conflict Theory
 - Marxian Theory
 - Critical Theory
 - Weberian Theory
- Games Theory (in Formal Theory)
- Feminist Theory
 - Feminist Concerns
 - Feminist Hopes

• **At the Systemic Theoretical Level**

- Equilibrium Theory
- System Theory
- Chaos Theory

• **At the Cosmological Theoretical Level**

- Superluminal Model
- The Theory of Floating Consciousness

(continued on next page)

**Table 1.13. The Theoretical Levels of Consciousness
(and Other Mental States)
(Part III)**

• **At the Cultural Theoretical Level**

—Substantive Theories

- Structuralist Theory
- Post-Structuralist Theory (in Postmodernism)

—Meta-Theories

- Epistemic Objectivism vs. Epistemic Historicism
- Epistemic Subjectivism vs. Epistemic Non-Subjectivism
 - Phenomenology
 - Ethnomethodology
 - Hermeneutics
- Epistemic Relativism vs. Epistemic Absolutism
- Epistemic Reductionism vs. Epistemic Emergencism

• **At Other Levels**

—Structuration Theory

—Reflexive Socioanalysis

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Source: From many different sources as indicated in *FPHC*

**Table 1.14. The Thematic Issues of Consciousness
(and Other Mental States)**

• **The Factor of History**

- Pre-Modernity
- Modernity
- Postmodernity
- After-Postmodernity

• **The Importance of Needs**

- Having (e.g., the everyday, the technological)
- Belonging (e.g., the just and the good)
- Being (e.g., the true, the holy, the sublime/beautiful, and the good)

Notes: These examples are solely illustrative (not exhaustive). Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. Also, some categories overlap with others; for instance, the good is also related with being-ness, just as the everyday can be connected with belong-ness.

Sources: From *FPHC*, based on *FHC* and *FCD*

**Table 1.15. Having, Belonging, and Being
in Consciousness**

- **Having (e.g., About the Everyday and Technological)**
 - Ex: Physiological needs (e.g., thirst, hunger, sex)
 - Ex: Safety (e.g., stability, freedom from fear and anxiety)

- **Belonging (e.g., About the Good and Just)**
 - Ex: Social interaction
 - Ex: Friendship, acquaintance
 - Ex: Love, family
 - Ex: Self-respect, respect from others

- **Being (e.g., About the True, Holy, Beautiful/Sublime, and Good)**
 - Ex: Understanding of reality about self and world
 - Ex: Spiritual quest for holiness, beauty, sublimity, and goodness

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*, based on *FHC* and *FCD*

**Table 1.16. The Having-Ness of Consciousness
(and Other Mental States)**

- **At the Micro-Physical Level**
—Ex: The finer physics of nutrition
- **At the Chemical Level**
—Ex: Food guide pyramid
- **At the Bio-Psychological Level**
—Ex: The hierarchy of needs
- **At the Institutional Level**
—Ex: The production of commodity fetishism
- **At the Organizational Level**
—Ex: Mass standardization (and customization); bureaucratic rationality
- **At the Structural Level**
—Ex: The divide between the haves and the have-nots
- **At the Cultural Level**
—Ex: The bondage of greater expectations
- **At the Systemic Level**
—Ex: The technological transformation of poverty with transvaluations
- **At the Cosmological Level**
—Ex: Floating consciousness in deep space without the human physiological needs

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*. See also *FCD* and *FHC*.

**Table 1.17. The Belonging-Ness of Consciousness
(and Other Mental States)**

- **At the Micro-Physical Level**
—Ex: Statistical physics and social networks
- **At the Chemical Level**
—Ex: Olfaction and social relations
- **At the Bio-Psychological Level**
—Ex: Dual human nature on relationships
- **At the Institutional Level**
—Ex: Private property and social cleavage
- **At the Organizational Level**
—Ex: Legal formalism and iron cage
- **At the Structural Level**
—Ex: Class conflicts and social alienation
- **At the Cultural Level**
—Ex: Ruthless society and the culture of law
- **At the Systemic Level**
—Ex: Human extinction and post-human relations
- **At the Cosmological Level**
—Ex: The transcendence of equality in the cosmos and beyond

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*. See also *FCD* and *FHC*.

**Table 1.18. The Being-Ness of Consciousness
(and Other Mental States)
(Part I)**

- **At the Micro-Physical Level**
—Ex: Space-time and matter-energy in classical mechanics, quantum mechanics, and the theory of relativity
- **At the Chemical Level**
—Ex: Drugs and well being
- **At the Biological Level**
—Ex: Neuroscience and mystical experiences
- **At the Psychological Level**
—Ex: Reductionism and emergencism
- **At the Institutional Level**
—Ex: The proliferation of cults and sects, and the corporate-art industry
- **At the Organizational Level**
—Ex: The organization of ideas in the scheme of things
- **At the Structural Level**
—Ex: Disciplinary power and control in the order of things
- **At the Systemic Level**
—Ex: Mutualism and ecological psychology
- **At the Cultural Level**
—Ex: The recurrence of competing spirits, and floating consciousness as a climax of evolution

(continued on next page)

**Table 1.18. The Being-Ness of Consciousness
(and Other Mental States)
(Part II)**

• **At the Cosmological Level**

—Ex: The search for elsewherewhen, and the evolution of other consciousnesses (e.g., the hyper-spatial consciousness)

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*. See also *FCD* and *FHC*.

**Table 1.19. Cognitive Partiality
in Different Mental States**

• **The Conscious**

—*Biased*

Ex: Self-overratingness

Ex: Self-modesty

Ex: Self-fulfilling prophesy

—*Shallow*

Ex: Attribution error

Ex: Heuristics

Ex: Illusory thinking

—*Short-term*

Ex: Deindividuation

—*Materialistic*

Ex: Hierarchy of needs

• **The Subconscious**

Ex: mental reconstruction

Ex: stereotyping

• **The Unconscious**

Ex: automatic processing

Ex: cognitive intuition

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Source: From *BCPC*

**Table 1.20. Emotional Non-Neutrality and Behavioral Alteration
in Different Mental States**

• **The Emotional**

- Conscious*
Ex: Feelings
- Subconscious*
Ex: Moods
- Unconscious*
Ex: Empathy
Ex: Instincts

• **The Behavioral**

- Conscious*
Ex: Foot-in-the-door
Ex: Role playing
Ex: Saying-is-believing
- Subconscious*
Ex: Discrimination
- Unconscious*
Ex: Non-Verbal Communication

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Source: From *BCPC*

Table 1.21. The Limits of Intuition in Unconsciousness

• Cognitive Intuition (or Intuitive Thinking)*—Features*

Ex: mental schemas

Ex: expertise

Ex: blindsight

—Problems

Ex: inaccurate

Ex: non-explanatory

• Emotional Intuition*—Features*

Ex: empathy

Ex: instincts

—Problems

Ex: over-generalized

Ex: non-explanatory

• Behavioral Intuition*—Features*

Ex: prosemics

Ex: kinesics

—Problems

Ex: unreliable

Ex: non-explanatory

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Source: From *BCPC*

**Table 1.22. The Wealth/Poverty Dialectics in Different Mental States:
The Case of Cognition**

• **The Conscious**

—*Biased*

Ex: If richer in self-serving bias, then poorer in understanding others

—*Shallow*

Ex: If richer in heuristic thinking, then poorer in comprehending reality

—*Short-term*

Ex: If richer in short-term tendency, then poorer in long-term planning

—*Materialistic*

Ex: If richer in physiological obsession, then poorer in spiritual enlightenment

• **The Subconscious**

Ex: If richer in mental reconstruction, then poorer in accuracy of recall

Ex: If richer in stereotyping, then poorer in understanding groups

• **The Unconscious**

Ex: If richer in automatic processing, then poorer in depth of analysis

Ex: If richer in cognitive intuition, then poorer in reliability of judgments

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Source: From *BCPC*

**Table 1.23. The Wealth/Poverty Dialectics in Different Mental States:
The Case of Emotion and Behavior**

• **Emotion**

—*Conscious*

Ex: If richer in relying on familiarity and similarity for social attraction, then poorer in having diverse social relations

—*Subconscious*

Ex: If richer in moodiness, then poorer in sober thinking

—*Unconscious*

Ex: If richer in empathy, then poorer in task-oriented efficiency

Ex: If richer in instincts, then poorer in critical thinking

• **Behavior**

—*Conscious*

Ex: If richer in foot-in-the-door technique, then poorer in instant Gratification

Ex: If richer in role playing, then poorer in identity stability

—*Subconscious*

Ex: If richer in discriminating, then poorer in social harmony

—*Unconscious*

Ex: If richer in kinesics and proxemics, then poorer in verbal skills, relatively speaking.

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Source: From *BCPC*

**Table 1.24. The Theoretical Debate on Nature vs. Nurture
(Part I)**

• **The Environmental Approach**

- Thesis*: It focuses, relatively speaking, more on the environment (culture and society) in explaining the achievement gap among individuals and for that matter, countries or regions, when contrasted with the natural factors.
- Discourse*: Examples include Jose Ortega y Gasset (“Man has no nature; what he has is history”), Ashley Montagu (“Man is man because he has no instincts, because everything he is and has become he has learned from his culture, from the man-made part of the environment, from other human beings”), Stephen Jay Gould (“[The] brain [is] capable of a full range of behaviors and predisposed to none”), and Jesse Jackson (who blames white racism for the failure of blacks to close the achievement gap between whites and blacks in America). The works on dependency theory in international political economy (with a Marxian influence) and on the Protestant work ethic (by Max Weber) also point to this environmental direction.

• **The Genetic Approach**

- Thesis*: It focuses instead, relatively speaking again, on hereditary factors (e.g., genes and evolution) in explaining the achievement gap among individuals and for that matter, countries or regions, when contrasted with the environmental factors.
- Discourse*: Examples are Hans Eysenck and William Sheldon (in constitutional psychology), Konrad Lorenz (in his work on innate aggressive human nature), Gary Marcus (on the complexities of human thought by a tiny number of genes) and Robert Plomin, together with Michael Owen and Peter McGuffin (on the genetic basis of complex human behaviors).

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**Table 1.24. The Theoretical Debate on Nature vs. Nurture
(Part II)**

• **The Compromise Approach**

- Thesis*: It seeks the middle-of-the-road argument in regard to nature and nurture and regards all differences among individuals and groups as the result of the mixture of both nature and nurture, more or less equally.
- Discourse*: Examples include C. Murray and R. Herrnstein (“It seems highly likely to us that both genes and environment have something to do with this issue”) and Dan Dennett (“Surely 'everyone knows' that the nature-nurture debate was resolved long ago, and neither side wins since everything – is – a – mixture – of – both – and - it’s – all – very -complicated....”)

• **The Transcendent Approach**

- Thesis*: It goes beyond both nature and nurture (without, however, committing the compromise fallacy) in showing their closely intertwined interactions in producing the behavioral differences as often seen in individual human endeavors on the micro scale, and for that matter, in country (or regional) endeavors on the macro one—in the context of my five theses, namely, (a) the compromise fallacy, (b) no oppression without self-oppression, (c) no success without failure, (d) the factor of randomness, and (e) the post-human vision, to be elaborated in Chapter Six.
- Discourse*: Peter Baofu proposed this approach on the basis of his “theory of contrastive advantages” (as an original theoretical contribution to the debate, which was first proposed and analyzed in *The Future of Capitalism and Democracy*). In the end, the human genes will not last, to be eventually superseded by post-human life forms, so the debate between genes and memes has obscured something profoundly important about the future that the world has never known. And the debate is also misleading and faulty in its dichotomy.

Source: From *BNN*. See the book for citations and details.

Table 1.25. Physical Challenges to Hyper-Spatial Consciousness

• The Understanding of a Higher-Dimensional World of Space-Time

—Ex: 4 for traditional aspects of space-time (e.g., length, width, breadth and time) plus 6 more new dimensions in theory of hyper-space, with profound implications for practical applications to new forms of consciousness.

• The Mastering of Dark Matter and Dark Energy

—Ex: “ordinary matter” (e.g., atoms, molecules) as a mere 4.4% of the universe, with 23% made of “cold dark matter” and the rest (about 73%) of mysterious “dark energy,” with fundamental significance to questions about the limit of the speed of energy (or info), the availability of energy for use, and the nature of space-time, just to cite some examples.

• The Exploration of Multiverses

—Ex: theoretical speculation of other universes (e.g., “baby universes,” “gateways” in black holes, “wave function of the universe,” “many worlds,” “brane worlds”), with potentially seminal discoveries of different physical laws in relation to matter-energy and space-time, and vital differences to the future of post-human conquest of other universes (for the emergence of new forms of consciousness).

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. The point here is to give a rough picture of the evolution of consciousness to the hyper-spatial consciousness and others totally unknown to current earthlings. As a note of clarification, it makes no difference to my argument as to whether or not the hyper-spatial consciousness may emerge before, during, and after floating consciousness.

Source: From *Table 4.5 of FPHC*

**Table 1.26. The Theory of Floating Consciousness
(Part I)**

- **At the Micro-Physical Level**
—Ex: intelligent life without the human physical-chemical system
- **At the Chemical Level**
—Ex: space radiation and toxins
- **At the Bio-Psychological Level**
—Ex: exo-biological evolution in deep space
—Ex: genetic engineering of new beings
- **At the Institutional Level**
—Ex: post-capitalism
—Ex: post-democracy
- **At the Organizational Level**
—Ex: less legal-formalistic routines
- **At the Structural Level**
—Ex: alien forms of violence
- **At the Cultural Level**
—Ex: transcending freedom
—Ex: transcending equality

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**Table 1.26. The Theory of Floating Consciousness
(Part II)**

- **At the Cosmological Level**

- Ex: parallel universes

- Ex: pocket universes

- **At the Systemic Level**

- Ex: space habitats (in zero-gravity)

Notes: Each example draws from the works of different scholars in the field. For instance, at the cosmological level, the idea of parallel universes is from the theoretical speculation in quantum cosmology by Stephen Hawking and others, while the one of pocket universes comes from the theoretical work of Allan Guth at MIT. And at the institutional level, I proposed post-capitalism and post-democracy in *FCD* (and later, from *BDPD* and *BCPC*). In addition, the examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From *FPHC*—and, originally, from *FCD*

Table 1.27. The Potential of Unfolding Unconsciousness**• Superior Senses***—Through space*

- Ex: clair-sentience (in feeling)
- Ex: clair-voyance (in seeing)
- Ex: clair-audience (in hearing)
- Ex: clair-austance (in tasting)
- Ex: clair-aliense (in smelling)
- Ex: clair-cognizance (in knowing)

—Through time

- Ex: pre-cognition (in knowing), pre-sentiment (in feeling)
- Ex: retro-cognition (in knowing), retro-sentiment (in feeling)

• Superior Contacts*—With living minds*

- Ex: telepathy

—With the dead

- Ex: mediumship

—With other-living entities

- Ex: telekinesis

Notes: The categories and examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: A summary of Ch.5 of *FPHU*

Table 1.28. The Future Exploration of Unfolding Unconsciousness

- **In the Context of Nature**

- Ex: the higher-dimensional space-time in hyperspace theory
- Ex: the particle-wave interactions in quantum mechanics
- Ex: the study of brain waves in electromagnetic theory

- **In the Context of the Mind**

- Ex: the unconscious fantasies in psychoanalysis
- Ex: the mind-altering drugs in biochemistry
- Ex: the manipulation of neural activity in neurobiology

- **In the Context of Culture**

- Ex: the correlation between anomalous experience and moral/religious/aesthetic interests in culture studies
- Ex: the role of myths and language in epistemology

- **In the Context of Society**

- Ex: different organizational agendas in anomalous research
- Ex: the scholarly divide on anomalous study
- Ex: interests and propaganda in institutional research
- Ex: the transformative power of technology in research on social systems
- Ex: the natural and non-natural selection of other worlds in exo-biology
- Ex: the role of the post-human conscious mind in qualitative demography

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: A summary of Chs.2-5 of *FPHU*, in conjunction with the rest of the book

Table 1.29. Creative Techniques and Traits**• Creative Techniques**—*Comprehensiveness*

- Ex: Broadness of Scope
- Ex: In-Depth Analysis
- Ex: Multifaceted Taxonomy
- Ex: Numerous Theories

—*Arrangement*

- Ex: Separation (or Subtraction)
- Ex: Combination (or Addition)
- Ex: Replacement
- Ex: Reversal
- Ex: Accommodation
- Ex: Stretching

—*Serendipity*

- Ex: Play
- Ex: Chance

• Creative Traits—*Openness / Risk*

- Ex: Ability to welcome new ideas or to do new things, with risk

—*Discipline*

- Ex: Ability to sacrifice whatever it takes to succeed

—*Resilience / Confidence*

- Ex: Ability to take failures to mind, not to heart

—*Trust*

- Ex: Ability to cooperate with others for team work, if necessary

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec.4.2* of *FPHCT*. For more details, also read the rest of the book.

**Table 1.30. The Desirability of Creativity, and Its Dark Sides
(Part I)**

• In Relation to Instrumental Rationality*—Desirability*

- Ex: For the sake of efficiency and effectiveness in this capitalist era of our time.

—Undesirability

- Ex: What Max Weber (1930) called the “iron cage” of capitalism, where live the “sensualists without heart, specialists without spirit”—or something which the Frankfurt School has forcefully asked us to be freed from.

• In Relation to Substantive Rationality*—Desirability*

- Ex: For the sake of God, the King, Motherland, or other comparable ideals.

—Undesirability

- Ex: Domination and oppression of various forms—something which the moderns had struggled to free themselves from in the first place, since the dawn of modernity.

• In Relation to Autonomous Rationality*—Desirability*

- Ex: For the sake of itself, the autonomy of creative endeavor.

—Undesirability

- Ex: The decadence of its own degeneration (e.g., the donwsides of postmodernism in our postmodern times, or what Nietzsche once called the unbearable “unreality” and “falseness” of the autonomous artist’s “innermost existence”—and, in other cases, the painful suffering from different mental illnesses for those highly creative individuals).

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**Table 1.30. The Desirability of Creativity, and Its Dark Sides
(Part II)**

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Also, I already went to great lengths to explain the desirability and its dark sides of all these three rationalities (although there may be others too) in the two volumes of *FHC*—and, for that matter, *FCD*.

Source: From *Sec. 4.9* of *FPHCT*. For more details, also read the rest of the book.

Table 1.31. Posthuman-Ism, Post-Humanism, and Trans-Humanism

• Post-Humanism

- The neologism “post-human” used in my books should *not* be confused with another term which looks similar but has a totally different meaning in the literature of postmodernism, namely, “post-humanism”—which constitutes a critique of “humanism” as traditionally understood (especially, though not exclusively, in relation to the idea of progress in science and reason in the Enlightenment project). (WK 2008)
- My works reject the project of “postmodernism” and propose the future world of what I originally called “after-postmodernity” in *FHC* and *FCD*, for instance.

• Trans-Humanism

- Also, the neologism “post-human” used in my books should *not* be confused with a similar term which is used to champion the ideology of technology for the future co-existence between humans and cyborgs in “trans-humanism.” (WK 2008a)
- Instead, my term “post-human” in relation to “posthuman-ism” also rejects “trans-humanism” (especially, though not exclusively, in relation to the promises of technology) and refers to something else altogether, that is, the future extinction of humans and its post-human successors in deep space and beyond unto multiverses.
- Chapter Two of my book on ethics (*BEPE*) provides a more comprehensive critique of trans-humanism.

• Posthuman-Ism

- With these two clarifications in mind, the “post-humans” (as envisioned in my books) can take different forms, and I proposed, in my different books, some of them, such as “unfolding unconsciousness,” “floating consciousness,” “hyper-spatial consciousness,” “thinking machines,” “thinking robots,” “genetically altered superior beings,” “cyborgs,” and others (as already analyzed in my previous works).
- They will evolve in conjunction with other visions of mine in relation to nature, society, and culture.

Sources: From *Sec.1.6* of *FPHE* (and also *BEPE*). For more details, also read the rest of the books (and other books of mine).

Table 1.32. Three Great Future Transformations of the Martial Body (Part I)

• **Virtual Battle**

- Ex: virtual fight
- Ex: virtual memory

• **The Hyper-Martial Body**

—*In relation to the physical dimension*

- Ex: striking (e.g., punching, kicking, trapping, acupressure-striking, and so on in an amazing way)
- Ex: grappling (e.g., throwing, pinning, joint-locking, and so on in an amazing way)
- Ex: running and walking (e.g., on different surfaces)
- Ex: jumping (e.g., through walls, trees, etc.)
- Ex: flying (e.g., through space)
- Ex: enduring pain (e.g., absorbing punches, kicks, and so on in an amazing way)
- Ex: using extremely advanced hi-tech weapons
- Ex: healing (e.g., with special energy, etc.)
- Ex: entering (e.g., into different dimensions of space)
- Ex: sensing (e.g., in extraordinary ways through space and time, etc.)
- Ex: wearing hi-tech suits for defensive and offensive purposes (e.g., like a hi-tech armor)

—*In relation to the mental dimension*

- Ex: the ability to relax the martial body in a way that current humans cannot.
- Ex: the ability to concentrate the martial mind in a way that current humans are not accustomed to.
- Ex: the ability to breathe and be timely in preparing the martial body for fighting in a way that current humans are not good at.

• **The Post-Martial Floating Mind**

- Ex: the mind without the human body
 - Ex: the quest for spirituality beyond martial arts
-

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**Table 1.32. Three Great Future Transformations of the Martial Body
(Part II)**

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 2.5.1* of *FPHMA*. See text for citations.

Table 1.33. Three Great Future Transformations of the Sexual Body

- **Virtual Pleasure**

- Ex: virtual Sex

- Ex: virtual Recall

- **The Hyper-Sexual Body**

- In relation to the physical dimension*

- Ex: the ability to perform different sexual positions without the various physical limitations that humans currently have.

- Ex: the ability to produce unusual amount of sexual energy to endure in sexual acts in a way that humans currently cannot.

- Ex: the ability to engage in multiple sexual experiences comparable to (but different from) non-human sexuality (e.g., hermaphrodite, monoecious, sex-switching, and many other types) that current humans cannot.

- In relation to the mental dimension*

- Ex: the ability to relax the sexual body in a way that current humans are not accustomed to.

- Ex: the ability to concentrate the sexual mind in a way that current humans are not good at.

- Ex: the ability to breathe and be patient in preparing the sexual body for sexuality in a way that current humans are not able to.

- **The Post-Sexual Floating Mind**

- Ex: the mind without the human body

- Ex: the quest for spirituality beyond sexuality

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.4.2* of *FPHS*. See text for more info.

Table 1.34. The Trinity of Pre-Modernity

- **Pre-Free-Spirited Pre-Modernity (Pre-Modernism) and Its Internal Split**

- Competing worldviews and values both within and between linear centric (e.g., Islamic, Christian, Judaic, Imperial Roman) and cyclical-centric (e.g., Confucian, Taoist, Hindu, and Buddhist) orientations
- Compare modernism with pre-modernism here in relation to the seven dimensions of human existence like the true and the holy (e.g., different versions of epistemic dogmas and religious superstitions), the everyday and the technological (e.g., different versions of non-technophilism and non-consumerism), the beautiful/sublime (e.g., different versions of aesthetic non-autonomy), and the good and the just (e.g., different versions of moral particularism).

- **Pre-Capitalist Pre-Modernity (Pre-Modernization) and Its Own Discontents**

- Competing versions of societal arrangements (e.g., feudalism, monarchism, and the holy order)

- **Hegemonic Pre-Modernity and Its Countervailing Forces**

- Different power centers and their enemies (e.g., the Roman Empire and the “barbarian hordes,” the “Holy Crusades” and the Muslims, the Middle Kingdom and the invading tribes, different social castes in India, and warring Greek city-states)

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions. Also, it does not matter what the “base” era is in the analysis of any trinity. And in the present context, the “base” era is modernity (for instance, with its “free-spirited modernity” and the other two parts). So, for pre-modernity, the trinity takes the form of, say, “pre-free-spirited pre-modernity,” together with the other two parts.

Sources: From Ch.2 of *BCIV* and also the 2 volumes of *FHC*

**Table 1.35. The Trinity of Modernity
(Part I)**

• **Free-Spirited Modernity (Modernism) and Its Internal Split**

—*On the True and the Holy*

- The freedom from the dogmas of the past to the better understanding of, and union with, the world and self (Ch.3 of *FHC*)
- Alternative discourses: about the true (e.g., anti-science discourses) and the holy (non-mainstream theologies) (Ch.3 of *FHC*)

—*On the Technological and the Everyday*

- The freedom from life harshness to the higher technophilic, consumeristic lifeform (Ch.2 of *FHC*)
- Alternative discourses: about the everyday (e.g., transcendental mindsets) and the technological (e.g., Arcadianism) (Ch.2 of *FHC*)

—*On the Good and the Just*

- The freedom from the theo-aristocratic tyranny to the moral universality for a just society (Ch.5 of *FHC*)
- Alternative discourses: about the just (e.g., Communism, Anarchism) and the good (e.g., Nazism/Fascism, and Zarathustrianism) (Chs.5-6 of *FHC*)

—*On the Beautiful and the Sublime*

- The freedom from the external distortion of aesthetic pleasure to the boundless infinity of totality in artistic autonomy (Ch.4 of *FHC*)
- Alternative discourses: about the beautiful/sublime (e.g., kitsch and historical avant-gardism) (Ch.4 of *FHC*)

• **Capitalist Modernity (Modernization) and Its Own Discontents**

—*During the Industrial Revolution*

- Ex: Marx on the institution of inequality (Ch.1 of *FHC*)

—*During the Modern Rational-Instrumental Epoch*

- Ex: Weber on the politics of soft liberal institutions (Ch.5 of *FHC*)

—*During the Great Depression*

- Ex: Keynes on the myth of the free market (Chs.1-3 of *FHC*)

—*During the Cold War*

- Ex: Lasch on the narcissistic culture industry (Chs.2-3 of *FHC*)
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(continued on next page)

**Table 1.35. The Trinity of Modernity
(Part II)**

• **Hegemonic Modernity and Its Countervailing Forces**

—*The Legacies of Colonialism and Imperialism*

- Ex: European colonization of most of the modern world (Ch.1 of *FHC*)

—*The Struggle for Decolonialization*

- Ex: The countervailing forces of resentment, rechantment, and regionalism (Chs.1 & 6 of *FHC*)

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.

Sources: From the 2 volumes of *FHC*—and also from *FCD*

Table 1.36. The Trinity of Post-Modernity

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- **Free-Spirited Postmodernity (Postmodernism) and Its Internal Split**
 - On the True and the Holy*
 - Postmodern performative turn for knowing and its enemies (Ch.3 of *FHC*)
 - Postmodern comparative theology and its opponents (Ch.3 of *FHC*)
 - On the Technological and the Everyday*
 - Postmodern corporate technological mindset and its adversaries (Ch.2 of *FHC*)
 - Postmodern postmaterialism and its critics (Ch.2 of *FHC*)
 - On the Good and the Just*
 - Postmodern politics of difference and its foes (Ch.5 of *FHC*)
 - On the Beautiful and the Sublime*
 - Postmodern deconstruction and its dissenters (Ch.4 of *FHC*)

 - **Capitalist Postmodernity (Postmodernization) and Its Own Discontents**
 - During the Post-Cold War and Beyond*
 - Ex: post-Fordism and its shortcomings (Ch.6 of *FHC*; Chs.6-7 of *FCD*)

 - **Hegemonic Postmodernity and Its Countervailing Forces**
 - The Debate on the Global Village*
 - Ex: uni-civilizationalism vs. multi-civilizationalism (Ch.6 of *FHC*)
 - The Resistance Movement*
 - Ex: rechancement and the politics of civilizational claims (e.g., Islamic, Confucian and other ethos in relation to the Same) (Ch.6 of *FHC*; Ch.10 of *FCD*)
 - Ex: resentment and the politics of resurgence (e.g., the rising Chinese superpower, the growing EU, and other players in relation to the U.S. and her allies) (Ch.6 of *FHC*; Ch.8 of *FCD*)
 - Ex: regionalism and the politics of inequality (e.g., trans- or international blocs, the North-South divide, NGO's) (Ch.6 of *FHC*; Ch.5 of *FCD*)

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.

Sources: From *FCD* and the 2 volumes of *FHC*

Table 1.37. The Trinity of After-Postmodernity

- **Free-Spirited After-Postmodernity (After-Postmodernism) and Its Internal Split**
—The discourse of naked contingency (Ch.10 of *FCD*; Ch.4 of *FPHC*)
- **Post-Capitalist After-Postmodernity (After-Postmodernization) and Its Own Discontents**
—Different versions of post-capitalism and post-democracy, and their enemies (Ch.10 of *FCD*; Chs.3-4 of *FPHC*)
- **Hegemonic After-Postmodernity and Its Countervailing Forces**
—The Cyclical Progression of Hegemony in Multiverses (Chs.9-10 of *FCD*; Ch.4 of *FPHC*)

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.

Sources: From *FCD* and also *FHC*

• PART TWO •

Teaching

CHAPTER 2

TEACHING AND ITS DUPLICITY

The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.

—William A. Ward (TE 2010)

The Brightness of Teaching

The process of education involves both teaching (from the vantage point of a teacher) and learning (from the vantage point of a student)—as already analyzed in *Sec. 1.2*.

This interaction between teaching and learning is true, even when a teacher can learn from his teaching experience, just as a student can teach in his learning experience.

This then warns us that any study of teaching requires an examination of the nature of learning, as one cannot be completely separated from the other.

With this in mind, this book offers a dialectic treatment of teaching and learning in that, if teaching has its brightness, it has its darkness too—just as, if learning has its benefits, it likewise has its costs.

The inquiry concerning teaching is the subject matter of this chapter (Chapter Two), whereas that of learning will be explored in the next chapter (Chapter Three).

In addition, this interaction between teaching and learning poses a scholarly challenge here, in that one cannot analyze teaching (or learning, for that matter) completely separately.

This then implies that the issues concerning teaching in this chapter (Chapter Two) and learning in the next chapter (Chapter Three) often overlap, as each issue on one can be relevant to the other too.

With this caveat in mind—a good way to examine the duplicity of teaching is by way of the evaluation of the extent to which it (teaching) is in fact both possible and desirable.

This chapter thus takes the challenging task to provide a comprehensive analysis of teaching in the context of education from the four perspectives of the mind, nature, society, and culture (in accordance to my sophisticated methodological holism, as explained in *Sec. 1.7*).

In other words, this chapter is organized in four main sections, in relation to (2.2) teaching and the mind, (2.3) teaching and nature, (2.4) teaching and society, and (2.5) teaching and culture—to be examined hereafter, in that order (and summarized in *Table 2.1*).

Teaching and the Mind

Teaching, when examined from the perspective of the mind, can reveal something amazing about its possibility and desirability, and this can be shown by way of two case studies, namely, (2.2.1) the Socratic School of teaching, and the debate on the mind and (2.2.2) the school system, the unschooled mind, and teaching—to be addressed in what follows, respectively.

The Socratic School of Teaching, and the Debate on the Mind

It is one thing for a teacher to teach, but it is another thing to find out if what he teaches is true. Consider, for illustration, the debate on the mind in the context of the Socratic School of teaching.

It should be clarified, however, that, although the inquiry about the Socratic School of teaching here can also concern learning (as the other side of the same mirror), the focus in this section (of Chapter Two on teaching) is of course on teaching.

Three Phases of the Socratic School of Teaching

The Socratic School of teaching refers to a dialectical method of teaching in Classical Greece, in which “the defence of one point of view is pitted against the defence of another; one participant may lead another to contradict him in some way, strengthening the inquirer's own point. (Think about the question before you speak.)” (WK 2010n)

There are three phases of the Socratic School to be identified for introduction here, namely, (a) the Socratic method, (b) maieutics, and (c) aletheia—as shown below and summarized in *Table 2.2*. (WK 2010p)

(a) The Socratic Method

The first phase of the Socratic School of teaching refers to “the Socratic method,” which, in this first phase, focuses more on the elimination of prejudices. (WK 2010p)

In this first step, “the student answers without thinking too much about what he says. Generally, the disciple thinks that what he says is true. This is the level of prejudice. The philosopher debates the pupil’s idea with more questions until the student reaches the conclusion that what he was thinking was mistaken and he reaches a more clear conclusion.” (WK 2010p)

This focus on eliminating prejudices in the first phase makes the Socratic method “a negative method of hypothesis elimination, in that better hypotheses are found by steadily identifying and eliminating those that lead to contradictions. The Socratic method searches for general, commonly held truths that shape opinion, and scrutinizes them to determine their consistency with other beliefs.” (WK 2010n)

In its fundamental way, the Socratic method “is a series of questions formulated as tests of logic and fact intended to help a person or group discover their beliefs about some topic, exploring the definitions or logoi (singular logos), seeking to characterize the general characteristics shared by various particular instances.” (WK 2010n)

Thus, what is central in the Socratic method is the technique of “cross-examination” (or “elenchus” in Latin, or “ἐλεγχος elengkhos” in Ancient Greek, to mean “argument of disproof or refutation”). (WK 2010n)

For example, here is an illustration of four major steps in “elenchus,” as shown below: (WK 2010n)

- “Socrates’ interlocutor asserts a thesis, for example ‘Courage is endurance of the soul,’ which Socrates considers false and targets for refutation.”
- “Socrates secures his interlocutor’s agreement to further premises, for example ‘Courage is a fine thing’ and ‘Ignorant endurance is not a fine thing.’ ”
- “Socrates then argues, and the interlocutor agrees, that these further premises imply the contrary of the original thesis, in this case it leads to: ‘courage is not endurance of the soul.’ ”
- “Socrates then claims that he has shown that his interlocutor’s thesis is false and that its negation is true.”

However, “most Socratic inquiries consist of a series of elenchi and typically end in aporia,” which is “a state where they [the participants] no longer know what to say about the subject under discussion.” (WK 2010n)

(b) Maieutics (Midwifery)

The second phase of the Socratic School of teaching refers to “maieutics,” which, in this second phase, focuses more on the birth of truth (after prejudices are eliminated in the first phase), as “the word is derived from the Greek 'μαιευτικός,' pertaining to midwifery.” (WK 2010p)

Historically, in the 4th century B.C., “the character of Socrates in the *Theaetetus* of Plato gives the first known reference to the maieutic principle, and the method was used in the Socratic School. According to Plato, several traits in Socrates' activity make it resemble a midwife's art, while the main difference between them seems to be that a midwife operates with people and Socrates with ideas.” (WK 2010p)

By analogy, it is well understood that a midwife has some abilities that others do not, as shown below:

- “A midwife is experienced in giving birth, but exerts herself as such only when she is already barren.”
- “The midwife can detect which people would make a good couple, capable of having healthy children were they to mate. In fact she sometimes helps people to associate with one another.”
- “The midwife cuts the umbilical cord, dissociating the newly born from the circumstances of its origin (i.e., from its mother).”
- “Most importantly, the midwife must test by all means whether the newly born is 'a false phantasm' or a 'healthy baby, endowed with life and truth.' The Socratic means to discern this is dialectics.

By the same token, when the analogy of midwifery is applied to the Socratic School of teaching, the student (now “free from prejudices” in the first phase) “is invited,” in this second phase, “to continue the dialogue in a more deep and coherent manner to the truth. It is based in the idea that knowledge is latent in the human conscience. The philosopher, as a midwife, has to help the student to give birth to the truth.” (WK 2010p)

In this sense, there is a distinction between the Socratic method (in the first phase) and the maieutics (in the second phase), because the former is to “make...the interlocutor understand that what he thought was true was actually a prejudice,” whereas the latter “is based on the theory of reminiscence, so that whereas the Socratic Method begins from the idea of a prejudice, Maieutics holds that knowledge is latent in the conscience

awaiting discovery. This discovery is sought through dialectic and inductive reasoning.” (WK 2010p)

In fact, the maieutic principle has its religious origin in Orphism, which is “a set of religious beliefs and practices in the ancient Greek and the Hellenistic world,” with “promised advantages in the afterlife.” (WK 2010r; M. Skinner 2005; D. Miller 1986; D. Dungan 1999; W. Baird 2002; L. Martin 1987)

With this religious origin in mind, “maieutics consists in the belief that there is a stored knowledge in the conscience by tradition and the experience of past generations. Therefore, Maieutics invites the individual to discover the truth that is latent in him.” (WK 2010p)

In any event, “maieutics as a method of knowledge has been important for the development of education. It compares the philosopher with the educator as a 'Midwife of Knowledge' that helps the student to reach the light. Maieutics uses dialogue as a dialectic instrument to reach truth.” (WK 2010p)

(c) Aletheia (Disclosedness)

And the third phase of the Socratic School of teaching refers to “aletheia,” which, in this final phase, focuses more on the mastering of the truth, as the word “aletheia (ἀλήθεια) is the Greek word for 'truth’” (as disclosedness). (WK 2010q)

In this final phase, “the student becomes master of the truth. Aletheia is, 'the state of not being hidden; the state of being evident.’” (WK 2010p)

This idea of aletheia (for truth as disclosedness) is “a significant concept in the study of philosophy and epistemology because defining truth as aletheia, instead of as correspondence or coherence, represents a clear departure from nearly every philosophical tradition since the Ancient period.” (WK 2010q)

In fact, it was Martin Heidegger, who, in the 20th century, “renewed attention in aletheia [in his main work *Being and Time*] and developed the notion into the form recognized today; a renewed attempt to understand Truth. Heidegger gave an etymological analysis of the term, and drew out an understanding of aletheia as 'disclosedness'; cf. Lethe as forgetfulness.” (WK 2010q)

In this sense, “aletheia is distinct from the more well-known conceptions of truth as statements which accurately describe a state of affairs (correspondence), or statements which fit properly into a system taken as a whole (coherence). Instead, Heidegger focused on the elucidation of a meaning of truth that is pre-Socratic.” (WK 2010q)

For Heidegger, “aletheia is the truth that first appears when something is seen or revealed. It is to take out of hiddenness to uncover. It is not

something that is connected with that which appears. Allowing something to appear is then the first act of truth; for example, one must give attention to something before it can be a candidate for any further understanding, for any understanding of space it must first somehow appear. Untruth, then, is something concealed or disguised.” (WK 2010q)

The Socratic School of Teaching under Scrutiny

However, well-known though the Socratic School of teaching is, it is not immune from criticisms. Consider a few of them below, for illustration, as summarized in *Table 2.2*.

Firstly, one criticism of the Socratic School of teaching is that “there is...more often...no clear answer at all” at the end of any Socratic questioning, and this is especially true in contemporary legal education. (WK 2010n)

In fact, “most Socratic inquiries consist of a series of elenchi and typically end in aporia,” which is “a state where they [the participants] no longer know what to say about the subject under discussion.” (WK 2010n)

Secondly, another criticism of the Socratic School of teaching is that it presupposes an uncritical religious dogma in Orphism, in that “knowledge is latent in the human conscience” or that “there is a stored knowledge in the conscience by tradition and the experience of past generations.” (WK 2010p)

For the critics who do not accept this religious dogma, maieutics remains questionable.

Thirdly, still another criticism of the Socratic School of teaching is that the idea of truth as aletheia (disclosedness) remains problematic.

In fact, the Heideggerian contribution only makes the matter worse, because of its poetic, mystical nature in the world of unconcealing or disclosing. In retrospect, a critical observation by Jacques Derrida against this Heideggerian work on aletheia is worth mentioning here: “From/after this laughter and this dance, what I will call Heideggerian hope, comes into question. I am not unaware how shocking this word might seem here.” (S. White 1991: 76-7)

Fourthly, still another criticism of the Socratic School of teaching is that reasoning by itself does not necessarily lead to knowledge, freedom, or happiness (as already discussed in *Sec. 1.3*).

For instance, Isaiah Berlin (1969:144,152-4) precisely made this critical point in a famous passage: “This is the positive doctrine of liberation by reason...I must assume that if the law I impose is rational (and I can only consult my own reason) it will automatically be approved by all the members of my society so far as they are rational beings. For if

they disapprove, they must, *pro tanto*, be irrational; then they will need to be repressed by reason: whether their own or mine cannot matter, for the pronouncements of reason must be the same in all minds....If this leads to despotism, albeit by the best or the wisest..., can it be that there is something amiss in the premises of the argument?...Can it be that Socrates and the creators of the central Western tradition...who followed him have been mistaken, for more than two millennia, that virtue is not knowledge, nor freedom identical with either? That despite the fact that it rules the lives of more men than ever before in its long history, not one of the basic assumptions of this famous view is demonstrable, or, perhaps, even true.”

And fifthly, still another criticism of the Socratic School of teaching is that reasoning by itself does not answer some deep questions in religion or ethics (as already discussed in *Sec. 1.3*).

For instance, Soren Kierkegaard in his 1843 book titled *Fear and Trembling* published in 1843 under the pseudonym Johannes de silentio (John the Silent) told the story of Abraham's willingness to sacrifice Isaac to make the case of fideism., because “to the eyes of a non-believer,...it must necessarily have appeared to be an unjustifiable attempted murder, perhaps the fruit of an insane delusion,” but for Kierkegaard, “to believe in the incarnation of Christ, in God made flesh, was to believe in the 'absolute paradox,' since it implies that an eternal, perfect being would become a simple human. Reason cannot possibly comprehend such a phenomenon; therefore, one can only believe in it by taking a 'leap of faith.’” (WK 2010o)

In the same spirit, it is fitting, at this juncture, to remember that “Aristotle also claimed that this [Socratic] method is not suitable for ethics.” (WK 2010n)

Siding with No One

These criticisms of the Socratic School of teaching do not mean to reject its usefulness (in education) but to help us learn from the two opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of the mind with the Socratic School of teaching as a case study here) are not to the extent that the respective defenders would like us to believe.

More importantly, the analysis of the Socratic School of teaching can also teach us something revealing about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-

complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of completeness and soundness for a system of ideas, as in maieutics), there is informalness (e.g., the nonformal allowance of religious dogma in maieutics without any proof that it is true). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of those who hold prejudices in a Socratic dialogue, like Theaetetus about the nature of knowledge in his conversation with Socrates), there is relativeness (e.g., what is true for Theaetetus about the nature of knowledge, as in the three definitions of knowledge as “a perception,” “a true opinion,” and “an explanation besides a true opinion,” is not so for Socrates who refuted them). (WK 2010p) And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of cross-examination in a Socratic dialogue), there is unpredictability (e.g., the more difficult task to predict the exact outcome of a Socratic dialogue, since it can end in a refutation, in an aporia, in a state of uncertainty with no clear answer, or else). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by those in the Socratic School of teaching that aletheia allows the student to become “master of the truth” because truth is something which is “latent” in human conscience”), there is inexplicability (e.g., the lack of sufficient explanation, if viewed from the side of the critics, of why truth is necessarily “stored” or “latent in the human conscience” in the first place). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the three phases of the Socratic School of teaching), there is vagueness (e.g., the vagueness in the three phases, because different scholars have different interpretations about them, as shown by Michael Frede [1992] who “insists that step #4 [in elenchus above] makes nonsense of the aporetic nature of the early dialogues,” because “if any claim has shown to be true then it cannot be the case that the interlocutors are in aporia, a state where they no longer

know what to say about the subject under discussion”). (WK 2010n) And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of the Socratic School of teaching in terms of the three phases), there is complicatedness (e.g., the relatively complicated analysis of the Socratic School of teaching by questioning its claims and assumptions, as shown in the criticisms). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of prejudices in the Socratic School of teaching), there is hiddenness (e.g., the hidden bias in the Socratic School of teaching because of its religious origin in Orphism). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of those in the Socratic School of teaching who accept truth as *aletheia*), there is emptiness (e.g., the relatively less dense, or more empty, concentration of those in the Socratic School of teaching who accept truth as coherency, correspondence, or pragmatics). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of a Socratic dialogue, if the students in question hold a lot of prejudices to be refuted by the teacher), there is quickness (e.g., the relatively faster speed of a Socratic dialogue, if the students in question are ready to accept at the outset that they are conscious of their own ignorance, just as Socrates had insisted that “he did not himself know anything”). (WK 2010n) And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., “the Socratic method is widely used in contemporary legal education by most law schools in the United States”), there is contraction (e.g., the rejection, in a relative way, of the Socratic School of teaching for those like Aristotle who “claimed that this method is not suitable for ethics” or for those like Kierkegaard who argued that “Reason cannot possibly comprehend such a phenomenon [in religion]; therefore, one can only believe in it by taking a 'leap of faith’”). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of the Socratic method), there is praxis (e.g., the practical application of the Socratic method for legal education in contemporary America). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom as held by many students in their conversation with Socrates), there is novelty (e.g., the alternative novel challenge to the conventional views as held by the students, when Socrates refuted them with his unconventional counter-arguments). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans in the state of nature to communicate with each other in a primitive way), there is transformation (e.g., the technical transformation of human communication with each other by the invention of the Socratic School of teaching). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different schools of teaching over time, be they the ones proposed by Socrates, Kierkegaard, or else), there is asymmetry (e.g., the popularity of the Socratic method in contemporary American law schools—but the popularity of the method used by Kierkegaard in theological schools). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by the Socratic School of teaching, as shown in the criticisms by the critics), there is progression (e.g., the progress made by the Socratic School of teaching to help us discover our prejudices). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and regulation of values and behaviors, regardless of whether this be done by way of the Socratic method or the one by Kierkegaard), there is difference in outcome (e.g., the contribution to the molding and regulation of values and behaviors by way of the Socratic method for a more rationalist way of life based on reason—but the contribution to the molding and regulation of values and behaviors by way of the method by Kierkegaard for a more non-rationalist way of life based on faith). And the reverse direction also holds true.

The School System, the Unschooled Mind, and Teaching

Another way to evaluate the possibility and desirability of teaching from the perspective of the mind is to explore teaching, the school system, and the unschooled mind.

Although the inquiry about the unschooled mind is closely related to learning too (from the other side of the same coin), the focus in this section (of Chapter Two on teaching) is on the side of teaching, of course.

School Teaching vs. Intuitive Learning

Howard Gardner in his 1991 book titled *The Unschooled Mind: How Children Think and How Schools Should Teach* made a bold claim, in that, as Scott London (1993) summarized it, “the core problem is that scholastic and disciplinary forms of knowing are often at odds with ‘the unschooled mind’ within nearly every student.”

Gardner’s main point is that “most children tend to develop deeply entrenched patterns of thinking and learning by the time they are five years old. These patterns include general ideas about the physical world and the world of others, stereotypic views of events, familiar scripts, and simplified preferences. These early learning patterns and primitive theories tend to be acquired intuitively, in much the same way as a language is learned.” (S. London 1993)

However, this unschooled mind clashes later on with the school system, when “the child begins school” and “he or she is introduced to scholastic and disciplinary forms of knowing that often bypass, and sometimes even interfere with, earlier frames of reference. The result for many young students is an uneasy dichotomy between intuitive learning and the academic learning that takes place in schools.” (S. London 1993)

For example, the school system traditionally tends to use such scholastic tools like “short-answer assessments,” “correct answer compromise,” “the pressure for coverage,” and the like—but what exactly do students really learn from them, as Gardner (1992) critically asked?

Gardner’s conclusion is that “true understanding can come about only if the student is allowed to integrate the preschoolastic with the scholastic and disciplinary ways of knowing”; as Gardner himself put it, “The problem is less a difficulty in school learning per se and more a problem in integrating the notational and conceptual knowledge featured in school with the robust forms of intuitive knowledge that have evolved spontaneously during the opening years of life.” (S. London 1993)

So, Gardner proposed that “educating children for genuine understanding therefore involves designing educational environments and methods that help students synthesize their several forms of knowing,” and he proposed some specific schools reforms like “child museums,” “apprenticeship programs,” and “Christopherian encounters.” (S. London 1993)

What is interesting about “Christopherian encounters” is that it refers to “an experiential form of learning where students are confronted with the inconsistencies between their various frames of reference. In addition, teachers must devise ways to approach subjects in at least five ways: through narrative; through logical-quantitative approaches; through

philosophical, or foundational, inquiries; from an aesthetic point of view; and in ways that create and draw upon student experiences. Finally, he insists that schools need to cultivate a 'folio culture,' and policy-makers must embrace more robust ways of assessing progress. Educators must acknowledge the many forms of intelligence students bring to school and address intellectual strengths far more directly than they have in the past.” (S. London 1993)

Three Underlying Theoretical Disagreements

This critique of the school system by Gardner also underlines some theoretical disagreements between him and Jean Piaget on the nature of teaching, although both are “stage theories” of child development. (K. Mukunda 1998)

Consider three major disagreements between them below, for illustration.

Firstly, one major disagreement between Gardner and Piaget is that, for Piaget, “if you studied children you had to know what they were going to become—what the end state of development is. Piaget thought it was to be a scientist; that is what Piaget was.” (H. Gardner 1992)

However, for Gardner (1992), as he himself put it, “I had spent a lot of time working in the arts. I felt that there was something wrong with a theory that only talked about the mind of the scientist as being the endall of a child’s development. So I began to explore what development would be like if one thought of participation in the arts as an artist, or a critic, or a performer or a connoisseur as being a viable end state for human development. This is not to say that human beings should develop to become artists any more than they should develop to become scientists but rather that we can develop many different kinds of human beings.”

Secondly, another major disagreement between Gardner and Piaget is that, for Gardner (1992), as he himself put it, “I became infamous for, was against the notion that there was a single thing called intelligence, which could be measured by an intelligence test. It is not widely known that Piaget studied in Alfred Binet’s laboratory. Binet was dead but the laboratory was still there under the direction of a psychologist named Théodore Simon who had worked with Binet. Piaget became interested in children’s minds because of the mistakes the children made on the intelligence tests. Binet was a great scientist, credited with the creation of the IQ test. I do not blame him for any of the abuse done in the name of intelligence and intelligence testing. Binet’s ideas affected an American named Lewis Terman who in 1916 created the first normed standardized intelligence tests. Forever afterwards psychologists assumed that they

could establish how smart somebody was, and in fact what intelligence is, by giving a test that took an hour or so.”

And thirdly, still another major disagreement between Gardner and Piaget is that, for Piaget, “children pass through stages of cognitive development. So infants know the world in one way, five-year-olds in another way, ten-year-olds in another way, and fifteen-year-olds in still another way. Part of this developmental sequence is that when you go from nine to eleven or from thirteen to sixteen years not only do you see the world in a very different way, you can’t even remember how you used to see the world.” (H. Gardner 1992)

However, for Gardner (1992), as he himself put it, “I am not going to argue that Piaget’s demonstrations were wrong because many of them were more correct than wrong. Where Piaget was wrong, I believe, was in his argument that when people get older they see the world in a different way and they no longer have access to earlier ways of knowing. In fact, I am going to argue that most of us, except in areas where we are expert, continue to think the way we did when we were five years of age. We continue to think the way we did before we went to school. That is a pretty radical thesis, and I decided I was not going to pre-judge the IB schools. Maybe you are exceptional in that you have succeeded in extinguishing the less productive aspects of the five-year-old mind.”

Criticisms against the Idea of the Unschooled Mind

However, Gardner’s idea of the unschooled mind has drawn a lot of criticisms. Consider a few of them below, for illustration, as summarized in *Table 2.3*.

Firstly, one criticism of Gardner’s idea of the unschooled mind is that it is based on an uncritical assumption of children’s intuitive learning “in much the same way as a language is learned.” (S. London 1993)

For instance, in *The Future of Post-Human Language* (2009) or *FPHL* in short, I already went to great lengths to explain the criticisms against Noam Chomsky and Steven Pinker about how children learn language. The same criticisms can be directed against Gardner too.

A good illustration in *FPHL* is the critique by Geoffrey Sampson (1997), in *Educating Eve: The ‘Language Instinct’ Debate*, who questioned the views held by Chomsky and Pinker, especially in relation to the premise that the speed of language acquisition by children is fast. Sampson offered three refutations.

Sampson’s first refutation is that some studies, like the one by C. Sandman (1997) and others, “have demonstrated foetal exposure to the mother’s voice results in absorbing language-specific information.” (WK

2009) In fact, “there is evidence for human behavioral learning prenatally, in which habituation has been observed as early as 32 weeks into gestation, indicating that the central nervous system is sufficiently developed and primed for learning and memory to occur very early on in development.” (WK 2009a)

Sampson’s second refutation is that it is not clear on what basis the speed in language acquisition by children is calculated as “fast.” For instance, how “fast” is “fast,” as compared with what? Sampson then asked, “Why is it appropriate to regard a learning period of two years or so as 'remarkably fast' rather than 'remarkably slow'?” (WK 2009) And, “more specifically,...how long would human beings have to take to acquire language before Chomsky [and Pinker] would no longer see the speed-of-acquisition argument as applicable? Ten years? Fifty years?” (WK 2009) So, do Chomsky and Pinker really want to claim that “language learning would not be possible at all without innate knowledge—time alone would never produce it”? (WK 2009)

And Sampson’s third refutation is that the business of language acquisition is not so simple as Chomsky and Pinker would like us to believe, since “the...knowledge of language is considered by many professionals to be incomplete even after the work of generations of scholars, and familiarity with this knowledge is neither acquired universally nor quickly by individuals”—let alone children. (WK 2009)

These three refutations can also be directed against Gardner, because he made the same analogy between how children learn language and how children learn in general—in an intuitive (fast) way.

Secondly, another criticism of Gardner’s idea of the unschooled mind is that its reliance on the theory of multiple intelligences (i.e., “spatial, linguistic, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, naturalistic, and existential”) remains unproven. (WK 2010s)

For instance, “the theory has been critiqued as tautologous and thus unfalsifiable,” whereas others criticized that “there is little empirical evidence to support it.” (WK 2010s; P. Klein 1998)

Thirdly, still another criticism of Gardner’s idea of the unschooled mind is that its reliance on multiple intelligences “is ad hoc,” because “Gardner is not expanding the definition of the word 'intelligence'; rather, he denies the existence of intelligence as traditionally understood and instead uses the word 'intelligence' whenever other people have traditionally used words like 'ability.' This practice has been criticized by Robert J. Sternberg (1983, 1991), [M.] Eysenck (1994), and [S.] Scarr (1985).” (WK 2010s)

Fourthly, still another criticism of Gardner's idea of the unschooled mind is that "Gardner is criticized for underestimating the effects exerted on the various domains of intelligences by processes that define general processing efficiency, such as speed of processing, executive functions, and working memory, and meta-cognitive processes underlying self-awareness and self-regulation." (WK 2010s)

Fifthly, still another criticism of Gardner's idea of the unschooled mind is that Gardner does not address such critical questions like "Should schools be focusing on teaching to students' strengths or on remediating where they are weak?" or "What kind of correlations exist between the intelligences, or are they completely independent?" (WK 2010s)

And sixthly, one more criticism of Gardner's idea of the unschooled mind is that intuitive learning is often wrong about the world and that, insofar as it is used for creative imagination as an art, it is not necessarily desirable.

In *The Future of Post-Human Creative Thinking* (2009), I had also gone to great lengths to show that creative imagination is neither possible nor desirable to the extent that its proponents would like us to believe.

Above the Fray

These criticisms of Gardner's idea of the unschooled mind do not suggest to dismiss it outright but to show us the two opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of the mind with Gardner's idea of the unschooled mind as a case study here) are not to the extent that the respective defenders would like us to believe.

In addition, the analysis of teaching, the school system, and the unschooled mind can teach us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of completeness and soundness for a system of ideas, as in science), there is informalness

(e.g., the nonformal existence of “little empirical evidence to support it [Gardner’s MI theory]”). (WK 2010s; P. Klein 1998) And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view in the traditional school system that it can test whether or not, or to what extent, the students learn from their teacher with some scholastic tests), there is relativeness (e.g., what is true for the traditional school system in regard to the validity of scholastic tests is not necessarily so for Gardner, who questioned their validity and effectiveness). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of successful students in schools to have “faithful attendance at good schools, high grades and high test scores, accolades from their teachers,” and the like), there is unpredictability (e.g., the more difficult task to predict to what extent these successful students in school will also be able “to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested,” as Gardner critically pointed out). (H. Gardner 1991) And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by Gardner of “the early learning patterns” of children on the basis of being “acquired intuitively, in much the same way as a language is learned”), there is inexplicability (e.g., the lack of sufficient explanation by Gardner of why it is necessarily true that “the...early learning patterns...tend to be acquired intuitively, in much the same way as a language is learned,” as shown by the critic like Sampson who offered three refutations to show that things are not so simplistic). (S. London 1993) And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of nine forms of intelligence by Gardner, namely, “spatial, linguistic, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, naturalistic, and existential”), there is vagueness (e.g., the vagueness in the identification of multiple intelligences, since it is not clear what they really are, with critical questions like “What kind of correlations exist between the intelligences, or are they completely independent?”). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of the unschooled mind by Gardner), there is complicatedness (e.g., the relatively complicated analysis of the unschooled mind by questioning its claims and

assumptions, as shown in the criticisms by the critics). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration, by Gardner, of the possibility that “most of us, except in areas where we are expert, continue to think the way we did when we were five years of age”), there is hiddenness (e.g., the hidden bias in Gardner’s analysis, because of his eccentric stage theory of child development in an intuitive way, as critically pointed out by the critics). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of supporters of Gardner’s view about the unschooled mind to hold the view that “most of us, except in areas where we are expert, continue to think the way we did when we were five years of age”), there is emptiness (e.g., the relatively less dense, or more empty, concentration of supporters of Gardner’s view if they accept Piaget’s alternative view that “children pass through stages of cognitive development,” such that they see the world in a very different way at each new stage and do not quite remember what they saw before). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of an expert in areas where he is expert to be able to continue to think the way he did when he was five years of age,” as pointed out by Gardner), there is quickness (e.g., the relatively quicker speed of a non-expert in areas where he is not an expert to be able to continue to think the way he did when he was five years of age”). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of someone who accepts Gardner’s idea of the unschooled mind to think more like an artist, not just like a scientist, in relation to child development), there is contraction (e.g., the relatively less developed ability of someone who accepts Gardner’s idea of the unschooled mind to think more like a hard-core scientist in relation to child development). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of multiple intelligences by Gardner), there is praxis (e.g., the practical application of Gardner’s MI theory by “New City School, in St. Louis, Missouri, which has been using the theory since 1988”). (WK 2010s) And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom by Piaget, in that “children pass through stages of cognitive development,” such that they see the world in a very

different way at each new stage and do not quite remember what they saw before), there is novelty (e.g., the alternative novel challenge to Piaget's conventional wisdom, by Gardner's different view that "most of us, except in areas where we are expert, continue to think the way we did when we were five years of age"). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to learn in the state of nature in a primitive way), there is transformation (e.g., the technical transformation of human learning by the invention of "child "museums" "apprenticeship programs," and "Christopherian encounters"). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different views of child development, like the ones by Piaget, Gardner, etc.), there is asymmetry (e.g., the popularity of Piaget's view among his supporters—but the acceptance of Gardner's view among his own supporters). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the success of students who follow the school system well, with the rewards like "high grades and high test scores" and "accolades from their teachers"), there is hardness (e.g., the failure of students who do not follow the school system well, with the forms of punishment like low grades, low test scores, and the lack of accolades from their teachers). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by Gardner's view about the unschool mind, as shown in the criticisms by the critics), there is progression (e.g., the progress made by Gardner's view about the unschool mind, so as to help students learn better). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and regulation of values and behaviors, regardless of whether this be done by way of the traditional school system or the new approach by Gardner for the unschooled mind), there is difference in outcome (e.g., the contribution to the molding and regulation of values and behaviors by way of the traditional school system for a relatively more homogenous, standardized way of learning—but the contribution to the molding and regulation of values and behaviors by way of the new approach by Gardner for a relatively more diverse, multiple way of learning). And the reverse direction also holds true.

Teaching and Nature

Teaching, when examined from the perspective of nature, can show us in a controversial way its possibility and desirability, and this can be done by way of an excellent case study—namely, science, nature, and the dispute on teaching.

Science, Nature, and the Dispute on Teaching

The study of nature has a major impact on teaching, and two good illustrations here concern cosmology (with heliocentrism as a good example) and biology (with evolutionary theory as another good example). (NAS 1998)

The Impact of Cosmology on the Understanding of Science

The study of the universe has a longer history than the study of biological evolution in nature and can be illustrated by the history of heliocentrism, since “that experience is now informed not only by the beauty and majesty of the heavens, but by a deeper understanding of nature.” (NAS 1998: 30)

This deeper understanding of nature says something important about the nature of science (as taught in textbooks), in a three-fold way, with profound implications for teaching.

Firstly, “science is not the same as common sense. Common sense indicates that the sun does rise and set. Nevertheless, there can be other explanations of that phenomenon, and one of them, the rotation of the earth on its axis, is responsible for day and night.” (NAS 1998: 30)

Secondly, “the statements of science should never be accepted as ‘final truth.’ Instead, over time they generally form a sequence of increasingly more accurate statements.” (NAS 1998: 30)

And thirdly, “scientific progress depends on individuals, but the contributions of one individual could be made by others. If Copernicus had kept his ideas to himself, the discovery of heliocentrism would have been postponed, but it would not have been blocked, since other astronomers eventually would have come to the same conclusion....The same cannot be said in other areas of human endeavor; for example, had Shakespeare never published, we would most assuredly never have had his plays. The publications of scientists, unlike those of playwrights, are a means to an end—they are not the end itself.” (NAS 1998: 30)

The Impact of Biology on the Understanding of Science

With the earlier history of heliocentrism in mind—the study of biological evolution likewise has a further impact on the understanding of science (as taught in textbooks), in a three-fold way, with profound implications for teaching.

Firstly, “science requires careful description.” (NAS 1998: 30)

In the case of evolutionary theory, the scientists “begin with careful descriptions of the material being studied. The material for the study of biological evolution is life itself. One basic aspect of life is that individuals can be grouped as similar kinds, or species. Another important observation is that many species seem to be closely related to each other. The scientific classification of species and their arrangement into groups began with the publication in 1758 of *Systema Naturae*, or system of nature, by the Swedish naturalist Carolus Linnaeus (1707 to 1778).” (NAS 1998: 30)

Secondly, science requires “explanation.” (NAS 1998: 32)

In the case of evolutionary theory, “science involves a great deal of careful observation that eventually produces an elaborate written description of the natural world....In this way, the accuracy and sophistication of the description tends to increase with time, as subsequent generations of scientists correct and extend the observations of their predecessors.” (NAS 1993: 32)

For instance, “[a]nimals living in the wild can face a tremendous struggle for survival. For some birds, for example, fewer than one in 100 animals born in one year will survive over a harsh winter into a second year. Those with characteristics best suited for a particular environment—for example, those individual birds who are best able to find scarce food in the winter while avoiding becoming food for a larger animal—tend to have better chances of surviving. Darwin called this process natural selection to distinguish it from the artificial selection used by dog and pigeon breeders to determine which animals to mate to produce offspring.” (NAS 1998: 38)

And thirdly, science produces “cumulative knowledge.” (NAS 1998: 39)

In the case of evolutionary theory, “[a]t the time of Darwin, there were many unsolved puzzles, including missing links in the fossil record between major groups of animals. Guided by the central idea of evolution, thousands of scientists have spent their lives searching for evidence that either supports or conflicts with the idea. For example, since Darwin’s time, paleontologists have discovered many ancient organisms that connect major groups—such as *Archaeopteryx* between ancient reptiles and birds, and *Ichthyostega* between ancient fish and amphibians. By now,

so much evidence has been found that supports the fundamental idea of biological evolution that its occurrence is no longer questioned in science.” (NAS 1998: 39)

Evolutionary Theory, and the National Science Education Standards

This study of science as revealed by the short histories of heliocentrism and evolutionary theory has an impact on how science is to be taught in schools.

A good illustration concerns the “National Science Education standards” in the United States (which were worked out by the National Research Council in 1996), which “describe what students from kindergarten through twelfth grade should know and be able to do as a result of their instruction in the sciences.” (NAS 1998: 40)

(a) Grades K-4

For grades K-4, students should learn “the life science standard...organized into the categories of characteristics of organisms, life cycles of organisms, and organisms and their environments. Evolution is not explicitly mentioned in these standards, but the text explains the basic things in life science that elementary school children ought to be able to understand and do.” (NAS 1998: 48)

In other words, “[d]uring the elementary grades, children build understanding of biological concepts through direct experience with living things, their life cycles, and their habitats....An understanding of the characteristics of organisms, life cycles of organisms, and of the complex interactions among all components of the natural environment begins with...an understanding of how individual organisms maintain and continue life. The intention of the K-4 standard is to develop the knowledge base that will be needed when the fundamental concepts of evolution are introduced in the middle and high school years.” (NAS 1998: 48)

(b) Grades 5-8

For grades 5-8, “all students should develop an understanding of”: (NAS 1998: 50)

- “Structure of the earth system”
- “Earth’s history”
- “Earth in the solar system”

In fact, the “National Science Education Standards” explicitly stated that “[a] major goal of science in the middle grades is for students to develop

an understanding of earth and the solar system as a set of closely coupled systems. The idea of systems provides a framework in which students can investigate the four major interacting components of the earth system—geosphere (crust, mantle, and core), hydrosphere (water), atmosphere (air), and the biosphere (the realm of all living things). In this holistic approach to studying the planet, physical, chemical, and biological processes act within and among the four components on a wide range of time scales to change continuously earth’s crust, oceans, atmosphere, and living organisms. Their study of earth’s history provides students with some evidence about co-evolution of the planet’s main features—the distribution of land and sea, features of the crust, the composition of the atmosphere, global climate, and populations of living organisms in the biosphere.” (NAS 1998: 50)

(c) Grades 9-12

And finally, for grades 9-12, “all students should develop an understanding of”: (NAS 1998: 51)

- “The cell”
- “Molecular basis of heredity”
- “Biological evolution”
- “Interdependence of organisms”
- “Matter, energy, and organization in living systems”
- “Behavior of organisms”

In addition, for these grades 9-12, “all students should develop an understanding of”: (NAS 1998: 52)

- “Science as a human endeavor”
- “Nature of scientific knowledge”
- “Historical perspectives”

In the end, “the National Science Education Standards is embedded within the full range of content standards describing what students should know, understand, and be able to do in the natural sciences. Used in conjunction with standards for other parts of the science education system, the content standards—and their treatment of evolution—point toward the levels of scientific literacy needed to meet the challenges of the twenty-first century.” (NAS 1998: 53)

Problems with the National Science Education Standards

However, the “National Science Education Standards” have drawn different criticisms from the critics. Consider some main examples below, for illustration, as summarized in *Table 2.4*.

Firstly, one major criticism of the “National Science Education Standards” for teaching is religious in nature, in that, for those who are creationists, the teaching of evolutionary theory does not answer certain religious questions.

After all, even the text of the “National Science Education Standards” acknowledges that “[r]eligions and science answer different questions about the world. Whether there is a purpose to the universe or a purpose for human existence are not questions for science. Religious and scientific ways of knowing have played, and will continue to play, significant roles in human history. No one way of knowing can provide all of the answers to the questions that humans ask.” (NAS 1998: 58)

Secondly, another major criticism of the “National Science Education Standards” for teaching is legal in nature, in that, for those who are creationists, the teaching of evolutionary theory in schools is biased against creation theory, because the former is allowed to be taught whereas the latter is not.

The underlying conflict here is legal, because “public schools must be religiously neutral under the U.S. Constitution,” and “the courts have held that it is unconstitutional to present creation science as legitimate scholarship.” (NAS 1998: 58)

Thirdly, still major criticism of the “National Science Education Standards” for teaching is philosophical in nature, in that it does not seriously question science to its epistemological roots, with the consequence of misleadingly accepting it as the sole “legitimate scholarship.”

For the critics, Thomas Kuhn's *Structure of Scientific Revolutions* (1962) precisely showed that “science is a social activity and that theories are intellectual constructions imposed on data, not demanded by them....'Facts' are so embedded in theory that they simply do not have the kind of independent probative power they were once supposed to possess.” (F. Sulloway 1987)

For the critics, the blind acceptance of science as the sole “legitimate scholarship” commits a serious form of reductionism known as “scientism”—which was originally coined by Flyod Matson for what I already explained in *The Future of Human Civilization* (2000), namely, “a childish naivety of exaggerating the enlightened power of the critical spirit of science in the search for scientific objectivity.” (P.Schelde 1993:125)

And fourthly, still another major criticism of the “National Science Education Standards” for teaching is educational in nature, in that it is more teacher-centered than student-centered, as will be clear in the next chapter on learning (not teaching).

A Broader Perspective

However, these criticisms of the “National Science Education Standards” do not mean to reject it completely but to teach us the opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of the nature with science, nature, and the dispute on teaching as a case study here) are not to the extent that the respective defenders would like us to believe.

Furthermore, the analysis of science, nature, and the dispute on teaching can reveal to us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the finiteness-transfiniteness principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of completeness for a system of ideas, as in science), there is informalness (e.g., the nonformal nature of science itself, since its philosophical foundation cannot be falsified either, as already explained in *FHC*). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of science by the “National Science Education standards” that creationism is not accepted as a “legitimate scholarship” in school), there is relativeness (e.g., what is true for science about dismissing creationism as not “legitimate scholarship” in school in accordance to the “National Science Education standards” is not necessarily so for the creationists, who beg to differ). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency in American public schools to

teach evolutionary theory), there is unpredictability (e.g., the more difficult task to predict which particular aspects of evolutionary theory will be accepted in a particular historical era, because, for instance, Stephen Jay Gould questioned in the 20th century about the process of evolution itself, when he wrote that “the extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology”). (NAS 1998: 56) And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by the “National Science Education standards” in the United States that “so much evidence has been found that supports the fundamental idea of biological evolution that its occurrence is no longer questioned in science”), there is inexplicability (e.g., the lack of sufficient explanation, if viewed within the evolutionary bias of the “National Science Education standards,” of why evolution can occur “in bursts after long periods when little change occurs—an idea known as punctuated equilibrium,” as the critics like Gould once pointed out). (NAS 1998: 56) And the reverse direction also holds true.

In relation to the finiteness-transfiniteness principle, if there is finiteness (e.g., the finite number of species into which animals can be classified in evolutionary theory, as shown in the publication in 1758 of *Systema Naturae* by Carolus Linnaeus), there is transfiniteness (e.g., the amazing transfinite number of all the animals which have ever existed on Earth). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the three categories of grades K-4, 5-8, and 9-12, together with the specified issues for study, in accordance to the “National Science Education standards”), there is vagueness (e.g., the vagueness in the identification of the specific categories and issues for study, in accordance to the “National Science Education standards,” since it is not clear as to why there must be only three categories, and whether or not the specific issues like “historical perspectives” may mean different things to different educators in different historical eras, as shown by Gould’s distinctive interpretation of the process of change in evolution in terms of “punctuated equilibrium” instead, for historical understanding). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of the nature of teaching evolution in accordance to the “National Science Education standards”), there is complicatedness (e.g., the relatively more complicated analysis of

the nature of teaching evolution, as shown in the criticisms by the critics). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of the relationship between evolutionary theory and its impact on how science to be taught in school, in accordance to the “National Science Education standards”), there is hiddenness (e.g., the hidden bias in the “National Science Education standards,” because of its uncritical acceptance of science as the sole “legitimate scholarship”). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of educators in contemporary public schools to teach evolutionary theory rather than creation theory), there is emptiness (e.g., the relatively less dense, or more empty, concentration of educators in pre-modern schools to teach evolutionary theory rather than creation theory). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of the process of change in nature, if taught in accordance to the traditional Darwinian evolutionary theory), there is quickness (e.g., the relatively faster speed of the process of change in nature, if taught in accordance to the contemporary theory of “punctuated equilibrium” as proposed by Gould, in that evolution can occur “in bursts after long periods when little change occurs”). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relative expansion of the influence of evolutionary theory in modern public schools), there is contraction (e.g., the relative contraction of the influence of creation theory in modern public schools). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of biological evolution as proposed by Darwin and others), there is praxis (e.g., the practical application of Darwinian evolutionary theory for the understanding of science in modern public schools in America, as shown in the “National Science Education standards”). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about the teaching of nature in school, in accordance to creation theory in the older pre-modern days), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about the teaching of nature in school, by the new way of understanding

nature in accordance to the Darwinian evolutionary theory). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to observe nature in the state of nature), there is transformation (e.g., the technical transformation of human understanding of nature by the invention of public schools to teach science in accordance to the “National Science Education standards”). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different theories about nature to be taught in schools, be they about creation theory or evolutionary theory), there is asymmetry (e.g., the widespread teaching of evolutionary theory in contemporary American public schools—but the preferred teaching of creation theory in theological seminaries in contemporary America). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the constitutional support of evolutionary theory to be taught in public schools in the United States), there is hardness (e.g., the negative sanctions against public schools in the United States if creation theory is to be taught). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by evolutionary theory, as shown in the problems pointed out by the critics in regard to its controversial monopoly of how nature is to be taught in schools), there is progression (e.g., the progress made by evolutionary theory for the better understanding of nature in the context of how science is to be taught in schools). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and regulation of values and beliefs, regardless of whether this be done by way of teaching creation theory or evolutionary theory in schools), there is difference in outcome (e.g., the contribution to the molding and regulation of values and beliefs by way of teaching creation theory in schools for a relatively more religious or sacred lifeworld—but the contribution to the molding and regulation of values and beliefs by way of teaching evolutionary theory in schools for a relatively more secular lifeworld). And the reverse direction also holds true.

Teaching and Society

Teaching, when examined from the perspective of society, can reveal to us some powerful features in relation to its possibility and desirability, and an excellent case study is about no child left behind, and the politics of teaching—to be addressed hereafter.

No Child Left Behind, and the Politics of Teaching

The term “no child left behind” refers to “The No Child Left Behind Act of 2001 (often abbreviated as No Child Left Behind, or in print as NCLB or pronounced 'nicklebee,’” which is “a United States Act of Congress about the education of children.” (WK 2010t; S. Nichols 2003; USDE 2004)

This act (or NCLB) “was originally proposed by the administration of George W. Bush immediately after taking office. The bill, shepherded through the Senate by Senator Ted Kennedy, one of the bill's co-authors, received overwhelming bipartisan support in Congress. The House of Representatives passed the bill on May 23, 2001 (voting 384-45), and United States Senate passed it on June 14, 2001 (voting 91-8). President Bush signed it into law on January 8, 2002.” (WK 2010t; USDE 2003)

The purpose of NCLB is to “support...standards-based education reform, which is based on the belief that setting high standards and establishing measurable goals can improve individual outcomes in education. The Act requires states to develop assessments in basic skills to be given to all students in certain grades, if those states are to receive federal funding for schools. The Act does not assert a national achievement standard; standards are set by each individual state.” (WK 2010t)

However, NCLB is controversial enough, as it is divided between its proponents and its opponents in regard to its possibility and desirability. Consider, in what follows, (a) the claims by its proponents and (b) the criticisms by its opponents—in that order, as summarized in *Table 2.5*.

The Claims by the Proponents of NCLB

For the proponents of NCLB, there are eight claims about its possibility and desirability, as shown below. (WK 2010t)

(a) Improved Test Scores

The first claim by the proponents of NCLB is that it can improve “test scores.” (WK 2010t; USDE 2006)

For instance, “[t]he Department of Education points to the National Assessment of Educational Progress (NAEP) results, released in July 2005, showing improved student achievement in reading and math”: (WK 2010t; USDE 2006)

- “More progress was made by nine-year-olds in reading in the last five years than in the previous 28 years combined.”
- “America's nine-year-olds posted the best scores in reading (since 1971) and math (since 1973) in the history of the report. America's 13-year-olds earned the highest math scores the test ever recorded.”
- “Reading and math scores for black and Hispanic nine-year-olds reached an all-time high.”
- “Achievement gaps in reading and math between white and black nine-year-olds and between white and Hispanic nine-year-olds are at an all-time low.”
- “Forty-three states and the District of Columbia either improved academically or held steady in all categories (fourth- and eighth-grade reading and fourth- and eighth-grade math).”

Surely, the critics disagree, but their critique will be analyzed later. In the meantime, it suffices to simply say that these results, for the critics, are “misleading,” because “they compare 2005 with 2000, when No Child Left Behind didn't even take effect until 2003. They point out that the increase in scores between 2000 and 2003 was roughly the same as the increase between 2003 and 2005, which calls into question how any increase can be attributed to No Child Left Behind. They also argue that some of the subgroups are cherry-picked—that in other subgroups scores remained the same or actually fell.” (WK 2010t)

(b) Improvement over Local Standards

The second claim by the proponents of NCLB is that it can improve local standards.

For instance, many proponents argue that “local government had failed students, necessitating federal intervention to remedy issues like teachers teaching outside their areas of expertise, and complacency in the face of continually failing schools. Some local governments, notably New York State, have voiced support for NCLB provisions, because local standards had failed to provide adequate oversight over special education, and that NCLB would allow longitudinal data to be more effectively used to monitor Adequate Yearly Progress (AYP). States all over the United States have shown improvements in their progress as a result of NCLB. For example, Wisconsin ranks first of all fifty states, and the District of

Columbia at ninety-eight percent of its schools, achieving the No Child Left Behind Standards.” (WK 2010t; H. Mizell 2003; NYSEA 2005)

(c) Increased Accountability

The third claim by the proponents of NCLB is that it can increase “accountability.” (WK 2010t)

For instance, “[s]upporters of the NCLB claim one of the strong positive points of the bill is the increased accountability that is required of the schools and its teachers. According to the legislation, schools are required to pass yearly tests that will judge how much improvement the students have made over the fiscal year. These yearly standardized tests are the main research that is used to decide whether schools are living up to the standards that they are required to meet. If these improvements are not met, the schools face decreased funding and other punishments that contribute to the increased accountability. According to supporters, these goals help teachers and schools realize the significance and importance of the educational system and how it affects the nation.” (WK 2010t)

(d) Attention to Minority Populations

The fourth claim by the proponents of NCLB is that it can help “minority populations,” because it, for example: (WK 2010t; USDE 2004a)

- “Seeks to narrow class and racial gaps in school performance by creating common expectations for all.”
- “Requires schools and districts to focus their attention on the academic achievement of traditionally under-served groups of children, such as low-income students, students with disabilities, and students of 'major racial and ethnic subgroups.' Each state is responsible for defining major racial and ethnic subgroups itself. Many previous state-created systems of accountability measured only average school performance, allowing schools to be highly rated even if they had large achievement gaps between affluent and disadvantaged students.”

Of course, there can be other ways, but these two are often cited.

(e) Quality of Education

The fifth claim by the proponents of NCLB is that it can improve the “quality of education,” in that it, for example: (WK 2010t)

- “Ideally, increases the quality of education by requiring schools to improve their performance.”

- “Improves quality of instruction by requiring schools to implement 'scientifically-based research' practices in the classroom, parent involvement programs, and professional development activities for those students that are not encouraged or expected to attend college.”
- “Supports early literacy through the Early Reading First initiative.”
- “Emphasizes reading, writing, mathematics and science achievement as 'core academic subjects.’”

Again, there can be other ways, but these four are often mentioned.

(f) School Choice

The sixth claim by the proponents of NCLB is that it can increase “school choice,” in that it, for example: (WK 2010t)

- “Gives options to students enrolled in schools failing to meet AYP. If a school fails to meet AYP targets two or more years running, the school must offer eligible children the chance to transfer to higher-performing local schools, receive free tutoring, or attend after-school programs.”
- “Gives school districts the opportunity to demonstrate proficiency, even for subgroups that do not meet State Minimum Achievement standards, through a process called 'safe harbor,' a precursor to growth-based or value-added assessments.”

Once more, there can be other ways, but these two are often quoted.

(g) Funding

The seventh claim by the proponents of NCLB is that it can increase “funding.” (WK 2010t)

For instance, “the administration and Congress backed massive increases in funding for elementary and secondary education funding. Title I funding to districts for disadvantaged children increased from \$42.2 billion to \$55.7 billion from 2001, the fiscal year before the law's passage, to fiscal year 2004. A new \$1 billion Reading First program was created, distributing funds to local schools to improve the teaching of reading, and over \$100 million for its companion, Early Reading First. Numerous other formula programs received large increases as well. This was consistent with the administration's position of funding formula programs, which distribute money to local schools for their use, and grant programs, where particular schools or groups apply directly to the federal government for funding. In total, federal funding for education increased 59.8% from 2000 to 2003.” (WK 2010t; USDE 2008 & 2004b)

(h) Public Perception of Public Education

And the eighth claim by the proponents of NCLB is that it can improve the “public perception of public education.” (WK 2010t)

For instance, the proponents argue that, prior to NCLB, there were “widespread perceptions that public education results fall short of expectations.” (WK 2010t)

The Criticisms by the Opponents of NCLB

Unfortunately, the opponents of NCLB question the claims by its proponents as false, misleading, exaggerating, and something along that line, as shown in the following eleven criticisms.

(a) Unrealistic Goals

The first criticism by the opponents of NCLB is that it has “unrealistic goals.” (WK 2010t)

For instance, “[t]here's a fallacy in the law and everybody knows it,' said Alabama State Superintendent Joe Morton....According to the No Child Left Behind Act, by 2014 every child is supposed to test on grade level in reading and math. 'That can't happen,' said Morton. 'You have too many variables and you have too many scenarios, and everybody knows that would never happen.' Alabama State Board Member Mary Jane Caylor...argued the goal of 100 percent proficiency is unobtainable. Charles Murray wrote of the law: 'The United States Congress, acting with large bipartisan majorities, at the urging of the President, enacted as the law of the land that all children are to be above average.’” (WK 2010t; C. Stephens 2010; C. Murray 2008)

(b) The “Gaming” of the System

The second criticism by the opponents of NCLB is that it “games' the system.” (WK 2010t)

In other words, “[t]he system of incentives and penalties sets up a strong motivation for schools, districts, and states to manipulate test results. For example, schools have been shown to employ 'creative reclassification' of drop-outs (to reduce unfavorable statistics).” (WK 2010t; FCO 2004)

In these cases, “these and other strategies create an inflated perception of NCLB's successes, particularly in states with high minority populations.” (WK 2010t; W. Haney 2006)

In addition, “[t]he incentives for an improvement...may cause states to lower their official standards. Because each state can produce its own standardized tests, a state can make its statewide tests easier to increase scores. Missouri, for example, improved testing scores but openly

admitted that they lowered the standards. A 2007 study by the U.S. Dept. of Education indicates that the observed differences in states' reported scores is largely due to differences in the stringency of their standards.” (WK 2010t; SCDE 2003; NCES 2007)

(c) Problems with Standardized Tests

The third criticism by the opponents of NCLB is that it encourages a narrow focus on teaching skills. (WK 2010t)

For the critics, “the focus on standardized testing (all students in a state take the same test under the same conditions) as the means of assessment encourages teachers to teach a narrow subset of skills that will increase test performance rather than focus on deeper understanding that can be readily transferred to similar problems. For example, if the teacher knows that all of the questions on a math test are simple addition equations (e.g., $2+3=5$), then the teacher might not invest any class time on the practical applications of addition (i.e. treating $2+3=5$ as a word problem) so that there will be more time for the material which is assessed on the test. This is colloquially referred to as 'teaching to the test.’” (WK 2010t)

One negative consequence “results in teachers staying away from unique styles of teaching, but instead requires them to follow a more conventional method in order to prepare the students for the standardized yearly tests. This abandonment of creativity in the classroom leaves teachers with a feeling of disdain as they are no longer given ample opportunity to help students learn in their own ways. Critics of the bill state that students also suffer from the lack of inventive ways of learning, and the strain of learning standardized testing practices can have a lasting affect on the child's capabilities and motivation. Standardized testing also can change the way students learn, causing them to avoid thinking deeply into an issue and only focusing on the material that will be tested.” (WK 2010t)

In other cases, “many teachers who practice 'teaching to the test' actually misinterpret the educational outcomes the tests are designed to measure. On two state tests (New York State and Michigan) and the National Assessment of Educational Progress (NAEP) almost two-thirds of eighth graders missed math word problems that required an application of the Pythagorean theorem to calculate the distance between two points. [G.] Wiggins [2005] and [J.] McTighe blamed the low success rate on teachers who correctly anticipated the content of the tests, but incorrectly assumed each test would present rote knowledge/skill items rather than well-constructed, higher-order items.” (WK 2010t)

Worse, “[t]he practice of giving all students the same test, under the same conditions, has been accused of inherent cultural bias because

different cultures may value different skills. It also may conflict with the Individuals with Disabilities Education Act (IDEA), which states that schools must accommodate disabled students. For example, it is normally acceptable for visually impaired students to be read test material aloud. However, on a NCLB-mandated test, a group of blind students had their scores invalidated (reported as zeros) because the testing protocol did not specifically allow for test readers to speak.” (WK 2010t; L. Cohen 2007; NEA 2006)

(d) Incentives against Low-Performing Students

The fourth criticism by the opponents of NCLB is that it encourages “lower expectations.” (WK 2010t)

The reason is that, “if the school fails to make adequate progress,” the result “is not only to provide additional help for students, but also to impose punitive measures on the school,” so “the incentives are to set expectations lower rather than higher.” (WK 2010t)

(e) Neglect of Gifted, Talented, and High-Performing Students

The fifth criticism by the opponents of NCLB is that it also ends up neglecting “gifted, talented, and other high-performing students.” (WK 2010t)

The reason is that, “[s]ome local schools are only funding instruction for core subjects or for remedial special education. NCLB puts pressure on schools to guarantee that nearly all students will meet the minimum skill levels (set by each state) in reading, writing, and arithmetic, but requires nothing beyond these minimums. Programs that are not essential to achieving the mandated minimum skills are neglected or canceled by those districts. In particular, NCLB does not require any programs for gifted, talented, and other high-performing students. While federal law is silent on the requirement for funding gifted programs, the practice can violate the mandates of several states (such as Arizona, California, Virginia, and Pennsylvania) to identify gifted students and provide them with an appropriate education, including grade advancement.” (WK 2010t; J. Cloud 2007)

(f) State Refusal to Produce Non-English Assessments

The sixth criticism by the opponents of NCLB is that it allows some states to refuse giving “non-English assessments.” (WK 2010t)

In other words, “[a]ll students who are learning English have an automatic three-year window to take assessments in their native language, after which they must normally demonstrate proficiency on an English-language assessment. However, the local education authority may grant an exception to any individual English learner for another two years’ testing

in his or her native language on a case-by-case basis. In practice, however, only 10 states choose to test any English language learners in their native language (almost entirely Spanish speakers). The vast majority of English language learners are given English language assessments.” (WK 2010t; J. Crawford 2007)

(g) NCLB and the Impact on Arts and Elective Education

The seventh criticism by the opponents of NCLB is that it has a negative impact on other kinds of education. (WK 2010t)

For example, “NCLB’s main focus from the time it was implemented has been skills in reading, writing and mathematics, areas where the United States feels it must succeed in order to be competitive in the current global market. However, as the years have passed since it went into effect in 2002, an alarming trend has emerged: the detrimental effect this law has had on subject areas and classes which are not held accountable, or are testable, by the NCLB mandate.” (WK 2010t)

Tina Beveridge (2010) said it well, when she wrote: “The long-term effects of NCLB are not yet evident, but the short-term effects have been detrimental to all non tested subjects, especially those courses that are typically considered electives”; this then means that “in the current time of budget crisis, almost all of the funding that schools receive from the government stemming from NCLB are now allocated to only the testable subjects as well as the tests themselves.” (WK 2010t)

In one report in 2007, “almost 71% of schools have reduced instruction time in subjects such as history, arts, language and music, in order to give more time and resources to mathematics and English. It is understandable that schools fear the consequences should they not make AYP (Adequate Yearly Progress), however we are cheating our students out of a well rounded education.” (WK 2010t; A. Grey 2010; P. Pederson 2007)

(h) Narrow Definition of Research

The eighth criticism by the opponents of NCLB is that it has “a narrow definition of research.” (WK 2010t)

For “[s]ome school districts and researchers [who] object to the limitation created by the 'scientifically based research standard'”—NCLB does not favor “research based on case studies, ethnographies, clinical interviews, discourse analysis, grounded theory, action research, teaching experiments, design research and other forms of qualitative research” which “are generally excluded from this category. Furthermore, the inability to employ random assignment for important educational predictors such as race and socio-economic status may exclude a large

amount of quasi-experimental work that could contribute to educational knowledge.” (WK 2010t; R. Beghetto 2003)

(i) Limitations on Local Control

The ninth criticism by the opponents of NCLB is that it imposes “limitations on local control.” (WK 2010t)

For instance, “NCLB sets a new standard for federalizing education and setting a precedent for further erosion of state and local control. Libertarians and some conservatives...argue that the federal government has no constitutional authority in education, which is why participation in NCLB is technically optional: States need not comply with NCLB, as long as they are willing to forgo the federal funding that comes with it. The states that choose not to receive funding will have their taxes used in another state instead.” (WK 2010t; R. Holland 2004)

(j) Facilitation of Military Recruitment

The tenth criticism by the opponents of NCLB is that it “facilitates military recruitment.” (WK 2010t)

The reason is straightforward enough, because “NCLB (In section 9528) requires public secondary schools to provide military recruiters the same access to facilities as a school provides to higher education institution recruiters. Schools are also required to provide contact information for every student to the military if requested. If the school refuses to provide the information, that school can lose all of its federal funding until it provides such information.” (WK 2010t)

In addition, “Section 9528 of the NCLB...states that military recruiters are permitted to speak to students as well as take them to various military functions, provide transportation to/from a recruiting office and to the school of the student and from school to the registered home address of the student as long as the student is of the age of 17 and the student provides consent.” (WK 2010t)

(k) Increased Segregation in Public Schools

And the eleventh criticism by the opponents of NCLB is that it “increases segregation in public schools.” (WK 2010t)

For the critics, “No Child Left Behind has played a role in the increase of segregated public schools. Studies have shown that many African American students attend the lowest performing schools in the country, and African Americans score considerably lower on almost every indicator of academic well-being than do Whites. For example, high minority and high poverty schools score much lower on standardized tests than low minority and low poverty schools, but 71% of African Americans attend high minority schools and 72% of African Americans attend high-

poverty schools. Standardized assessment scores reflect these disparities: the percentage of African Americans meeting proficiency in national assessments in reading and math is less than one fourth of that of White students.” (WK 2010t) C. Knaus 2007)

A More Detached Viewpoint

Surely, these criticisms of NCLB by its opponents do not mean to favor one side over the other but to show us the opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of no child left behind, and the politics of teaching as a case study here) are not to the extent that the respective defenders would like us to believe.

Furthermore, the analysis of no child left behind, and the politics of teaching, can teach us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the finiteness-transfiniteness principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the change-constancy principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of soundness for a system of ideas, as in the claims by NCLB), there is informalness (e.g., the nonformal nature of the claims by NCLB, since the critics reject the claims as false, misleading, exaggerating, and something along that). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of the proponents of NCLB, in that “setting high standards and establishing measurable goals can improve individual outcomes in education”), there is relativeness (e.g., what is true for the claims by the proponents of NCLB is not necessarily so for the criticisms by the opponents of NCLB). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of schools under NCLB to focus on “standardized testing”), there is unpredictability (e.g., the more

difficult task to predict the particular responses of individual schools to the focus on “standardized testing” under NCLB, as revealed in the numerous creative ways to manipulate the requirements that the critics had pointed out). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by the proponents of NCLB about its desirability, in that “setting high standards and establishing measurable goals can improve individual outcomes in education”), there is inexplicability (e.g., the lack of sufficient explanation by the proponents of NCLB of why these “high standards” are realistic at all, as criticized by its opponents). And the reverse direction also holds true.

In relation to the finiteness-transfiniteness principle, if there is finiteness (e.g., the finite number of claims made by the proponents of NCLB), there is transfiniteness (e.g., the transfinite number of “too many variables and...too many scenarios,” such that the outcome is far from being certain, as pointed out by Superintendent Joe Morton). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of “incentives and penalties” under NCLB to comply with the requirement of standardized tests), there is vagueness (e.g., the vagueness in the identification, since “schools, districts, and states” have come up with creative way “to manipulate test results,” like “creative reclassification’ of drop-outs...to reduce unfavorable statistics”). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of NCLB by its proponents, as shown in the favorable claims), there is complicatedness (e.g., the relatively more complicated analysis of NCLB by its enemies, as shown in the criticisms). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of the relationship between “high standards and...measurable goals,” on the one hand, and the improvement of “individual outcomes in education,” on the other hand, under NCLB), there is hiddenness (e.g., the bias in NCLB, as shown by the different negative outcomes against low-performing students and against the arts and elective subjects, for instance). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of successful students in standardized tests who benefit from NCLB), there is emptiness (e.g., the

relative less dense, or more empty, concentration of black students who benefit from NCLB). And the reverse direction also holds true.

In relation to the change-constancy principle, if there is change (e.g., the different changes brought about by NCLB in teaching, like the focus on test results), there is constancy (e.g., the ever constancy of problems in education for those who do not perform well, with or without NCLB). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of progress by African Americans students to do well in standardized tests), there is quickness (e.g., the relatively faster speed of progress by students in low minority and low poverty schools to do well in standardized tests). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relative expansion of the influence of standardized education under NCLB in the 2000's), there is contraction (e.g., the relative contraction of the influence of the arts and elective education in the 2000's, under NCLB). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of standards-based education), there is praxis (e.g., the practical application of standards-based education to NCLB during the Bush administration). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about NCLB, as shown in the favourable claims by its proponents), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about NCLB, by the critics who have different views about NCLB). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to learn about things in the state of nature in a relatively primitive way), there is transformation (e.g., the technical transformation of human learning by way of NCLB for the focus on standardized tests). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different views about NCLB), there is asymmetry (e.g., the more favorable views about NCLB by its proponents—but the unfavorable views about NCLB by its opponents). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the “incentives” under NCLB for the compliance with the requirement of standardized tests), there is hardness (e.g., the “penalties” under NCLB

against any refusal to comply with the requirement of standardized tests). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by NCLB, as shown in the problems pointed out by the critics), there is progression (e.g., the progress made by NCLB to improve “individual outcomes in education”). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and regulation of values and beliefs, regardless of whether this be done by way of standards-based education or non-standards-based education), there is difference in outcome (e.g., the contribution to the molding and regulation of values and beliefs by way of standards-based education for a focus on test results—but the contribution to the molding and regulation of values and beliefs by way of non-standards-based education for a focus on individualized creative teaching and learning). And the reverse direction also holds true.

Teaching and Culture

Teaching, when examined from the perspective of culture, can cast an illuminating light on its possibility and desirability, and this can be shown by way of two case studies, namely, (2.5.1) teaching and the controversy about the Great Books, and (2.5.2) teaching, and the diverse history and philosophy of education—to be addressed hereafter, in that order.

Teaching, and the Controversy about the Great Books

An excellent case study here to understand teaching from the perspective of culture has to do with teaching in relation to the controversy about the Great Books.

In the Western tradition, for instance, the term “Great Books” refers to “the Western canon,” which is to “denote a canon of books, and, more widely, music and art, that has been the most influential in shaping Western culture. It asserts a compendium of the 'greatest works of artistic merit.'” (WK 2010u)

Examples of the Western Canon

The Western canon is important enough in the context of “educational perennialism and the development of 'high culture.'” Although previously held in high regard, it has been the subject of increasing contention

through the latter half of the 20th century. In practice, debates and attempts to actually define the Canon in lists are essentially restricted to books of various sorts: Literature, including Poetry, Fiction and Drama, autobiographical writings and Letters, Philosophy and History. A few accessible books on the Sciences are usually included.” (WK 2010u)

More specifically, the Western canon can be illustrated by different classifications, and three good ones are (a) “shorter canonical lists,” (b) “university reading lists,” and (c) “longer canonical lists,” as shown below, in that order. (WK 2010u)

(a) Shorter Canonical Lists

Good examples of shorter canonical lists are those “in which the selectors have attempted to list only the most important works,” like the following collections: (WK 2010u)

- Ex: “The Harvard Classics”
- Ex: “Great Books”
- Ex: “Great Books of the Western World”
- Ex: “Yale College Directed Studies Curriculum”

Surely, there can be others, but these four are among the most often cited.

(b) University Reading Lists

Good examples of university reading lists are those which are “good indicators of what is considered to be in the Western canon,” as shown below: (WK 2010u)

- Ex: “University of Chicago Common Core”
- Ex: “Columbia College Core Curriculum”
- Ex: “St. John's College Reading List”
- Ex: “Stanford University's Program in Structured Liberal Education Curriculum”
- Ex: “Princeton University's Interdisciplinary Approaches to Western Culture”
- Ex: “University of Notre Dame's Program of Liberal Studies Curriculum”
- Ex: “Colgate University's Required Western Traditions class”

Again, there can be others, but these ones above are among the most often cited.

(c) Longer Canonical Lists

And good examples of longer canonical lists are those “in which the selectors have attempted to be more comprehensive,” as shown below: (WK 2010u)

- Ex: “Loeb Classical Library (Greek and Latin authors)”
- Ex: “I Tatti Renaissance Library (Renaissance authors)”
- Ex: “Everyman's Library (Modern works)”
- Ex: “Penguin Classics”

Once more, there can be others, but these four here are among the most often cited.

The Time-Consuming Process of Listmaking

These different classifications of the Western canon precisely show its diversity, and one major reason has to do with its unique process of listmaking, which is quite time-consuming, so disagreements among scholars abound.

After all, “[t]he process of listmaking—defining the boundaries of the canon—is endless,” and John Searle (1990) once nicely said that “[i]n my experience there never was, in fact, a fixed 'canon'; there was rather a certain set of tentative judgments about what had importance and quality. Such judgments are always subject to revision, and in fact they were constantly being revised.” (WK 2010u)

One good example of the time-consuming effort to list the Western canon concerns the exhausting “attempts at compiling an authoritative canon in the English-speaking world,” namely, “the Great Books of the Western World program. This program, developed in the middle third of the 20th century, grew out of the curriculum at the University of Chicago. University president Robert Hutchins and his collaborator Mortimer Adler developed a program that offered reading lists, books, and organizational strategies for reading clubs to the general public.” (WK 2010u)

An even earlier attempt is “the Harvard Classics (1909), which “was promulgated by Harvard University president Charles W. Eliot, whose thesis was the same as Carlyle's,” when Thomas Carlyle wrote: “The greatest university of all is a collection of books.” (WK 2001u)

The Endless Debate

It is thus no wonder that the diversity about what counts as part of the Western canon also reveals the endless debate between its proponents and opponents.

(a) On the Negative Side

On the negative side of the debate, for the opponents in the United States, “[t]here has been an ongoing, intensely political debate over the nature and status of the canon since at least the 1960s. In the United States, in particular, the canon has been attacked as a compendium of books written mainly by ‘dead white European males,’ that thus do not represent the viewpoints of many others in contemporary societies around the world.” (WK 2010u)

One of the contentions here has to do with “the question of authority—who should have the power to determine what works are worth reading and teaching?” (WK 2010u)

So, one central dilemma here is that any “hierarchical ranking of books,...as it were valid,...would argue against any set of required readings whatever; indeed, any list you care to make about anything automatically creates two categories, those that are on the list and those that are not.” (WK 2010u)

This is all the more contentious nowadays in this age of globalization, because the word “Western” in “the Western canon” reveals its cultural contingency (or bias).

Historically, “[t]he origins of the word ‘West’ in terms of geopolitical boundaries started in the 19th century. Prior to this, most people would have thoughts about different nations, languages, individuals, and geographical regions, but with no idea of ‘Western’ nations as we know it today. Many world maps were so crude, inaccurate, and not well known before the 19th century that specific geographical and political differences would be harder to measure. Few would have access to good maps and even fewer had access to accurate descriptions of those who lived in far away lands. Some...suggest that Western thought as we think of it today, is shaped by ideas of the 19th and 20th centuries, originating mainly in Europe. What we think of as Western thought today is generally defined as Greco-Roman and Judeo-Christian culture, the Renaissance, the Enlightenment and colonialism....As a consequence the term ‘Western thought’ is, at times, unhelpful and vague, since it can define a wide range of separate, though sometimes related, sets of traditions, political groups, religious groups, and individual writers.” (WK 2010u)

(b) On the Affirmative Side

On the affirmative side of the debate, for the proponents in the United States, there is a strong defense by “Allan Bloom in his 1987 book *The Closing of the American Mind*”....Authors such as Yale University Professor of Humanities Harold Bloom (no relation to Allan) have also argued strongly in favor of the canon, and in general the canon remains as a represented idea in most institutions, though its implications continue to be debated heavily.” (WK 2010u)

For these proponents, “those who undermine the canon do so out of primarily political interests, and that such criticisms are misguided and/or disingenuous. As philosopher John Searle [1990] wrote that “[t]here is a certain irony in this in that earlier student generations, my own for example, found the critical tradition that runs from Socrates through the Federalist Papers, through the writings of Mill and Marx, down to the twentieth century, to be liberating from the stuffy conventions of traditional American politics and pieties. Precisely by inculcating a critical attitude, the 'canon served to demythologize the conventional pieties of the American bourgeoisie and provided the student with a perspective from which to critically analyze American culture and institutions. Ironically, the same tradition is now regarded as oppressive. The texts once served an unmasking function; now we are told that it is the texts which must be unmasked.” (WK 2010u)

A Broader Horizon

In any event, the introduction to this endless debate between the proponents and opponents of the Western canon does not mean to favor one side over the other but to teach us the opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of culture with teaching and the controversy about the Great Books as a case study here) are not to the extent that the respective defenders would like us to believe.

In fact, the introduction to teaching and the controversy about the Great Books here can also teach us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the change-constancy principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-

transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of soundness for a system of ideas, as in the alleged legitimate compilation of the Great Books), there is informalness (e.g., the nonformal nature of certain illegitimacy in a compilation of the Great Books, because of the central dilemma that any “hierarchical ranking of books,...as it were valid,...would argue against any set of required readings whatever,” since “any list you care to make about anything automatically creates two categories, those that are on the list and those that are not,” which causes disagreements among different groups). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of Allan Bloom in his defense of Great books), there is relativeness (e.g., what is true for Allan Bloom in regard to the Great Books is not so for the critics, who reject them as the works of “dead white European males”). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of the proponents of the Western canon to search for “a canon of books...that has been the most influential in shaping Western culture”), there is unpredictability (e.g., the more difficult task to predict which particular classification is accepted as representative of the Western canon in any future historical era, since there has been the endless debate about it). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation, by the proponents of the Western canon, of the importance of the Great Books, because they are “books...that has been the most influential in shaping Western culture”), there is inexplicability (e.g., the lack of sufficient explanation, for those who are critical to the Western canon, of why it should necessarily have “the...authority...to determine what works are worth reading and teaching,” especially in this age of globalization, when the West has its fair share of cultural contingency or bias). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the three classifications of the Western canon), there is vagueness (e.g., the vagueness in the three

classifications of the Western canon, since it is not clear why there should be only three, or why the individual items in each classification should be in the way that they are). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of the Great Books by their proponents), there is complicatedness (e.g., the relatively more complicated analysis of the Great Books by their opponents). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of some good books which have been “the most influential in shaping Western culture,” in accordance to their proponents), there is hiddenness (e.g., the bias in the compilation of the Great Books, because each classification has different assumptions and criteria, which are subject to criticisms by the opponents). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of the books by “dead white European males” in the Western canon), there is emptiness (e.g., the relatively less dense, or more empty, concentration of the books by dead white European females in the Western canon). And the reverse direction also holds true.

In relation to the change-constancy principle, if there is change (e.g., the ever changing list of books which have been the most influential in Western culture, depending on a compilation in question), there is constancy (e.g., the ever constancy of the search for good books which have been the most influential in culture, whether Western or not). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of a white European feminist to accept the Western canon), there is quickness (e.g., the relatively faster speed of a white European patriarch to accept the Western canon). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relative expansion of the influence of the contemporary critics of the Western canon as the works of “dead white European males”), there is contraction (e.g., the relative contraction of the influence of the Western canon in this age of globalization, because the word “Western” in “the Western canon” reveals its cultural bias). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of the Western canon), there is praxis (e.g., the

practical application of the Western canon to university reading lists as in the University of Chicago, Columbia College, St. John's College, Stanford University, Princeton University, etc.). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about the Great Books to be read for a good liberal education), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about the Great Books, by the critics who regard those books as the works of “dead white European males”). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans in the state of nature to communicate with each other in a pre-historic way), there is transformation (e.g., the technical transformation of human communication by the invention of the Great Books). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different views about the Great Books, both negative and affirmative), there is asymmetry (e.g., the relatively more popularity of the Western canon on such campuses like the University of Chicago, Columbia College, St. John's College, Stanford University, Princeton University, etc.—but the relatively less popularity of the Western canon on such campuses like Beijing University, Harbin Institute of Technology, etc.). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the approval of some books to be part of university reading lists), there is hardness (e.g., the disapproval of some other books to not be part of university reading lists). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by the Western canon, as shown in the criticisms by the critics), there is progression (e.g., the progress made by the Western canon for a more well-rounded education). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of values and beliefs, regardless of whether this be done by way of the imposition of the Western canon or not), there is difference in outcome (e.g., the contribution to the molding and control of values and beliefs by way of the imposition of the Western canon for a comprehensive education about Western culture—but the contribution to the molding and control of values and beliefs by way of the rejection of the Western canon for a more inclusive

education free of Western cultural bias). And the reverse direction also holds true.

Teaching, and the Diverse History and Philosophy of Education

Another way to evaluate the possibility and desirability of teaching from the perspective of culture concerns teaching and the diverse history and philosophy of education.

Enculturation and Socialization

The history of education is in fact “the history of teaching and learning. Each generation, since the beginning of human existence, has sought to pass on cultural and social values, traditions, morality, religion and skills to the next generation.” (WK 2010v; D. Kendall 2004)

There are two processes involved in the history of education, namely, “enculturation” and “socialization”—in that the former (enculturation) refers to the giving end, that is, “the passing on of culture,” whereas the latter (socialization) refers to the receiving end, that is, “the learning of social values and behaviours.” (WK 2010v)

So, “[t]he history of the curricula of such education reflects human history itself, the history of knowledge, beliefs, skills and cultures of humanity.” (WK 2010v)

History of Education at a Glance

In the older days of “pre-literate societies, education was achieved orally and through observation and imitation. The young learned informally from their parents, extended family and grand parents. At later stages of their lives, they received instruction of a more structured and formal nature, imparted by people not necessarily related, in the context of initiation, religion or ritual.” (WK 2010v; P. Hughes 1997; M. Adeyemi 2002)

Later, in ancient civilizations, “[a]s the customs and knowledge... became more complex, many skills would have been learned from an experienced person on the job, in animal husbandry, agriculture, fishing, preparation and preservation of food, construction, stone work, metal work, boat building, the making of weapons and defenses, the military skills and many other occupations.” (WK 2010v)

Then, “[w]ith the development of writing, it became possible for stories, poetry, knowledge, beliefs, and customs to be recorded and passed on more accurately to people out of earshot and to future generations. In

many societies, the spread of literacy was slow; orality and illiteracy remained predominant for much of the population for centuries and even millennia. Literacy in preindustrial societies was associated with civil administration, law, long distance trade or commerce, and religion. A formal schooling in literacy was often only available to a small part of the population, either at religious institutions or for the wealthy who could afford to pay for their tutors. The earliest known universities, or places of higher education, started teaching a millennium or more ago.” (WK 2010v; P. Foster 1984)

In modern times, “[u]niversal education of all children in literacy has been a recent development, not occurring in many countries until after 1850 CE. Even today, in some parts of the world, literacy rates are below 60 per cent (for example, in Afghanistan, Pakistan, Bangladesh). Schools, colleges and universities have not been the only methods of formal education and training. Many professions have additional training requirements, and in Europe, from the Middle Ages until recent times, the skills of a trade were not generally learnt in a classroom, but rather by serving an apprenticeship.” (WK 2010v)

And “nowadays, formal education consists of systematic instruction, teaching and training by professional teachers. This consists of the application of pedagogy and the development of curricula.” (WK 2010v)

Foreseeable Worldwide Trends

The current worldwide trends are that “some kind of education is compulsory to all people in most countries. Due to population growth and the proliferation of compulsory education, UNESCO has calculated that in the next 30 years more people will receive formal education than in all of human history thus far.” (WK 2010v; K. Robinson. 2006)

In recent years, “illiteracy has greatly decreased....In some countries this has been the result of deliberate government action. For example, in Cuba the illiteracy rate was for many years less than that in the USA. Illiteracy and the percentage of populations without any schooling have decreased in the past several decades. For example, the percentage of population without any schooling decreased from 36% in 1960 to 25% in 2000.” (WK 2010v)

In spite of this improvement, there remains a gap of educational achievement between developing countries and developed ones. For instance, “[a]mong developing countries, illiteracy and percentages without schooling in 2000 stood at about half the 1970 figures. Among developed countries, figures about illiteracy rates differ widely. Often it is said that they decreased from 6% to 1%. However, the National Adult

Literacy Survey of 1993 showed that more than 20% of the adults in the USA were functionally illiterate. These findings were confirmed in a 2003 follow-up study. Illiteracy rates in less economically developed countries (LEDCs) surpassed those of more economically developed countries (MEDCs) by a factor of 10 in 1970, and by a factor of about 20 in 2000. Illiteracy decreased greatly in LEDCs, and virtually disappeared in MEDCs. Percentages without any schooling showed similar patterns.” (WK 2010v; I. Kirsch 2002)

Noticeable Philosophies in the History of Education

This brief history of education also reveals some noticeable philosophies in regard to teaching and learning, which vary from culture to culture and from thinker to thinker.

Consider a few of them below, for illustration.

(a) In Europe

(a1) One good starting example is Plato, who is “the earliest important educational thinker. He saw education as the key to creating and sustaining his *Republic*. He advocated extreme methods: removing children from their mothers' care and raising them as wards of the state, with great care being taken to differentiate children suitable to the various castes, the highest receiving the most education, so that they could act as guardians of the city and care for the less able. Education would be holistic, including facts, skills, physical discipline, and music and art, which he considered the highest form of endeavor.” (WK 2010w)

Although, for Plato, “the individual was best served by being subordinated to a just society,” his view is not aristocratic and in fact “moves us away from aristocracy as a political system....What this establishes is essentially a system of selective public education premised on the assumption that an educated minority of the population are, by virtue of their education (and inborn educability), sufficient for healthy governance. Today's tracking systems, in which students are segregated into groups of common ability levels, could be justified with Plato's ideas.” (WK 2010w)

(a2) One of Plato's students, Aristotle, offered a different philosophy of education, in that “Aristotle considered human nature, habit and reason to be equally important forces to be cultivated in education. Thus, for example, he considered repetition to be a key tool to develop good habits. The teacher was to lead the student systematically; this differs, for example, from Socrates' emphasis on questioning his listeners to bring out

their own ideas (though the comparison is perhaps incongruous since Socrates was dealing with adults).” (WK 2010w)

In addition, “Aristotle placed great emphasis on balancing the theoretical and practical aspects of subjects taught. Subjects he explicitly mentions as being important included reading, writing and mathematics; music; physical education; literature and history; and a wide range of sciences. He also mentioned the importance of play. One of education's primary missions for Aristotle, perhaps its most important, was to produce good and virtuous citizens for the polis. All who have meditated on the art of governing mankind have been convinced that the fate of empires depends on the education of youth.” (WK 2010w)

(a3) Later in the 18th century, Jean-Jacques Rousseau questioned the Platonic philosophy of education and “rejected it as impractical due to the decayed state of society. Rousseau also had a different theory of human development; where Plato held that people are born with skills appropriate to different castes (though he did not regard these skills as being inherited), Rousseau held that there was one developmental process common to all humans. This was an intrinsic, natural process, of which the primary behavioral manifestation was curiosity. This differed from Locke's 'tabula rasa' in that it was an active process deriving from the child's nature, which drove the child to learn and adapt to its surroundings.” (WK 2010w)

For Rousseau, “in his book *Emile*, “all children are perfectly designed organisms, ready to learn from their surroundings so as to grow into virtuous adults, but due to the malign influence of corrupt society, they often fail to do so. Rousseau advocated an educational method which consisted of removing the child from society—for example, to a country home—and alternately conditioning him through changes to environment and setting traps and puzzles for him to solve or overcome.” (WK 2010w)

(a4) Then, in the 20th century, Alexander Sutherland Neill “founded Summerhill School, the oldest existing democratic school in Suffolk, England in 1921. He wrote a number of books that now define much of contemporary democratic education philosophy. The first major writer to discuss a nascent philosophy of democratic education was Leo Tolstoy who operated his own democratic school for peasant children in Yasnaya Polyana, Russia in the late 19th century. The primary theorist, however, of what developed into democratic education was John Dewey. His works on the relationship between democracy and education became foundational literature for the broader progressive education movement.” (WK 2010w)

In the case of Neill, “the happiness of the child should be the paramount consideration in decisions about the child's upbringing, and that

this happiness grew from a sense of personal freedom. He felt that deprivation of this sense of freedom during childhood, and the consequent unhappiness experienced by the repressed child, was responsible for many of the psychological disorders of adulthood.” (WK 2010w)

(b) In the Middle East

A well-known example is Ibn Sina (also known as Avicenna in the West) in the 11th century, who wrote about “maktab,” which refers to an elementary school in the medieval Islamic world, which “dates back to at least the 10th century. Like madrasahs (which referred to higher education), a maktab was often attached to a mosque.” (WK 2010w)

Ibn Sina argued that “children can learn better if taught in classes instead of individual tuition from private tutors, and he gave a number of reasons for why this is the case, citing the value of competition and emulation among pupils as well as the usefulness of group discussions and debates.” (WK 2010w)

In the early stage of education, for Ibn Sina, “children should be sent to a maktab school from the age of 6 and be taught primary education until they reach the age of 14. During which time, he wrote that they should be taught the Qur'an, Islamic metaphysics, language, literature, Islamic ethics, and manual skills (which could refer to a variety of practical skills).” (WK 2010w; M. Asimov 1999)

Later, in the secondary stage of education, “Ibn Sina refers to the secondary education stage of maktab schooling as the period of specialization, when pupils should begin to acquire manual skills, regardless of their social status. He writes that children after the age of 14 should be given a choice to choose and specialize in subjects they have an interest in, whether it was reading, manual skills, literature, preaching, medicine, geometry, trade and commerce, craftsmanship, or any other subject or profession they would be interested in pursuing for a future career. He wrote that this was a transitional stage and that there needs to be flexibility regarding the age in which pupils graduate, as the student's emotional development and chosen subjects need to be taken into account.” (WK 2010w; M. Asimov 1999)

In addition, “the empiricist theory of 'tabula rasa' was also developed by Ibn Sina. He argued that the 'human intellect at birth is rather like a tabula rasa, a pure potentiality that is actualized through education and comes to know' and that knowledge is attained through 'empirical familiarity with objects in this world from which one abstracts universal concepts' which is developed through a 'syllogistic method of reasoning; observations lead to prepositional statements, which when compounded lead to further abstract concepts.’” (WK 2010w)

(c) In Latin America

An excellent example concerns Paulo Freire in the 20th century, who “committed to the cause of educating the impoverished peasants of his nation [in Brazil] and collaborating with them in the pursuit of their liberation from oppression.” (WK 2010w)

In fact, “Freire is best-known for his attack on what he called the 'banking concept of education,' in which the student was viewed as an empty account to be filled by the teacher. Freire also suggests that a deep reciprocity be inserted into our notions of teacher and student; close to suggesting that the teacher-student dichotomy be completely abolished, he describes the roles of the participants in the classroom as the teacher-student (a teacher who learns) and the student-teacher (a learner who teaches). In its early, strong form this kind of classroom has sometimes been criticized on the grounds that it can mask rather than overcome the teacher's authority.” (WK 2010w)

(d) In the East

(d1) In India, for example, “during the Vedic period from about 1500 BC to 600 BC, most education was based on the Veda (hymns, formulas, and incantations, recited or chanted by priests of a pre-Hindu tradition) and later Hindu texts and scriptures.” (WK 2010v)

Vedic education was broad, because it taught “proper pronunciation and recitation of the Veda, the rules of sacrifice, grammar and derivation, composition, versification and meter, understanding of secrets of nature, reasoning including logic, the sciences, and the skills necessary for an occupation. Some medical knowledge existed and was taught. There is mention in the Veda of herbal medicines for various conditions or diseases, including fever, cough, baldness, snake bite and others. Education, at first freely available in Vedic society, became over time more discriminatory as the caste system, originally based on occupation, evolved, with the brahman (priests) being the most privileged of the castes.” (WK 2010v; A. Gupta 2007)

A bit later, there were “the Upanishads—another part of Hindu scriptures—dated from around 500 BC. These texts encouraged an exploratory learning process where teachers and students were co-travellers in a search for truth. The teaching methods used reasoning and questioning. Nothing was labeled as the final answer.” (WK 2010v; A. Gupta 2007)

Then, there was “the Gurukul system of education [which] supported traditional Hindu residential schools of learning; typically the teacher's house or a monastery. Education was free, but students from well-to-do families paid 'Gurudakshina,' a voluntary contribution after the completion

of their studies. At the Gurukuls, the teacher imparted knowledge of Religion, Scriptures, Philosophy, Literature, Warfare, Statecraft, Medicine, Astrology and History. The corpus of Sanskrit literature encompasses a rich tradition of poetry and drama as well as technical scientific, philosophical and generally Hindu religious texts, though many central texts of Buddhism and Jainism have also been composed in Sanskrit.” (WK 2010v)

(d2) And in China, “[d]uring the Zhou Dynasty (1045 BC to 256 BC), there were five national schools in the capital city, Pi Yong (an imperial school, located in a central location) and four other schools for the aristocrats and nobility, including Shang Xiang. The schools mainly taught the Six Arts: rites, music, archery, charioteering, calligraphy, and mathematics. According to the Book of Rituals, at age twelve, boys learned arts related to ritual (i.e. music and dance) and when older, archery and chariot driving. Girls learned ritual, correct deportment, silk production and weaving.” (WK 2010v; G. Hardy 2005; A. Kinney. 2004)

Most importantly, “[i]t was during the Zhou Dynasty that the origins of native Chinese philosophy also developed. Confucius (551 BC–479 BC) founder of Confucianism, was a Chinese philosopher who made a great impact on later generations of Chinese, and on the curriculum of the Chinese educational system for much of the following 2000 years.” (WK 2010v)

For Confucius, in the *Analects* (論語), he “presents himself as a 'transmitter who invented nothing.' He puts the greatest emphasis on the importance of study, and it is the Chinese character for study (or learning) that opens the text. In this respect, he is seen by Chinese people as the Greatest Master. Far from trying to build a systematic theory of life and society or establish a formalism of rites, he wanted his disciples to think deeply for themselves and relentlessly study the outside world, mostly through the old scriptures and by relating the moral problems of the present to past political events (like the *Annals*) or past expressions of feelings by common people and reflective members of the elite, preserved in the poems of the *Book of Odes* (詩經).” (WK 2010x)

However, “[b]ecause his vision of personal and social perfections was framed as a revival of the ordered society of earlier times, Confucius is often considered a great proponent of conservatism, but a closer look at what he proposes often shows that he used (and perhaps twisted) past institutions and rites to push a new political agenda of his own: a revival of a unified royal state, whose rulers would succeed to power on the basis of their moral merits instead of lineage; these would be rulers devoted to their people, striving for personal and social perfection. Such a ruler would

spread his own virtues to the people instead of imposing proper behavior with laws and rules.” (WK 2010x)

In later times, “during the Ch'in dynasty (246-207 BC), a hierarchy of officials was set up to provide central control over the outlying areas of the empire. To enter this hierarchy, both literacy and knowledge of the increasing body of philosophy was required: '...the content of the educational process was designed not to engender functionally specific skills but rather to produce morally enlightened and cultivated generalists.' The Nine rank system was a civil service nomination system during the Three Kingdoms (220-280 AD) and the Southern and Northern Dynasties (420-589 AD) in China. Theoretically, local government authorities were given the task of selecting talented candidates, then categorizing them into nine grades depending on their abilities. In practice, however, only the rich and powerful would be selected. The Nine Rank System was eventually superseded by the Imperial examination system for the civil service in the Sui Dynasty (581-618 AD).” (WK 2010v)

A Lesson to Learn

This summary of the history and philosophy of education, mostly from the standpoint of teaching, is no idle academic exercise, as it shows us not only the diverse cultural traditions of teaching in different places at different times in history but also some of the general patterns which can be detected over time to have a general understanding of the history of education in general.

This historical diversity of education is important, precisely to warn us against favoring any one cultural tradition over the other and to reveal to us the opposing sides of the debate, such that the possibility and desirability of teaching (from the perspective of culture with teaching and the history and philosophy of education as a case study here) are not to the extent that the respective defenders would like us to believe.

In addition, the introduction to teaching and the history and philosophy of education here can teach us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the partiality-totality principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the change-constancy principle, the order-chaos principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-

transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of completeness for a system of ideas, as in the Platonic philosophy of education), there is informalness (e.g., the nonformal nature of the Platonic philosophy of education, since it is yet to completely prove the validity of its extreme methods of education of “removing children from their mothers' care and raising them as wards of the state” and its collective goal that “the individual was best served by being subordinated to a just society,” for example). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of the Gurukul school of education, where “the teacher imparted knowledge of Religion, Scriptures, Philosophy, Literature, Warfare, Statecraft, Medicine, Astrology and History”), there is relativeness (e.g., what is good for the Gurukul school of education is not necessarily so for the Summerhill school of education, which is more student-centered). And the reverse direction also holds true.

In relation to the partiality-totality principle, if there is partiality (e.g., the partial view of each system of education as the best on the basis of its own rationales), there is totality (e.g., the more holistic view of all systems of education, such that the whole is not the sum of its parts, in that there is no one-size-fits-all system of education which is consistent with all of the individual ones). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of ancient systems of education to be more teacher-centered, in general), there is unpredictability (e.g., the more difficult task to predict exactly if or to what extent the future systems of education will or will not be teacher-centered too, given the rise and fall of different systems of education in history). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by Paulo Freire that his system of education is better because “the teacher-student dichotomy be completely abolished”), there is inexplicability (e.g., the lack of sufficient explanation, according to the critics who question its assumptions and premises, of why Freire's system of abolishing the teacher of authority is necessarily good in the first place). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of “personal and social

perfections” within the framework for “a revival of the ordered society of earlier times” in the Confucian system of education), there is vagueness (e.g., the vagueness in the identification of “personal and social perfections” in the Confucian system of education, since it is subject to different interpretations of what this might mean, as some scholars suggested that “Confucius is...a great proponent of conservatism” whereas others thought otherwise). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple view of education by Rousseau that “all children are perfectly designed organisms, ready to learn from their surroundings so as to grow into virtuous adults, but due to the malign influence of corrupt society, they often fail to do so”), there is complicatedness (e.g., the relatively more complicated analysis of Rousseau’s idea of education as romantic, according to his critics). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of “selecting talented candidates” on the meritocratic basis of “the Nine Rank System” in Imperial China), there is hiddenness (e.g., the hidden bias in “the Nine Rank System,” because, “[i]n practice, however, only the rich and powerful would be selected”). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of students who benefited from education which was “at first freely available in Vedic society”), there is emptiness (e.g., the relatively less dense, or more empty, concentration of students who benefited from education which “became over time more discriminatory as the caste system, originally based on occupation, evolved, with the brahman...being the most privileged of the castes”). And the reverse direction also holds true.

In relation to the change-constancy principle, if there is change (e.g., the ever changing systems of education in the history of education), there is constancy (e.g., the ever constancy of dealing with the challenge of teaching and learning in education, regardless of the numerous changes over time). And the reverse direction also holds true.

In relation to the order-chaos principle, if there is order (e.g., the attempt by Confucius to restore “the ordered society of earlier times” in his system of education), there is chaos (e.g., the concern by Confucius with “the times of division, chaos, and endless wars between feudal states” in ancient China). (WK 2010v) And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of the spread of literacy in ancient times),

there is quickness (e.g., the relatively faster speed of the spread of literacy in modern times, especially in advanced countries). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relative expansion of the influence of the Confucian way of teaching, as shown by the Emperor Wudi, who, in 124 BC, “established the Imperial Academy, the curriculum of which was the Five Classics of Confucius”), there is contraction (e.g., the relative contraction of the influence of the Confucian way of teaching, as shown by Chairman Mao in the modern era, who criticized the feudalistic decadence of Confucianism). (WK 2010v) And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of democratic education by Neill), there is praxis (e.g., “many of Neill’s ideas are widely accepted today” in schools). (WK 2010w) And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about education in Greek antiquity, as shown by “Socrates’ emphasis on questioning his listeners to bring out their own ideas”), there is novelty (e.g., the alternative novel challenge to the Socratic conventional wisdom on teaching, by Aristotle, who offered a different philosophy of education, in that “Aristotle considered human nature, habit and reason to be equally important forces to be cultivated in education” and “considered repetition to be a key tool to develop good habits”). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans in the state of nature to learn from the environment in a pre-literate way), there is transformation (e.g., the technical transformation of human learning by the invention, for example, of the Vedic system of education, “based on the Veda...and later Hindu texts and scriptures”). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the existence of different social groups in society), there is asymmetry (e.g., some individuals, “by virtue of their education...and inborn educability,” are more “sufficient for healthy governance” than others, according to Plato). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the reward for students who do well in schools), there is hardness (e.g., the punishment of students who do badly in schools). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by Freire’s system of education,

since, for its critics, “it can mask rather than overcome the teacher's authority”), there is progression (e.g., the progression made by Freire's system of education “in the pursuit of...liberation from oppression”). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of the extreme methods of Plato or the focus on curiosity by Rousseau), there is difference in outcome (e.g., the contribution to the molding and control of beliefs and behaviors, by way of the extreme methods of Plato for a more collective, disciplinary way of life—but the contribution to the molding and control of beliefs and behaviors by way of the focus on curiosity without the decadent influence of society by Rousseau for a more romantic way of life). And the reverse direction also holds true.

The Darkness of Teaching

This comprehensive analysis of the possibility and desirability of teaching, from the perspectives of the mind, nature, society, and culture, is important in showing us the different ways in which teaching is both possible and desirable, but not to the extent that the spokespersons from each side would like us to believe.

Teaching thus has its darkness, just as it has its brightness too, as the other side of the same coin.

But this is only one part of a larger story, since there is the other side of the story, which concerns learning, the opposite of teaching. Since this chapter already deals with teaching, the next chapter will therefore address the issue of learning.

These dual analyses should not be underestimated, because those on the side of teaching often downgrade learning merely as the receiving end of education without really appreciating it from the vantage point of learning too.

With this in mind, let's now turn to Chapter Three for the study of learning and its ambivalence—for which we now turn to chapter three.

Table 2.1. Teaching and Its Duplicity

• Teaching and the Mind

- Ex: the Socratic School of teaching, and the debate on the mind
- Ex: the school system, the unschooled mind, and teaching

• Teaching and Nature

- Ex: science, nature, and the dispute on teaching

• Teaching and Society

- Ex: no child left behind, and the politics of teaching

• Teaching and Culture

- Ex: teaching, and the controversy about the Great Books
- Ex: teaching, and the diverse history and philosophy of education

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: A summary of Ch.2 of *FPHEDU*

Table 2.2. The Socratic School of Teaching, and Its Critique

• Three Phases of the Socratic School of Teaching

- Ex: the Socratic method
- Ex: maieutics (midwifery)
- Ex: aletheia (disclosedness)

• Main Criticisms of the Socratic School of Teaching

- Firstly, “there is...more often...no clear answer at all” at the end of any Socratic questioning, and this is especially true in contemporary legal education. (WK 2010n) In fact, “most Socratic inquiries consist of a series of elenchi and typically end in aporia,” which is “a state where they [the participants] no longer know what to say about the subject under discussion.” (WK 2010n)
- Secondly, it presupposes an uncritical religious dogma in Orphism, in that “knowledge is latent in the human conscience” or that “there is a stored knowledge in the conscience by tradition and the experience of past generations.” (WK 2010p)
- Thirdly, the idea of truth as aletheia (disclosedness) remains problematic. In retrospect, a critical observation by Jacques Derrida against this Heideggerian work on aletheia is worth mentioning here: “From/after this laughter and this dance, what I will call Heideggerian hope, comes into question. I am not unaware how shocking this word might seem here.” (S. White 1991: 76-7)
- Fourthly, reasoning by itself does not necessarily lead to knowledge, freedom, or happiness, as famously pointed out by Isaiah Berlin. (1969:144,152-4)
- And fifthly, still another criticism of the Socratic School of teaching is that reasoning by itself does not answer some deep questions in religion or ethics. It is fitting, at this juncture, to remember that “Aristotle also claimed that this [Socratic] method is not suitable for ethics.” (WK 2010n)

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 2.2.1* of *FPHEDU*. See book for citations.

Table 2.3. Criticisms against the Idea of the Unschooled Mind

- Firstly, one criticism of Gardner’s idea of the unschooled mind is that it is based on an uncritical assumption of children’s intuitive learning “in much the same way as a language is learned.” (S. London 1993)
- Secondly, another criticism of Gardner’s idea of the unschooled mind is that its reliance on the theory of multiple intelligences (i.e., “spatial, linguistic, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, naturalistic, and existential”) remains unproven. (WK 2010s)
- Thirdly, still another criticism of Gardner’s idea of the unschooled mind is that its reliance on multiple intelligences “is ad hoc,” because “Gardner is not expanding the definition of the word 'intelligence'; rather, he denies the existence of intelligence as traditionally understood and instead uses the word 'intelligence' whenever other people have traditionally used words like 'ability.' This practice has been criticized by Robert J. Sternberg (1983, 1991), [M.] Eysenck (1994), and [S.] Scarr (1985).” (WK 2010s)
- Fourthly, still another criticism of Gardner’s idea of the unschooled mind is that “Gardner is criticized for underestimating the effects exerted on the various domains of intelligences by processes that define general processing efficiency, such as speed of processing, executive functions, and working memory, and meta-cognitive processes underlying self-awareness and self-regulation.” (WK 2010s)
- And fifthly, still another criticism of Gardner’s idea of the unschooled mind is that Gardner does not address such critical questions like “Should schools be focusing on teaching to students' strengths or on remediating where they are weak?” or “What kind of correlations exist between the intelligences, or are they completely independent?” (WK 2010s)

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 2.2.2* of *FPHEDU*. See book for more details and citations.

Table 2.4. Problems with the National Science Education Standards

- Firstly, one major criticism of the “National Science Education Standards” for teaching is religious in nature, in that, for those who are creationists, the teaching of evolutionary theory does not answer certain religious questions.
- Secondly, another major criticism of the “National Science Education Standards” for teaching is legal in nature, in that, for those who are creationists, the teaching of evolutionary theory in schools is biased against creation theory, because the former is allowed to be taught whereas the latter is not.
- Thirdly, still major criticism of the “National Science Education Standards” for teaching is philosophical in nature, in that it does not seriously question science to its epistemological roots, with the consequence of misleadingly accepting it as the sole “legitimate scholarship.”
- And fourthly, still another major criticism of the “National Science Education Standards” for teaching is educational in nature, in that it is more teacher-centered than student-centered, as will be clear in the next chapter on learning (not teaching).

Notes: The examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 2.3.1* of *FPHEDU*. See book for citations.

Table 2.5. The Politics of No Child Left Behind

• The Claims by the Proponents

- Ex: improved test scores
- Ex: improvement over local standards
- Ex: increased accountability
- Ex: attention to minority populations
- Ex: quality of education
- Ex: school choice
- Ex: funding
- Ex: public perception of public education

• The Criticisms by the Opponents

- Ex: unrealistic goals
- Ex: the “gaming” of the system
- Ex: problems with standardized tests
- Ex: incentives against low-performing students
- Ex: neglect of gifted, talented, and high-performing students
- Ex: state refusal to produce non-English assessments
- Ex: NCLB and the impact on arts and elective education
- Ex: narrow definition of research
- Ex: limitations on local control
- Ex: facilitation of military recruitment
- Ex: increased segregation in public schools

Notes: The examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 2.4.1 of FPHEdu*. See book for citations.

• PART THREE •

Learning

CHAPTER 3

LEARNING AND ITS AMBIVALENCE

Watch me, learn from me, and learn
from my mistakes.
—Judy Garland

The Benefits of Learning

Learning is the receiving end of education, just as teaching is its giving end—so teaching and learning are two opposing sides of the same mirror (of education).

Any study of education, therefore, requires an inquiry about the nature of both teaching and learning.

This book offers a dialectic treatment of teaching and learning, in that, if teaching has its brightness, it has its darkness too—just as, if learning has its benefits, it likewise has its costs.

The inquiry concerning learning is the subject matter of this chapter (Chapter Three), whereas that of teaching was already addressed in Chapter Three.

As is true for teaching (in the previous chapter)—a good way to examine the ambivalence of learning is by way of the evaluation of the extent to which it (learning) is in fact both possible and desirable.

This chapter is thus responsible for providing a comprehensive analysis of learning in the context of education from the four perspectives of the mind, nature, society, and culture (in accordance to my sophisticated methodological holism, as explained in *Sec. 1.7*).

In other words, this chapter is organized in four main sections, in relation to (3.2) learning and the mind, (3.3) learning and nature, (3.4) learning and society, and (3.5) learning and culture—to be examined hereafter, in that order (and summarized in *Table 3.1*).

Learning and the Mind

Learning, when examined from the perspective of the mind, can illuminate in a fascinating way its possibility and desirability, and this can be shown by way of two case studies, namely, (3.2.1) giftedness, and the complicatedness of learning, and (3.2.2) learning styles, and the dissension about educating methods—to be addressed in what follows, in that order.

Giftedness, and the Complicatedness of Learning

The term “giftedness” is subject to different definitions. For instance, one good definition of “giftedness” is the “three ring” definition by Joseph Renzulli (1978). (WK 2010y)

Definition of Giftedness

In accordance to Renzulli’s definition, “giftedness” refers to “gifted behaviors rather than gifted individuals” and “is composed of three components,” that is, the “three basic clusters of human traits”: (WK 2010y)

- Ex: “above average ability”
- Ex: “high levels of task commitment”
- Ex: “high levels of creativity”

So, “[p]ersons who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs.” (WK 2010y)

However, there are two major confusions about the term “giftedness” to be avoided.

The first confusion to be avoided is that giftedness “is different from a skill, in that skills are learned or acquired behaviors. Like a talent,...giftedness is usually believed to be an innate, personal aptitude for...activities that cannot be acquired through personal effort.” (WK 2010y)

And the second confusion to be avoided is that giftedness can be multiple and need not be solely intellectual, because “[t]here is also artistic or creative giftedness, which may or may not be combined with intellectual giftedness.” (WK 2010y)

General Characteristics of Giftedness

With these two confusions in mind—gifted individuals possess some general characteristics, which can be identified for analysis.

Consider the following characteristics, for illustration, as summarized in *Table 3.2*.

Firstly, “gifted individuals learn more quickly, deeply, and broadly than their peers. Gifted children may learn to read early and operate at the same level as normal children who are significantly older. The gifted tend to demonstrate high reasoning ability, creativity, curiosity, a large vocabulary, and an excellent memory. They can often master concepts with few repetitions. They may also be physically and emotionally sensitive, perfectionistic, and may frequently question authority. Some have trouble relating to or communicating with their peers because of disparities in vocabulary size (especially in the early years), personality, interests and motivation. As children, they may prefer the company of older children or adults.” (WK 2010y)

Secondly, a person may be gifted in one area but may not be so in another: “Giftedness is frequently not evenly distributed throughout all intellectual spheres; an individual may excel in solving logic problems and yet be a poor speller; another gifted individual may be able to read and write at a far above average level and yet have trouble with mathematics. It is possible there are different types of giftedness with their own unique features, just as there are different types of developmental delay.” (WK 2010y)

And thirdly, “[m]any gifted individuals experience various types of heightened awareness and may seem overly sensitive. These sensitivities may be to physical senses such as sight, sound, smell, movement and touch. For example, they may be extremely uncomfortable when they have a wrinkle in their sock, or unable to concentrate because of the sound of a clock ticking on the other side of the room. Sensitivities of the gifted are often to mental and emotional over-awareness. For example, picking up on the feelings of someone close to them, having extreme sensitivity to their own internal emotions, and taking in external information at a significantly higher rate than those around them. These various kinds of sensitivities often mean that the more gifted an individual is, the more input and awareness they experience, leading to the paradox of them needing more time to process than others who are not gifted. This concept has been explained in the article, ‘Experience and Processing: The Funnel and Cylinder Analogy of Giftedness’” by Shulamit Widawsky (2003). (WK 2010y)

This hyper-sensibility “can resemble a proneness to 'sensory overload,' which can cause such persons to avoid highly stimulating, chaotic or crowded environments. This kind of highly sensitive nature has also been called 'overexcitability' by Kazimierz Dabrowski. Some are able to tune out such unwanted stimulation as they focus on their chosen task or on their own thoughts. In many cases, awareness may fluctuate between conditions of hyperstimulation and of withdrawal. These conditions may appear to be similar to symptoms of hyperactivity, bipolar disorder, ADHD, autism-spectrum conditions, and other psychological disorders.” (WK 2010y)

For C. Gross (2008), “an individual response to a stimulus is determined by his/her dominant overexcitability. Overexcitabilities are expressed in five dimensions: psychomotor, sensual, intellectual, imaginal, and emotional. These dominant channels of acquiring information differ by quantity in some individuals.” (WK 2010y)

Problems with Identification Methods

It is a good step to understand some general characteristics of giftedness, but to actually identify someone with giftedness is no easy task.

This challenge is important to meet, because “[m]any schools in North America and Europe have attempted to identify students who are not challenged by standard school curricula and offer additional or specialized education for them in pursuit of nurturing their talents.” (WK 2010y)

In the early days of research on giftedness in the 20th century, “gifted children were often classified via IQ tests....For many years, psychometricians and psychologists, following in the footsteps of Lewis Terman in 1916, equated giftedness with high IQ. This 'legacy' survives to the present day, in that giftedness and high IQ continue to be equated in some conceptions of giftedness.” (WK 2010y)

But there are a lot of problems with IQ tests. Consider a few problems below, for illustration, as summarized in *Table 3.2*.

Firstly, “IQ scores can vary for the same person, so a person does not always belong to the same IQ score range each time the person is tested.” (WK 2010y)

Secondly, “IQ test classifications vary from one publisher, “to another. IQ tests do not have validity for determining test-takers' rank order at higher IQ levels and are perhaps only effective at determining whether a student is gifted rather than distinguishing among levels of giftedness.” (WK 2010y; C. Perleth 2000)

Thirdly, “[t]he IQ assessment of younger children remains debated. Also, those who are more gifted in areas such as the arts and literature tend to do poorly on IQ tests, which are generally verbal- and mathematical-skills related.” (WK 2010y)

And fourthly, “other researchers (e.g., Cattell, Guilford, and Thurstone) have argued that intellect cannot be expressed in such a unitary manner, and have suggested more multifaceted approaches to intelligence.” (WK 2010y)

So, the very idea of “giftedness” is reexamined in the 1980s and 1990s, and a good example concerns the “conceptions of giftedness” by Sternberg and Davidson; now, “[m]ost of the investigators define giftedness in terms of multiple qualities, not all of which are intellectual. IQ scores are often viewed as inadequate measures of giftedness. Motivation, high self-concept, and creativity are key qualities in many of these broadened conceptions of giftedness.” (WK 2010y)

Nowadays, “[m]any schools use a variety of assessments of students' capability and potential when identifying gifted children. These may include portfolios of student work, classroom observations, achievement tests, and IQ test scores. Most educational professionals accept that no single criterion can be used in isolation to accurately identify a gifted child.” (WK 2010y; S. Johnsen 2004)

The Giftedness Gap among Different Ethnic/Racial Groups

An additional contention about giftedness is that there is a persistent achievement gap among different ethnic/racial groups.

For instance, in America, “[w]hile white students represent the majority of students enrolled in gifted programs, Black and Hispanic students constitute a percentage less than their enrollment in school. For example, statistics from 1993 indicate that in the U.S., Black students represented 16.2% of public school students, but only constituted 8.4% of students enrolled in gifted education programs. Similarly, while Hispanic students represented 9% of public school students, these students only represented 4.7% of those identified as gifted. However, Asian students make up only 3.6% of the student body, yet constitute 14% in the gifted programs.” (WK 2010y; L. Taylor 2003; D. Ford 2003)

Social and Emotional Problems of Gifted Individuals

For any system of education, the more difficult task concerns how to cope with the social and emotional problems of gifted individuals, so as to help them learn better.

Consider a few of these problems below, for illustration, as summarized in *Table 3.2*.

(a) Isolation

The first major social and emotional problem faced by gifted individuals has to do with “isolation.” (WK 2010y)

The problem of isolation is all the more serious for those “with no social network of gifted peers. In order to gain popularity, gifted children will often try to hide their abilities to win social approval. Strategies include underachievement...and the use of less sophisticated vocabulary when among same-age peers than when among family members or other trusted individuals.” (WK 2010y; M. Swiatek 1995)

In many cases, “isolation...may...be caused...by society's response to giftedness”; for instance, Plucker and Levy argued that “in this culture, there appears to be a great pressure for people to be 'normal' with a considerable stigma associated with giftedness or talent.” (WK 2010y; J. Plucker 2001)

So, “gifted education professionals recommend creating a peer group based on common interests and abilities. The earlier this occurs, the more effective it is likely to be in preventing isolation.” (WK 2010y; N. Robinson 2002)

(b) Perfectionism

The second major social and emotional problem faced by gifted individuals has to do with “perfectionism.” (WK 2010y)

The underlying problem here concerns “high standards, a desire to achieve, conscientiousness, or high levels of responsibility. It is likely to be a virtue rather than a problem, even if gifted children may have difficulty with healthy perfectionism because they set standards that would be appropriate to their mental age (the level at which they think), but they cannot always meet them because they are trapped in a younger body, or the social environment is restrictive. In such cases, outsiders may call some behavior perfectionism, while for the gifted this may be their standard.” (WK 2010y)

While “[p]erfectionism becomes desirable when it stimulates the healthy pursuit of excellence”—“unhealthy perfectionism stems from equating one's worth as a human being to one's achievements, and the simultaneous belief that any work less than perfect is unacceptable and will lead to criticism. Because perfection in the majority of human activities is neither desirable, nor possible, this cognitive distortion creates self doubt, performance anxiety and ultimately procrastination.” (WK 2010y; W. Parker 1996)

This problem of perfectionism can be further worsened “by parents, siblings, school comrades with good or ill intentions. Parents are usually proud and will praise extensively the gifted child, on the other hand siblings, comrades and school bullies will generally become jealous of the intellectual ease of the gifted child and tease him or her about any minor imperfection in his work, strength, clothes, appearance, or behavior. Either approach—positive reinforcement from parents, or negative reactions from siblings and comrades for minor flaws—will push these kids into considering their worth to their peers as equal to their abilities and consider any imperfection as a serious defect in themselves. The unhealthy perfectionism can be further exaggerated when the child counter-attacks those who mocked him with their own weapons, i.e. their lower abilities, thus creating disdain in himself for low or even average performance.” (WK 2010y)

(c) Underachievement

The third major social and emotional problem faced by gifted individuals has to do with “underachievement.” (WK 2010y)

For instance, “[m]any gifted students will perform extremely well on standardized or reasoning tests, only to fail a class exam. This disparity can result from various factors, such as loss of interest in too-easy classes or negative social consequences of being perceived as smart. Underachievement can also result from emotional or psychological factors, including depression, anxiety, perfectionism, or self-sabotage.” (WK 2010y; S. Reis 2002 &2004)

A major factor which contributes to underachievement has to do with “undiagnosed learning differences. A gifted individual is less likely to be diagnosed with a learning disorder than a non gifted classmate, as the gifted child can more readily compensate for his/her paucities. This masking effect is dealt with by understanding that a difference of 1 σ between scores constitutes a learning disability even if all of the scores are above average. In addition, many gifted children may underachieve because they have grown to believe that because of their intelligence, things should always come easily to them, and thus may lag behind their non-gifted peers in the work ethic required to learn things that don't come immediately to them.” (WK 2010y)

Therefore, “[o]ne apparently effective way to attempt to reverse underachievement in gifted children includes educating teachers to provide enrichment projects based on students’ strengths and interests without attracting negative attention from peers.” (WK 2010y)

(d) Depression

The fourth major social and emotional problem faced by gifted individuals has to do with “depression.” (WK 2010y)

However, scholars on giftedness disagree on the extent to which this correlation between giftedness and depression really exists.

For instance, on the negative side, for the critics, “this [correlation] has generally not been proven,” and S. Reis (2004) and J. Renzulli thus wrote: “With the exception of creatively gifted adolescents who are talented in writing or the visual arts, studies do not confirm that gifted individuals manifest significantly higher or lower rates or severity of depression than those for the general population.” (WK 2010y)

On the affirmative side, however, “a number of people have noted a higher incidence of existential depression, which is depression due to highly abstract concerns such as the finality of death, the ultimate unimportance of individual people, and the meaning (or lack thereof) of life. Gifted individuals are also more likely to feel existential anxiety.” (WK 2010y)

The Heated Debate

In any event, these social and emotional problems faced by gifted individuals raise the more contentious theoretical debate on nature vs. nurture.

(a) The Nature Argument

On one side of the debate is the nature argument, because its proponents argue that giftedness is genetic in origin.

For instance, “[i]t is generally agreed that giftedness may have a genetic component. Research on families has typically shown a correlation of about 0.45 in scores of g for parents, children, and siblings. Adoption and twin studies have also provided many valuable insights into the genetic component of intelligence. Studies of first degree relatives adopted apart show a correlation of 0.22, which is about half that of relatives who live together. Adopted children who are not related but reared together show a correlation of about 0.23 to genetically unrelated parents and siblings.” (WK 2010y)

Also, “[h]eritability from adoption data is 44% for families, 52% for fraternal twins in a shared environment, and 72% for identical twins reared apart....The question of whether intelligence has a genetic component has been confirmed through numerous studies. More research is necessary to determine the exact processes by which genetic dispositions interact with the environment.” (WK 2010y)

(b) The Nurture Argument

On the other side of the debate is the nurture argument, because its proponents argue that giftedness is also environmental in origin.

For instance, “Tannenbaum claims that the environment plays a major role in the nurturance of giftedness or higher intelligence. Giftedness and talent require a special environment just as special education would. The environment must be enriching and encouraging which will allow the child to mature through experience and exploration. The environment must facilitate creative activity in a developmentally appropriate manner which would call for classrooms to be designed for developmental levels as opposed to age or grade levelling.” (WK 2010y; N. Sankar-DeLeeuw 1999)

More specifically, “[t]his type of environment with differentiated learning could result from acceleration, lateral enrichment, and special grouping. Also, a developmentally appropriate environment for the gifted child will reduce behavior problems among preschoolers due to an increased engagement and internal motivation for learning.” (WK 2010y)

Other studies also showed that “gifted children will become high achievers when their interests are piqued by doing what they are innately motivated to do, empowering them to continue trying new skills. Furthermore, when gifted or talented children are supported by educational staff, their community, peers and families, they have higher possibilities to develop their cognitive abilities.” (WK 2010y; N. Sankar-DeLeeuw 1999)

Beyond Nature and Nurture

This introduction to the nature vs. nurture debate in regard to giftedness in education is not to favor one argument over the other.

On the contrary, in my book *Beyond Nature and Nurture* (2006), I already went to great lengths to show that the debate is faulty, as both nature and nurture are important for the understanding of why some are more successful than others in life.

In addition, I also argued in *BNN* (8) that, “[i]n the end, the human genes will not last, to be eventually superseded by post-human life forms, so the debate between genes and memes has obscured something profoundly important about the future that the world has never known. In the process, the debate is also misleading and faulty, on the basis of two forms of what I called in *FCD* as 'reductionism.'”

In any event, this introduction to the nature vs. nurture debate can help us learn from the two opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of the mind

with giftedness and the complicatedness of learning as a case study here) are not to the extent that the respective defenders would like us to believe.

More importantly, the introduction to the nature vs. nurture debate can teach us something valuable about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of soundness for a system of ideas, as in identification methods in regard to IQ), there is informalness (e.g., the nonformal nature of identification methods in regard to IQ, as the critics have raised “serious questions regarding the appropriate uses and limits of such testing”). (WK 2010y) And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view in the early days of research on giftedness in the 20th century, when “psychometricians and psychologists, following in the footsteps of Lewis Terman in 1916, equated giftedness with high IQ”), there is relativeness (e.g., what was true for Terman in 1916 about giftedness and high IQ is not necessarily so for researchers in 2000’s, when “IQ scores are often viewed as inadequate measures of giftedness”). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of IQ tests to determine whether or not someone is gifted or not), there is unpredictability (e.g., the more difficult task to predict exactly a person “among levels of giftedness”). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by Terman that giftedness is linked with high IQ), there is inexplicability (e.g., the lack of sufficient explanation by Terman of why giftedness is necessarily related to high IQ, since, for the critics, “[t]here is also artistic or creative giftedness, which may or may not be combined with intellectual giftedness”). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification, by Renzulli, of the “three basic clusters of human traits” for giftedness), there is vagueness (e.g., the vagueness in Renzulli’s identification, since it is not clear what specific areas a gifted person can excel in, as shown by Susan K. Johnsen, who further “explains that gifted children can have “high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields”). (WK 2010y; S. Johnsen, 2004) And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple view by Terman that giftedness is related to high IQ), there is complicatedness (e.g., the relatively more complicated analysis of giftedness in our time, when “other researchers [like Cattell, Guilford, and Thurstone]...have argued that intellect cannot be expressed in such a unitary manner, and have suggested more multifaceted approaches to intelligence”). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of using IQ tests to identify giftedness), there is hiddenness (e.g., the bias in IQ tests, since “IQ scores can vary for the same person, so a person does not always belong to the same IQ score range each time the person is tested” and “IQ test classifications vary from one publisher to another,” etc.). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of gifted students among Asian students, as “statistics from 1993 indicate that in the U.S.,...Asian students make up only 3.6% of the student body, yet constitute 14% in the gifted programs”), there is emptiness (e.g., the relatively less dense, or more empty, concentration of gifted students among Black students, as “statistics from 1993 indicate that in the U.S., Black students represented 16.2% of public school students, but only constituted 8.4% of students enrolled in gifted education programs”). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of an average, or a below-average, person to learn), there is quickness (e.g., the relatively faster speed of a gifted person to learn). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of a gifted person to excel, for example, “in solving logic problems and yet be a poor speller,” because “[g]iftedness is frequently not evenly distributed throughout all intellectual

spheres”), there is contraction (e.g., the relatively less developed ability of the gifted person as cited above, to excel, for example, in spelling, than “in solving logic problems,” because “[g]iftedness is frequently not evenly distributed throughout all intellectual spheres”). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of “multiple intelligences”), there is praxis (e.g., the practical application of “multiple intelligences” to the field of educational counseling, in that “[m]ost educational professionals accept that no single criterion can be used in isolation to accurately identify a gifted child”). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about gifted students who suffer from depression), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about giftedness and depression, by other scholars like S. Reis and J. Renzulli who argued that “studies do not confirm that gifted individuals manifest significantly higher or lower rates or severity of depression than those for the general population”). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans in the state of nature to be bestowed with different abilities, which vary from individual to individual), there is transformation (e.g., the technical transformation of human abilities by the invention of different environmental programs specifically to nurture giftedness, like “learning...from acceleration, lateral enrichment, and special grouping,” etc.). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the existence of different individuals in society), there is asymmetry (e.g., some individuals can think more quickly, deeply, and broadly than others). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., “parents are usually proud and will praise extensively the gifted child”), there is hardness (e.g., “siblings, comrades and school bullies will generally become jealous of the intellectual ease of the gifted child and tease him or her about any minor imperfection in his work, strength, clothes, appearance, or behavior”). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by gifted children when “[u]nderachievement can...result from emotional or psychological factors,

including depression, anxiety, perfectionism, or self-sabotage”), there is progression (e.g., the progression made by gifted children when they “perform extremely well on standardized or reasoning tests,” and so on). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of encouraging gifted children to perform well or by way of discouraging them from outperforming their siblings, comrades and school bullies), there is difference in outcome (e.g., the contribution to the molding and control of beliefs and behaviors by way of encouraging gifted children to perform well for a meritocratic community—but the contribution to the molding and control of beliefs and behaviors by way of discouraging gifted children from outperforming their siblings, comrades and school bullies for a more egalitarian community). And the reverse direction also holds true.

Learning Styles, and the Dissension about Educating Methods

Another way to evaluate the possibility and desirability of learning from the perspective of the mind is to explore learning styles and the dissension about educating methods.

The term “learning styles” refers to “various approaches or ways of learning. They involve educating methods, particular to an individual, that are presumed to allow that individual to learn best.” (WK 2010z)

The idea of “learning styles” is attractive, because “[m]ost people prefer an identifiable method of interacting with, taking in, and processing stimuli or information. Based on this concept, the idea of individualized 'learning styles' originated in the 1970s, and acquired 'enormous popularity.'” (WK 2010z; H. Pashler 2009)

For the proponents of learning styles, “teachers should assess the learning styles of their students and adapt their classroom methods to best fit each student's learning style, which is called the 'meshing hypothesis.’” (WK 2010z; R. Dunn 1978; M. Sprenger 2003)

Models of Learning Styles

There are, however, many different models of learning styles. Consider a few below, for illustration, as summarized in *Table 3.3*.

(a) David Kolb's Model

The first model of learning styles to be illustrated here concerns David Kolb's model, which “is based on the Experiential Learning Theory, as

explained in his book *Experiential Learning: Experience as the Source of Learning and Development* (1984).” (WK 2010z)

Kolb proposed “two related toward grasping experience: Concrete Experience and Abstract Conceptualization, as well as two related approaches toward transforming experience: Reflective Observation and Active Experimentation.” (WK 2010z)

For Kolb, “the ideal learning process engages all four of these modes in response to situational demands. In order for learning to be effective, all four of these approaches must be incorporated. As individuals attempt to use all four approaches, however, they tend to develop strengths in one experience-grasping approach and one experience-transforming approach. The resulting learning styles are combinations of the individual’s preferred approaches.” (WK 2010z)

The four learning styles, therefore, are shown below: (WK 2010z; M. Smith 2001)

- “Convergers”—“are characterized by abstract conceptualization and active experimentation. They are good at making practical applications of ideas and using deductive reasoning to solve problems.”
- “Divergers”—“tend toward concrete experience and reflective observation. They are imaginative and are good at coming up with ideas and seeing things from different perspectives.”
- “Assimilators”—“are characterized by abstract conceptualization and reflective observation. They are capable of creating theoretical models by means of inductive reasoning.”
- “Accommodators”—“use concrete experience and active experimentation. They are good at actively engaging with the world and actually doing things instead of merely reading about and studying them.”

So, “[a]n individual may exhibit a preference for one of the four styles—Accommodating, Converging, Diverging and Assimilating—depending on his approach to learning via the experiential learning theory model.” (WK 2010z; D. Kolb 1984)

(b) Honey and Mumford's Model

The second model of learning styles to be illustrated here concerns Honey and Mumford’s model proposed by Peter Honey and Alan Mumford in the mid 1970’s, which “adapted David Kolb’s model for use with a population of middle/senior managers in business. They published

their version of the model in *The Manual of Learning Styles* (1982) and *Using Your Learning Styles* (1983).” (WK 2010z)

More specifically, Honey and Mumford made two adaptations to Kolb’s experiential model.

The first adaptation is that “the stages in the cycle were renamed to accord with managerial experiences of decision making/problem solving. The Honey & Mumford stages are” shown below: (WK 2010z)

- “Having an experience”
- “Reviewing the experience”
- “Concluding from the experience”
- “Planning the next steps”

And the second adaptation is that “the styles were directly aligned to the stages in the cycle and named Activist, Reflector, Theorist and Pragmatist. These are assumed to be acquired preferences that are adaptable, either at will or through changed circumstances, rather than being fixed personality characteristics.” (WK 2010z)

In 1999, “a MORI survey commissioned by [The Campaign for Learning]...found the Honey & Mumford LSQ to be the most widely used system for assessing preferred learning styles in the local government sector in the UK.” (WK 2010z)

(c) Anthony Gregorc’s Model

The third model of learning styles to be illustrated here concerns Anthony Gregorc’s model, as discussed by Dennis W. Mills in his article entitled “Applying What We Know: Student Learning Styles.” (WK 2010z)

Anthony F. Gregorc and Kathleen A. Butler “worked to organize a model describing how the mind works. This model is based on the existence of perceptions—our evaluation of the world by means of an approach that makes sense to us. These perceptions in turn are the foundation of our specific learning strengths, or learning styles.” (WK 2010z; D. Mills 2002)

The model is divided into “two perceptual qualities,” namely, “(1) concrete and (2) abstract”—and “two ordering abilities,” namely, “(1) random and 2) sequential.” (WK 2010z; D. Mills 2002)

In regard to the two perceptual qualities, “[c]oncrete perceptions involve registering information through the five senses, while abstract perceptions involve the understanding of ideas, qualities, and concepts which cannot be seen.” (WK 2010z)

And in regard to the two ordering abilities, “sequential involves the organization of information in a linear, logical way and random involves the organization of information in chunks and in no specific order.” (WK 2010z; D. Mills 2002)

For Gregorc and Butler, “[b]oth of the perceptual qualities and both of the ordering abilities are present in each individual, but some qualities and ordering abilities are more dominant within certain individuals.” (WK 2010z)

So, this then means that “[t]here are four combinations of perceptual qualities and ordering abilities based on dominance: (1) Concrete Sequential; (2) Abstract Random; (3) Abstract Sequential; (4) Concrete Random. Individuals with different combinations learn in a different ways—they have different strengths, different things make sense to them, different things are difficult for them, and they ask different questions throughout the learning process.” (WK 2010z; D. Mills 2002)

(d) Sudbury Model of Democratic Education

The fourth model of learning styles to be illustrated here concerns the Sudbury model of democratic education.

In accordance to the Sudbury Model, “there are many ways to study and learn. They argue that learning is a process you do, not a process that is done to you. That is true of everyone; it's basic. The experience of Sudbury model democratic schools shows that there are many ways to learn without the intervention of teaching, to say, without the intervention of a teacher being imperative.” (WK 2010z)

For instance, “[i]n the case of reading,...some children learn from being read to, memorizing the stories and then ultimately reading them. Others learn from cereal boxes, others from games instructions, others from street signs. Some teach themselves letter sounds, others syllables, others whole words. Sudbury model democratic schools adduce that in their schools no one child has ever been forced, pushed, urged, cajoled, or bribed into learning how to read or write; and they have had no dyslexia. None of their graduates are real or functional illiterates, and no one who meets their older students could ever guess the age at which they first learned to read or write. In a similar form students learn all the subjects, techniques, and skills in these schools.” (WK 2010z; D. Greenberg 1987)

(e) Fleming's VAK/VARK Model

And the fifth model of learning styles to be illustrated here concerns the Fleming's VAK/VARK model, which proposes four different learning styles, as shown below: (WK 2010z; W. Leite 2009; T. Hawk 2007)

- “visual learners”
- “auditory learners”
- “reading/writing-preference learners”
- “kinesthetic learners or tactile learners”

Fleming then argued that “visual learners have a preference for seeing (think in pictures; visual aids such as overhead slides, diagrams, handouts, etc.). Auditory learners best learn through listening (lectures, discussions, tapes, etc.). Tactile/kinesthetic learners prefer to learn via experience—moving, touching, and doing (active exploration of the world; science projects; experiments, etc.).” (WK 2010z)

So, one logical conclusion is that the use of Fleming's VAK/VARK model “allows teachers to prepare classes that address each of these areas. Students can also use the model to identify their preferred learning style and maximize their educational experience by focusing on what benefits them the most.” (WK 2010z)

Criticisms of Learning Styles

Unfortunately, these models of learning styles have drawn a lot of criticisms over the years. Consider a few of them below, for illustration, as summarized in *Table 3.3*.

Firstly, one criticism of the models of learning styles is that “[s]ome psychologists and neuroscientists have questioned the scientific basis for and the theories on which they are based. According to Susan Greenfield the practice is ‘nonsense’ from a neuroscientific point of view,” since she wrote: “Humans have evolved to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain.” (WK 2010z; J. Henry 2007)

Secondly, another criticism of the models of learning styles is that, for “[m]any educational psychologists...there is little evidence for the efficacy of most learning style models, and furthermore,...the models often rest on dubious theoretical grounds. According to Stahl, there has been an ‘utter failure to find that assessing children's learning styles and matching to instructional methods has any effect on their learning.’” (WK 2010z; L. Curry 1990; S. Stahl 2002) Others like Guy Claxton “has questioned the extent that learning styles such as VARK are helpful, particularly as they can have a tendency to label children and therefore restrict learning.” (WK 2010z)

And thirdly, still another criticism of the models of learning styles is that they often exaggerate their claims and are narrow in their viewpoints. For instance, “Mark K. Smith [2001] compiled and reviewed some

critiques of Kolb's model in his article, 'David A. Kolb on Experiential Learning'. According to Smith's research, there are six key issues regarding the model. They are as follows: (1) the model doesn't adequately address the process of reflection; (2) the claims it makes about the four learning styles are extravagant; (3) it doesn't sufficiently address the fact of different cultural conditions and experiences; (4) the idea of stages/steps doesn't necessarily match reality; (5) it has only weak empirical evidence; and (6) the relationship between learning processes and knowledge is more complex than Kolb draws it." (WK 2010z)

A Bigger Picture

In any event, these criticisms of the models of learning styles do not mean to dismiss them completely but help us learn from the two opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of the mind with learning styles and the dissension about educating methods as a case study here) are not to the extent that the respective defenders would like us to believe.

More importantly, this introduction to learning styles and the dissension about educating methods can teach us something valuable about the ontological principles in existential dialectics, and good examples include the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of the Sudbury model, in that there are many ways to learn "without the intervention of teaching, to say, without the intervention of a teacher being imperative"), there is relativeness (e.g., what is true for the Sudbury model in regard to learning without the intervention of a teacher is not necessarily so for the critics, who question its claims and assumptions). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of the proponents of VAK/VARK model that it is effective for learning), there is unpredictability (e.g., the more difficult task to predict exactly to what

extent a particular instance of using the VAK/VARK model is effective, because the critic, Guy Claxton, “has questioned the extent that learning styles such as VARK are helpful, particularly as they can have a tendency to label children and therefore restrict learning”). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation, by the proponents of the models of learning styles, that they work better for learning on the basis of tailoring to the abilities of individual learners), there is inexplicability (e.g., the lack of sufficient explanation, by the proponents of the models of learning styles, of the scientific basis for the theories on which they are based,” according to the critics). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of “two perceptual qualities” and “two ordering abilities” in Anthony Gregorc's model), there is vagueness (e.g., the vagueness in the identification of the two perceptual qualities and abilities in Anthony Gregorc's model, since it is not clear of why the qualities and abilities are necessarily two, not three, four, etc.). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simplistic claims by the proponents of the models of learning styles about their validity and effectiveness), there is complicatedness (e.g., the relatively more complicated analysis of the models of learning styles by the critics, who question their validity and effectiveness, like the critique of Kolb's model, in that “the relationship between learning processes and knowledge is more complex than Kolb draws it”). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of learning without the intervention of a teacher), there is hiddenness (e.g., the hidden bias in the models of learning styles, because “there is little evidence for the efficacy of most learning style models”). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of students who try to learn without the intervention of a teacher in the Sudbury model), there is emptiness (e.g., the relatively less dense, or more empty, concentration of students who try to learn without the intervention of a teacher in the Socratic method). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of “convergers” to learn by “concrete experience and reflective observation”), there is quickness (e.g., the

relatively faster speed of “divergers” to learn by “concrete experience and reflective observation”). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of students in the Sudbury model to learn without the intervention of a teacher), there is contraction (e.g., the relatively less developed ability of students in the Sudbury model to learn with the intervention of a teacher). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of “learning styles”), there is praxis (e.g., the practical application of “learning styles” like “Honey & Mumford LSQ to...the local government sector in the UK”). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about students learning from their teacher), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about students learning from their teacher, by the Sudbury model that students can learn without the intervention of a teacher). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to learn in the state of nature, in a primitive way), there is transformation (e.g., the technical transformation of human learning by way of the invention of the models of “learning styles”). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the existence of different learning methods, be they about learning with the intervention of a teacher or without it), there is asymmetry (e.g., the popularity of learning without the intervention of teaching in the Sudbury model—but the popularity of learning with the intervention of a teacher in the Socratic method). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the encouragement, in VARK learning styles, of children to pick and choose the four areas of learning), there is hardness (e.g., the “tendency to label children and therefore restrict learning” in VARK learning styles, as pointed out by Guy Claxton). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by the models of learning styles, as shown in the problems pointed out by the critics), there is progression (e.g., the progress made by the models of learning styles for learners to learn better). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of the Sudbury model of student-centered learning or by way of an alternative teacher-centered learning style), there is difference in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors by way of the Sudbury model of student-centered learning for a relatively more libertarian way of life—but the contribution to the molding and control of beliefs, values, and behaviors by way of an alternative teacher-centered learning style for a relatively more disciplinary way of life). And the reverse direction also holds true.

Learning and Nature

Learning, when examined from the perspective of nature, can cast an interesting light on its possibility and desirability, and this can be done by way of a case study on wilderness, practice, and the question about learning.

Wilderness, Practice, and the Question about Learning

The word “wilderness” here, in the context of learning from nature, refers to “the world of wild nature,” which “has been highly revered by sages, yogis, and poets as a place supporting radical self transformation. They sing its praise as a space 'off the path' where the depths of reality can be encountered in a many layered richness.” (EDC 2010)

Nowadays, “it has become apparent that connection with wild nature is an important aid to developing an ecological sensibility and sense of connection with the web of life. This can support action towards a sustainable future for all.” (EDC 2010)

Nature-Based Practice and Learning

This call for “the transformative and integrative power of immersion in non-human nature” has enriching consequences for life, because, for its proponents, “the value of immersion and practice in nature is obvious. How many times have we been returned to a fuller sense of ourselves by taking a short walk in the woods? How often do we return replenished by new perspectives after a while gazing across the ocean? Of course it goes further than that. Many of us also know how land and sky can bring us to a deep sense of awe and wonder at the nature of things. And sometimes

these experiences demand that we radically re-orientate our sense of who and what we are.” (EDC 2010)

This immersion in non-human nature can be achieved by way of “Nature-Based Practice and Learning,” which “involves supporting participants to spend time out in the wilds connecting with the teachings nature offers. We use tools such as mindfulness practice and mediation in conjunction with elements of bushcraft, nature based education, as well as ecological and evolutionary learning. Most importantly we encourage silent solitary time in intimate relationship with wild nature. We do this in a way that recognises the differing degrees of support that people require to make this kind of experience useful.” (EDC 2010)

In this way, “Nature Based Practice and Learning can help us step out of the human-centred world for a while—to wander deep into tangled woodland, to lie on mossy rocks, to sit in limestone caves, to traverse lofty ridges, and to loll on the edge of trickling streams.” (EDC 2010)

This “increasing appreciation of the importance of direct immersion in the natural world for learners of ecological and sustainability themes has led to a renewal of environmental educational practice. Simply spending time in wild natural environments can, when introduced and supported in a sensitive way, lead to a deepening awareness of the richness and diversity of life outside ourselves. Nature is a teacher. Learning to listen to its teachings can lead naturally to a greatly increased ecological sensibility. Such sensibility is an important factor supporting people to become more grounded in themselves and more able to act in service of the sustainable transformations that our society is so in need of.” (EDC 2010)

Important early figures in this movement are “Henry David Thoreau, John Muir, and Aldo Leopold. These early 'deep ecologists' have all pointed to the importance of connection with the wild and non-human world in the healing of alienation and the discovery of ecological consciousness....Ecopsychology practitioners and writers, such as Theodore Roszak, Paul Shepard, and James Hillman, point out that healing this alienation in ourselves is important not only for the individual, but is also a key to transforming the damaging tendencies of our increasingly unsustainable societies. They acknowledge that psychological well-being is not a merely internal matter, but is reflected in the health of the ecological and social networks we inhabit. Self-transformation and social transformation are seen as mutually supportive.” (EDC 2010)

What lies at the core of the movement is its critique of “anthropocentrism” or “the human centeredness of the world. In their analysis, of what they call the Dominant Western World View,

sociologists William Catton and Riley Dunlap point to the cornerstone assumption that: 'People are fundamentally different from all other creatures on Earth, over which they have dominion (defined as domination).'" (EDC 2010)

For the proponents, "[t]he arrogance of this view cuts us off from our animal, biological and even evolutionary roots. And it feeds into the modern western tendency to split off mind and body—prioritising mind and our 'higher functions' at the expense of embodiment. It can lead us to value rationality at the expense of other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition. This kind of approach can inform repressive and disembodied pseudo-spiritual practices." (EDC 2010)

With this spiritual goal in mind, "deep ecological and ecopsychological learning" so understood has three main aspects to remember, in that it is to, for examples: (EDC 2010)

- "Reclaim a healthy and integrated sense of self—rooted in the ecological, biological, sensory, and emotional, as well as rational dimensions of self."
- "Deconstruct the human conceit that we are somehow separate and above nature in ways that perpetuate alienation; confront our tendencies to assert our selves over and against nature in a way that cuts us off from the sources of nourishment and inspiration that can flow into us from the web of life."
- "Open us up to deeper layers of inter-connectedness, which can liberate us from a restrictive sense of self—freeing our energies in compassionate service to life. Letting go of a conceited and narrow human identity can renew a deeply connected sense of self, rooted in the ecological and evolutionary, enabling us to grow into what some Deep Ecologists have called "ecological consciousness."

Surely, there can be other aspects too, but these three are among the most often cited.

The Buddhist Influence

This call for "the transformative and integrative power of immersion in non-human nature" for a holistic way of learning is deeply influenced by Buddhism.

After all, "the Buddha himself left the confines of the palace to live and practice at the root of trees. Those who followed him in 'going forth' lived as small bands or hermits in forests and woodland. And the motif of

the forest renunciate, or of practitioners retreating into the wilds, recurs again and again—the Thudong forest dwellers of Thailand, the wild yogis and Mahasiddhis of Buddhist tantra, the mountain hermits and poets of Zen.” (EDC 2010)

It is thus not surprising that, “[t]hroughout Buddhist history we often come across the stories of dedicated practitioners finding themselves somehow called to wander out of the institutions and monasteries into pathless wilderness and mountain caves. There they found spaces of deepening understanding which in turn re-vitalised the tradition. Even the monastery can become a place of confinement and dusty dogma that requires renewal from other sources.” (EDC 2010)

In the Tang dynasty, for instance, poet Han-shan once wrote a beautiful poem on nature, as shown below: (EDC 2010)

I settled at Cold Mountain long ago,
 Already it seems like years and years.
 Freely drifting, I prowl the woods and streams
 And linger watching things themselves.
 Men don't get this far into the mountains,
 White clouds gather and billow.
 Thin grass for a mattress,
 The blue sky makes a good quilt.
 Happy with a stone under head
 Let heaven and earth go about their changes.

Thus is the seductive power of non-human nature—for the proponents of nature-based practice for a more holistic way of learning.

The Practice at the EcoDharma Center

This understanding of “the transformative and integrative power of immersion in non-human nature” for a holistic way of learning is by no means an empty academic exercise, since it has been applied in different centers for spiritual healing, and a good example is the EcoDharma Center.

At the Ecodharma Centre, as the practitioners put it, “we know ourselves the transformative and integrative power of immersion in non-human nature. We want to support others to re-connect with that source of nourishment, well-being, and inspiration.” (EDC 2010)

This then requires practice, practice, and practice for immersion with non-human nature: “Through practice in nature we also meet deeper and even ‘transpersonal’ aspects of ourselves, which can be drawn into what

can be called the process of 'vertical' integration. We can find spaces which enable us to step into the imaginal realms testified to by so many vision quest traditions, allowing sources of inspiration and vision to touch us. The wild is an especially supportive environment for this whole range of encounters, which with the right support can be assimilated and integrated to enrich and expand the sense of who we are." (EDC 2010)

In fact, when put in the context of "the Three Aspects of Deep Ecological Practice we referred to before, we can see some clear parallels between these and stages of the path of dharma: (1) Integration and positive emotion, (2) Insight in terms of Spiritual Death, and (3) Insight in terms of Spiritual Rebirth." (EDC 2010)

In the end, "[a]pplying these core dharma methods, within a context of nature based practice, we might be able to follow the advice of Ajhan Chan, from the Thai Forest Sangha: "Like a Buddha, we too should look around us and be observant, because everything in the world is ready to teach us. With even a little intuitive wisdom we will be able to see clearly through the ways of the world. We will come to understand that everything in the world is a teacher. Trees and vines, for example, can all reveal the true nature of reality. With wisdom there is no need to question anyone, no need to study. We can learn from Nature enough to be enlightened, because everything follows the way of Truth. It does not diverge from Truth." (EDC 2010)

A Caution from the Critics

Although all this talk of immersion with non-human nature for a more holistic way of learning certainly sounds wonderful, the critics beg to differ and warn us about its unspoken dark sides too. Just consider a few of them below, for illustration.

Firstly, one major criticism of the discourse on nature-based practice and learning is that it is too nostalgic in its vision to return to a past which might not even have existed in the first place.

I already went to great lengths in my 2-volume work titled *The Future of Human Civilization* (2000: ch.2) to explain this problematic "nostalgic arcadianism" for those "who are as much disillusioned of the technological problematics as nostalgic of a merried pre-industrial past. The only solution, so they think, must therefore be a return to nature, to a pre-industrialist life, comparable to the dream of the Luddites, an Emerson, or a Thoreau...But the question to them is how could this return, be even remotely possible? Arnold Toynbee rightly disapprovingly called 'archaism' as 'an attempt to take a flying leap out of the mundane Present backwards into an already vanished Past.' (R.Seidenberg

1951:210) After all, this 'merried' pre-industrial past never existed, and the danger here is to nostalgically romanticize the 'good' old days which never were—amidst a discontent with the status quo.”

Secondly, another major criticism of the discourse on nature-based practice and learning is that it is too misleading in its vision of a sustainable future.

I already went to great lengths in my work titled *The Future of Post-Human Urban Planning* (2009: 19) to explain this problematic discourse on sustainability, in that “the concern with sustainability has been much exaggerated and distorted, to the point that it is fast becoming a new intellectual fad, so that its dark sides have been unwarrantedly ignored or downgraded.”

Thirdly, still another major criticism of the discourse on nature-based practice and learning is that it is too life-negating in its vision of solitary ascetism.

Friedrich Nietzsche, for instance, is well-known for his devastating critique of the life-negating consequences of different forms of ascetism, be they Christian, Buddhist, or else in origin—especially in his works titled *On the Genealogy of Morals*, *The Will to Power*, and *Beyond Good and Evil*.

And fourthly, one more major criticism of the discourse on nature-based practice and learning is that its appeal to emotionality, sensuality, imagination, and intuition is not as wonderful as its proponents would like us to believe.

In my previous books titled *The Future of Post-Human Creative Thinking* (2009), *The Future of Aesthetic Experience* (2007), *The Future of Post-Human Consciousness* (2004), *The Future of Post-Human Unconsciousness* (2008), *Beyond Capitalism to Post-Capitalism* (2005), *The Future of Capitalism and Democracy* (2002), and *The Future of Post-Human Religion* (2010)—I already went to great lengths in different places to show that emotionality, sensuality, imagination, and intuition have their own limits, just as they have their own promises.

Maneuvering between the Two Sides

In any event, these criticisms of nature-based practice for a more holistic learning do not mean to reject it outright but show us the two opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of the nature with nature-based practice and the question about learning as a case study here) are not to the extent that the respective defenders would like us to believe.

In addition, this introduction to nature-based practice and the question about learning can teach us something insightful about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the partiality-totality principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the finiteness-transfiniteness principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of completedness and soundness for a system of ideas, as in “anthropocentrism”), there is informalness (e.g., the nonformal nature of “anthropocentrism,” as the critics have revealed its unwarranted exclusion of “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition”). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of the value rationality of “anthropocentrism” by its proponents), there is relativeness (e.g., what is good for the proponents of “anthropocentrism” is not necessarily so for those at the EcoDharma Center for a more holistic spiritual practice). And the reverse direction also holds true.

In relation to the partiality-totality principle, if there is partiality (e.g., the partial view of the proponents of “anthropocentrism” for a narrow understanding of value rationality detached from nature), there is totality (e.g., the more holistic view of integrating “our animal, biological and even evolutionary roots” with the rest of nature, such that the whole is not just the sum of all narrow anthropocentric perspectives about reality). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of the practitioners at the EcoDharma Center to be highly appreciative of Deep Ecology), there is unpredictability (e.g., the more difficult task to predict exactly the extent to which a life of immersion with non-human nature will be life-affirming, as Nietzsche already made a devastating critique of its life-denying consequences). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation, by the proponents of Nature-Based Practice and Learning, of the desirability of immersion with non-human nature on the basis of its integration with “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition”), there is inexplicability (e.g., the lack of sufficient explanation, for the critics, of why these “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition” are necessarily possible and desirable). And the reverse direction also holds true.

In relation to the finiteness-transfiniteness principle, if there is finiteness (e.g., the finite number of places that an individual can possibly visit for wilderness in his lifetime), there is transfiniteness (e.g., the transfinite number of things in nature, so that “[m]any of us...know how land and sky can bring us to a deep sense of awe and wonder at the nature of things”). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition”), there is vagueness (e.g., the vagueness in the identification of “emotionality, sensuality and intuition,” since those aspects can mean different things to different individuals). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of Nature-Based Practice and Learning by its practitioners), there is complicatedness (e.g., the relatively more complicated analysis of Nature-Based Practice and Learning by the critics who question the inherent assumptions and claims). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of the popular value rationality of “anthropocentrism” in modern times), there is hiddenness (e.g., the hidden bias in the popular value rationality of “anthropocentrism” because of its exclusion of “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition”). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of individuals who accept a more ascetic lifestyle at the EcoDharma Center), there is emptiness (e.g., the relatively less dense, or more empty, concentration of the followers of

Nietzsche's life-affirming philosophy who accept a more ascetic lifestyle). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of an individual who learns by reasoning, not intuition), there is quickness (e.g., the relatively faster speed of an individual who learns by intuition, not reasoning). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of those who accept "anthropocentrism" to live by value rationality), there is contraction (e.g., the relatively less developed ability of those who accept "anthropocentrism" to live by "other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition"). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of nature-based practice and learning), there is praxis (e.g., the practical application of nature-based practice and learning for a more spiritual life at the EcoDharma Center). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about "anthropocentrism" in the modern West), there is novelty (e.g., the alternaive novel challenge to the conventional wisdom about "anthropocentrism," by those at the EcoDharma Center for a more spiritual life with "other more experientially embodied aspects of human nature"). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to live side-by-side with nature in the state of nature), there is transformation (e.g., the technical transformation of human life by the invention of the ideology of "anthropocentrism"). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the existence of different rationalities in human history), there is asymmetry (e.g., the popularity of "anthropocentrism" as "the Dominant Western World View" in modern times—but the popularity of "Nature-Based Practice and Learning" at the EcoDharma Center). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the relative inclusion of "anthropocentrism" in the modern West), there is hardness (e.g., the relative exclusion of "other more experientially

embodied aspects of human nature” in the modern West). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by “Nature-Based Practice and Learning,” as shown in the problems pointed out by the critics), there is progression (e.g., the progress made by “Nature-Based Practice and Learning,” as shown in the spiritual life at the EcoDharma Center). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of values and behaviors, regardless of whether this be done by way of “anthropocentrism” or by way of “Nature-Based Practice and Learning”), there is difference in outcome (e.g., the contribution to the molding and control of values and behaviors by way of “anthropocentrism” for a more materialistic way of life—but the contribution to the molding and control of values and behaviors by way of “Nature-Based Practice and Learning” for a more spiritual way of life). And the reverse direction also holds true.

Learning and Society

Learning, when examined from the perspective of society, can reveal some enticing features on its possibility and desirability, and this can be shown by way of two case studies, namely, (3.4.1) learning, and the role of educational technologies, and (3.4.2) learning aspirations, and the sociology of education—to be addressed hereafter, respectively.

Learning, and the Role of Educational Technologies

The term “educational technologies” (also known as “learning technology”) refers to “the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.” (WK 2010aa; R. Richey 2008)

Two Clarifications of the Term “Educational Technologies”

Because of its relation to learning, the term “educational technology” is “often associated with, and encompasses, instructional theory and learning theory. While instructional technology covers the processes and systems of learning and instruction, educational technology includes other systems used in the process of developing human capability. Educational

Technology includes, but is not limited to, software, hardware, as well as Internet applications and activities. But there is still debate on what these terms mean,” (WK 2010aa; P, Lowenthal 2010)

And because of its relation to technology, the term “educational technology” is often based “on a broad definition of the word 'technology.' Technology can refer to material objects of use to humanity, such as machines or hardware, but it can also encompass broader themes, including systems, methods of organization, and techniques. Some modern tools include but are not limited to overhead projectors, laptop computers, and calculators. Newer tools such as 'smartphones' and games (both online and offline) are beginning to draw serious attention for their learning potential.” (WK 2010aa)

Theories of Educational Technologies

With these clarifications of the term “educational technologies” in mind—there exist different theoretical frameworks in the educational technology literature. Consider a few of them below, for illustration, as summarized in *Table 3.4*.

(a) Behaviorism

The first theoretical framework for the understanding of educational technologies to be considered here concerns “behaviorism.” (WK 2010aa)

Some early contributors to this theoretical framework in the early 20th century are “Ivan Pavlov, Edward Thorndike, Edward C. Tolman, Clark L. Hull, B.F. Skinner and many others. Many psychologists used these theories to describe and experiment with human learning.” (WK 2010aa)

For instance, “B. F. Skinner [1954 & 1965] wrote extensively on improvements of teaching based on his functional analysis of Verbal Behavior and wrote 'The Technology of Teaching,' an attempt to dispel the myths underlying contemporary education as well as promote his system he called programmed instruction. Ogden Lindsley also developed the Celeration learning system similarly based on behavior analysis but quite different from Keller's and Skinner's models.” (WK 2010aa)

However, nowadays, “[w]hile still very useful this philosophy of learning has lost favor with many educators.” (WK 2010aa)

(b) Cognitivism

The second theoretical framework for the understanding of educational technologies to be considered here concerns “cognitivism.” (WK 2010aa)

Cognitivism is closely related to the development of “cognitive science,” which “has changed how educators view learning. Since the very

early beginning of the Cognitive Revolution of the 1960s and 1970s, learning theory has undergone a great deal of change. Much of the empirical framework of Behaviorism was retained even though a new paradigm had begun. Cognitive theories look beyond behavior to explain brain-based learning. Cognitivists consider how human memory works to promote learning.” (WK 2010aa)

For instance, “[a]fter memory theories like the Atkinson-Shiffrin memory model and Baddeley's Working memory model were established as a theoretical framework in Cognitive Psychology, new cognitive frameworks of learning began to emerge during the 1970s, 1980s, and 1990s. It is important to note that Computer Science and Information Technology have had a major influence on Cognitive Science theory. The Cognitive concepts of working memory (formerly known as short term memory) and long term memory have been facilitated by research and technology from the field of Computer Science. Another major influence on the field of Cognitive Science is Noam Chomsky.” (WK 2010aa)

Nowadays, “researchers are concentrating on topics like Cognitive load and Information Processing Theory.” (WK 2010aa)

(c) Constructivism

The third theoretical framework for the understanding of educational technologies to be considered here concerns “constructivism.” (WK 2010aa)

Unlike behaviorism and cognitivism—constructivism is more concerned with the construction of reality in learning, and “is a learning theory or educational philosophy that many educators began to consider in the 1990s. One of the primary tenets of this philosophy is that learners construct their own meaning from new information, as they interact with reality or others with different perspectives.” (WK 2010aa)

In this sense, “[c]onstructivist learning environments require students to utilize their prior knowledge and experiences to formulate new, related, and/or adaptive concepts in learning. Under this framework the role of the teacher becomes that of a facilitator, providing guidance so that learners can construct their own knowledge. Constructivist educators must make sure that the prior learning experiences are appropriate and related to the concepts being taught.” (WK 2010aa)

For instance, “[D.] Jonassen (1997) suggests 'well-structured' learning environments are useful for novice learners and that 'ill-structured' environments are only useful for more advanced learners. Educators utilizing technology when teaching with a constructivist perspective should choose technologies that reinforce prior learning perhaps in a problem-solving environment.” (WK 2010aa)

(d) Connectivism

And the fourth theoretical framework for the understanding of educational technologies to be considered here concerns “connectivism.” (WK 2010aa)

Unlike the previous three theoretical frameworks—“[c]onnectivism is 'a learning theory for the digital age,' and has been developed by George Siemens and Stephen Downes based on their analysis of the limitations of behaviourism, cognitivism and constructivism to explain the effect technology has had on how we live, how we communicate, and how we learn.” (WK 2010aa)

For instance, “Donald G. Perrin, Executive Editor of the International Journal of Instructional Technology and Distance Learning says the theory 'combines relevant elements of many learning theories, social structures, and technology to create a powerful theoretical construct for learning in the digital age.’” (WK 2010aa)

But, for the critics, connectionism models the human mind like a computer (a machine with neural networks), which is misleading in understanding, so they propose an alternative theory known as “emergencism.” (C. Emmeche 1997; S. Turner 2002)

Benefits of Educational Technologies

These theoretical frameworks aside—educational technologies, for the proponents, are important for learning, because they have some noticeable benefits, as shown below and summarized in *Table 3.4*.

- “Easy-to-Access Course Materials”—“Instructors can post the course material or important information on a course website, which means students can study at a time and location they prefer and can obtain the study material very quickly.” (WK 2010aa; NSBA 2010)
- “Student Motivation”—“Computer-based instruction can give instant feedback to students and explain correct answers. Moreover, a computer is patient and non-judgmental, which can give the student motivation to continue learning. According to James Kulik, who studies the effectiveness of computers used for instruction, students usually learn more in less time when receiving computer-based instruction and they like classes more and develop more positive attitudes toward computers in computer-based classes. The American educator, Cassandra B. Whyte, researched and reported about the importance of locus of control and successful academic performance and by the late 1980s, she wrote of how important computer usage

and information technology would become in the higher education experience of the future.” (WK 2010aa; C. Whyte 1980 & 1989)

- “Wide Participation”—“Learning material can be used for long distance learning and are accessible to a wider audience.” (WK 2010aa; NSBA 2010a)
- “Improved Student Writing”—“It is convenient for students to edit their written work on word processors, which can, in turn, improve the quality of their writing. According to some studies, the students are better at critiquing and editing written work that is exchanged over a computer network with students they know.” (WK 2010aa; NSBA 2010)
- “Subjects Made Easier to Learn”—“Many different types of educational software are designed and developed to help children or teenagers to learn specific subjects. Examples include pre-school software, computer simulators, and graphics software.”
- “A Structure that Is More Amenable to Measurement and Improvement of Outcomes”—“With proper structuring it can become easier to monitor and maintain student work while also quickly gauging modifications to the instruction necessary to enhance student learning.”

Surely, there can be other benefits, but the ones above are among the most often cited.

Criticisms of Educational Technologies

Yet, educational technologies, for the critics, have their own problems—the benefits notwithstanding. Consider a few of them below, for illustration, as summarized in *Table 3.4*.

Firstly, one major criticism of educational technologies is that good training is required, which is often not materialized.

The reason is that, “[s]imilar to learning a new task or trade, special training is vital to ensuring the effective integration of classroom technology. Since technology is not the end goal of education, but rather a means by which it can be accomplished, educators must have a good grasp of the technology being used and its advantages over more traditional methods. If there is a lack in either of these areas, technology will be seen as a hindrance and not a benefit to the goals of teaching.” (WK 2010aa)

Secondly, another major criticism of educational technologies is that they do not work well “when access to a sufficient quantity of a resource is limited.” (WK 2010aa)

This problem is all the more serious, “when the quantity of computers or digital cameras for classroom use is not enough to meet the needs of an entire classroom. It also occurs in less noticed forms such as limited access for technology exploration because of the high cost of technology and the fear of damages.” (WK 2010aa)

Thirdly, still another major criticism of educational technologies is that it is “time-consuming” to master them. (WK 2010aa)

For instance, “[t]here may be an initial setup or training time cost inherent in the use of certain technologies. Even with these tasks accomplished, technology failure may occur during the activity and as a result teachers must have an alternative lesson ready. Another major issue arises because of the evolving nature of technology. New resources have to be designed and distributed whenever the technological platform has been changed. Finding quality materials to support classroom objectives after such changes is often difficult even after they exist in sufficient quantity and teachers must design these resources on their own.” (WK 2010aa)

And fourthly, still one more major criticism of educational technologies is that it can be “inconvenient” to use them.

For instance, “the inconvenience of resource placement is a hindrance, such as having to transport a classroom to a computer lab instead of having in-classroom computer access by means of technology such as laptop carts.” (WK 2010aa)

Looking Beyond

Nevertheless, these criticisms of educational technologies do not mean to ignore their benefits but show us the two opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of society with learning and the role of educational technologies as a case study here) are not to the extent that the respective defenders would like us to believe.

More importantly, this introduction to learning and the role of educational technologies can teach us something valuable about the ontological principles in existential dialectics, and good examples include the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-

hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of “radical behaviorism” by Skinner, in treating human behavior on the basis of some schedules of “reinforcement” without the need to understand the inner workings of the human mind), there is relativeness (e.g., what is true for Skinner in regard to his behaviorist view of the mind is not so for Chomsky in regard to his cognitivist view of the mind). (WK 2010bb) And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of those in connectionism to model the human mind like a machine with neural networks), there is unpredictability (e.g., the more difficult task to predict exactly how the mind works in a given point in time, since, for the critics, there are emergent phenomena which are not exactly predictable). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by constructivists that “learners construct their own meaning...as they interact with reality or others with different perspectives,” so “the role of the teacher becomes that of a facilitator”), there is inexplicability (e.g., the lack of sufficient explanation by the constructivists of the extent to which learners can really learn without the active intervention of a teacher, as the critics had pointed out that “constructivist theories are misleading or contradict known findings”). (WK 2010cc) And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the differences between “instructional technology” and “educational technology” in the context of “software, hardware, as well as Internet applications and activities,” and “other systems used in the process of developing human capability”), there is vagueness (e.g., the vagueness in the identification, since, for the critics, “there is still debate on what these terms mean”). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of educational technologies in terms of its benefits), there is complicatedness (e.g., the relatively more complicated analysis of educational technologies by the critics who questions its assumptions and claims). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration, by Skinner, of human behaviors on the basis of certain schedules of reinforcement), there is bias (e.g., the hidden bias in Skinner's radical behaviorism, since, for the critics like Chomsky, "Skinner's laboratory work could not be extended to humans" and "when it was extended to humans it represented 'scientific' behavior attempting to emulate science but which was not scientific"). (WK 2010bb) And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of the followers of Skinner in the field of behaviorism), there is emptiness (e.g., the relatively less dense, or more empty, concentration of the followers of Skinner in the field of cognitive science). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of a learner to use an educational technology when the training time is high), there is quickness (e.g., the relatively faster speed of a learner to use an educational technology well when he finishes the necessary training). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of a behaviorist to understand human behavior on the basis of some schedules of reinforcement), there is contraction (e.g., the relatively less developed ability of a behaviorist to understand human behavior on the basis of the inner workings of the mind). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of behaviorism), there is praxis (e.g., the practical application of behaviorism to the field of educational technologies). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about learning on the basis of behaviorism), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about learning on the basis of behaviorism, by the new view of connectionism about learning on the basis of neural networks). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to learn in the state of nature in a primitive way), there is transformation (e.g., the technical transformation of human learning by the invention of behaviorism, which, for the critics like Chomsky, is "highly conducive to justifying or

advancing totalitarianism”). (WK 2010bb) And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different theoretical frameworks for learning), there is asymmetry (e.g., the popularity of behaviorism in the early post-WWII period—but the popularity of cognitivism later on, especially under the influence of Chomsky). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the use of positive reinforcement), there is hardness (e.g., the use of negative reinforcement). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by educational technologies, as shown in the problems pointed out by the critics), there is progression (e.g., the progress made by educational technologies, as shown in the benefits pointed out by the proponents). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of radical behaviorism or by way of constructivism), there is difference in outcome (e.g., the contribution to the molding and control of beliefs and behaviors by way of radical behaviorism for a more controlling environment by agents on the outside—but the contribution to the molding and control of beliefs and behaviors by way of constructivism for a less controlling environment by agents on the outside). And the reverse direction also holds true.

Learning Aspirations, and the Sociology of Education

Another way to evaluate the possibility and desirability of learning from the perspective of society is to explore learning aspirations in the context of the sociology of education.

A Definition of the Term “Sociology of Education”

The term “sociology of education” refers to “the study of how public institutions and individual experiences affect education and its outcomes. It is most concerned with the public schooling systems of modern industrial societies, including the expansion of higher, further, adult, and continuing education.” (WK 2010dd; G. Marshall 1998)

And the term is often associated with “learning aspirations,” because “[e]ducation has always been seen as a fundamentally optimistic human

endeavour characterised by aspirations for progress and betterment. It is understood by many to be a means of overcoming handicaps, achieving greater equality and acquiring wealth and social status. Education is perceived as a place where children can develop according to their unique needs and potential. It is also perceived as one of the best means of achieving greater social equality. Many would say that the purpose of education should be to develop every individual to their full potential and give them a chance to achieve as much in life as their natural abilities allow (meritocracy).” (WK 2010dd; K. Schofield 1999; M. Sargent 1994)

A Brief History of the Sociology of Education

The sociology of education, by comparison with other fields, is relatively modern in origin, because “[a] systematic sociology of education began with Émile Durkheim's work on moral education as a basis for organic solidarity and that by Max Weber on the Chinese literati as an instrument of political control.” (WK 2010dd)

One has to wait “after World War II, however, that the subject received renewed interest around the world: from technological functionalism in the U.S., egalitarian reform of opportunity in Europe, and human-capital theory in economics. These all implied that, with industrialization, the need for a technologically-skilled labour force undermines class distinctions and other ascriptive systems of stratification, and that education promotes social mobility.” (WK 2010dd)

Even then, “statistical and field research across numerous societies showed a persistent link between an individual's social class and achievement, and suggested that education could only achieve limited social mobility. Sociological studies showed how schooling patterns reflected, rather than challenged, class stratification and racial and sexual discrimination. After the general collapse of functionalism from the late 1960s onwards, the idea of education as an unmitigated good was even more profoundly challenged. Neo-Marxists argued that school education simply produced a docile labour-force essential to late-capitalist class relations.” (WK 2010dd; G. Marshall 1998)

Theories of the Sociology of Education

This then lead us right to the core of the theoretical debate in the sociology of education. Consider three main theories below, for illustration

(a) Structural Functionalism

The first theory of the sociology of education to be illustrated here concerns “structural functionalism.” (WK 2010dd)

For the structural functionalists, “society leans towards equilibrium and social order. They see society like a human body, in which institutions such as education are like important organs that keep the society/body healthy and well. Social health means the same as social order, and is guaranteed when nearly everyone accepts the general moral values of their society. Hence structural functionalists believe the aim of key institutions, such as education, is to socialise children and teenagers.” (WK 2010dd; J. Bessant 2002)

By “socialization” is “the process by which the new generation learns the knowledge, attitudes and values that they will need as productive citizens. Although this aim is stated in the formal curriculum, it is mainly achieved through ‘the hidden curriculum,’ a subtler, but nonetheless powerful, indoctrination of the norms and values of the wider society. Students learn these values because their behaviour at school is regulated until they gradually internalise and accept them.” (WK 2010dd; G. Harper 1997; M. Sargent 1994)

In addition, “[e]ducation must...perform another function. As various jobs become vacant, they must be filled with the appropriate people. Therefore the other purpose of education is to sort and rank individuals for placement in the labour market. Those with high achievement will be trained for the most important jobs and in reward, be given the highest incomes. Those who achieve the least, will be given the least demanding (intellectually at any rate, if not physically) jobs, and hence the least income.” (WK 2010dd)

Moreover, there is also a hidden agenda of placement in the labour market here, because, as Sennet and Cobb put it, “to believe that ability alone decides who is rewarded is to be deceived”; and “Meighan agrees, stating that large numbers of capable students from working class backgrounds fail to achieve satisfactory standards in school and therefore fail to obtain the status they deserve. Jacob believes this is because the middle class cultural experiences that are provided at school may be contrary to the experiences working-class children receive at home. In other words, working class children are not adequately prepared to cope at school. They are therefore ‘cooled out’ from school with the least qualifications, hence they get the least desirable jobs, and so remain working class. Sargent confirms this cycle, arguing that schooling supports continuity, which in turn supports social order.” (WK 2010dd; M. Sargent 1994; R. Meighan 1997; A. Jacob 2001; L. Foster 1987)

But for the critics of structural functionalism, there is a problem in this argument, in that “the structural functionalist perspective maintains that this social order, this continuity, is what most people desire. The weakness of this perspective thus becomes evident. Why would the working class wish to stay working class? Such an inconsistency demonstrates that another perspective may be useful.” (WK 2010dd; J. Bessant 2002)

(b) Conflict theory

The second theory of the sociology of education to be illustrated here concerns “conflict theory.” (WK 2010dd)

Unlike those in structural functionalism, for the proponents of conflict theory, “society is full of vying social groups with different aspirations, different access to life chances and gain different social rewards. Relations in society, in this view, are mainly based on exploitation, oppression, domination and subordination.” (WK 2010dd; B. Furze 1997; M. Sargent 1994)

So, the unpleasant fact is that “[m]any teachers assume that students will have particular middle class experiences at home, and for some children this assumption isn’t necessarily true. Some children are expected to help their parents after school and carry considerable domestic responsibilities in their often single-parent home. The demands of this domestic labour often make it difficult for them to find time to do all their homework and thus affects their academic performance.” (WK 2001dd; A. Jacob 2001; B. Wilson 1987)

To make matter worse, “few teachers deviate from the traditional curriculum, and the curriculum conveys what constitutes knowledge as determined by the state—and those in power. This knowledge isn’t very meaningful to many of the students, who see it as pointless. Wilson and Wyn state that the students realise there is little or no direct link between the subjects they are doing and their perceived future in the labour market. Anti-school values displayed by these children are often derived from their consciousness of their real interests. Sargent believes that for working class students, striving to succeed and absorbing the school’s middle class values, is accepting their inferior social position as much as if they were determined to fail. Fitzgerald states that ‘irrespective of their academic ability or desire to learn, students from poor families have relatively little chance of securing success.’” (WK 2010dd; A. Jacob 2001; M. Sargent 1994; B. Wilson 1987; M. Henry 1988)

The winners, of course, are the “middle and especially upper-class children,” since “maintaining their superior position in society requires little effort. The federal government subsidises ‘independent’ private

schools enabling the rich to obtain 'good education' by paying for it. With this 'good education,' rich children perform better, achieve higher and obtain greater rewards. In this way, the continuation of privilege and wealth for the elite is made possible.” (WK 2010dd; M. Sargent 1994)

For conflict theorists, “the whole education system is overlain with ideology provided by the dominant group. In effect, they perpetuate the myth that education is available to all to provide a means of achieving wealth and status. Anyone who fails to achieve this goal, according to the myth, has only themselves to blame....The duplicity is so successful that many parents endure appalling jobs for many years, believing that this sacrifice will enable their children to have opportunities in life that they did not have themselves. These people who are poor and disadvantaged are victims of a societal confidence trick. They have been encouraged to believe that a major goal of schooling is to strengthen equality while, in reality, schools reflect society’s intention to maintain the previous unequal distribution of status and power.” (WK 2010dd; M. Sargent 1994; B. Wilson 1987)

However, for the critics of conflict theory, “[t]his perspective has been criticised as deterministic, pessimistic and allowing no room for the agency of individuals to improve their situation.” (WK 2010dd)

So, an alternative theory is needed, which then leads us to the third one.

(c) Structure and Agency

And the third theory of the sociology of education to be illustrated here concerns “structure and agency.” (WK 2010dd)

A good example of a theory like this is the one on cultural capital by Pierre Bourdieu, with his focus on “the dichotomy between the objective and subjective, or to put it another way, between structure and agency. Bourdieu has therefore built his theoretical framework around the important concepts of habitus, field and cultural capital. These concepts are based on the idea that objective structures determine individuals' chances, through the mechanism of the habitus, where individuals internalise these structures. However, the habitus is also formed by, for example, an individual's position in various fields, their family and their everyday experiences. Therefore one's class position does not determine one's life chances, although it does play an important part, alongside other factors.” (WK 2010dd)

When applied to the field of education, “Bourdieu used the idea of cultural capital to explore the differences in outcomes for students from different classes in the French educational system. He explored the tension between the conservative reproduction and the innovative production of

knowledge and experience. He found that this tension is intensified by considerations of which particular cultural past and present is to be conserved and reproduced in schools. Bourdieu argues that it is the culture of the dominant groups, and therefore their cultural capital, which is embodied in schools, and that this leads to social reproduction.” (WK 2010dd; R. Harker 1990)

This culture of the dominant group “is assumed by the school to be the natural and only proper type of cultural capital and is therefore legitimated. It demands 'uniformly of all its students that they should have what it does not give.' This legitimate cultural capital allows students who possess it to gain educational capital in the form of qualifications. Those lower-class students are therefore disadvantaged....The subjective expectations influenced by the objective structures found in the school perpetuate social reproduction by encouraging less-privileged students to eliminate themselves from the system, so that fewer and fewer are to be found as one journeys through the levels of the system.” (WK 2010dd; D. Swartz 2000)

However, “[t]he process of social reproduction is neither perfect nor complete, but still, only a small number of less-privileged students achieve success. For the majority of these students who do succeed at school, they have had to internalise the values of the dominant classes and use them as their own, to the detriment of their original habitus and cultural values.” (WK 2010dd; R. Harker 1990)

In this way, “Bourdieu's perspective reveals how objective structures play an important role in determining individual achievement in school, but allows for the exercise of an individual's agency to overcome these barriers, although this choice is not without its penalties.” (WK 2010dd)

Then of course, the discourse on structure and agency is not without its own problems. Consider a few of them below, for illustration.

Firstly, one problem with the discourse on structure and agency is precisely the strengths (unlike the weaknesses) of other theories as cited above (i.e., structural functionalism and conflict theory).

Secondly, in the case of Bourdieu, there is another problem, in that he allows his “passionate activism” to drive his works, to the point that, in 2001, there was “a documentary film about Bourdieu—*Sociology is a Martial Art*—which “became an unexpected hit in Paris. Its very title stressed how much of a politically engaged intellectual Bourdieu was...slugging it out with politicians because he thought that was what people like him should do.” (WK 2010ff) One cannot help but wonder to what extent his works are contaminated by his passionate activism.

And thirdly, still another problem with Bourdieu's view is that his dialectic treatment of structure and agency is not comprehensive enough, as I already proposed an alternative framework incorporating "method," "structure," "process," "agency," and "outcome" in my meta-theory of existential dialectics.

Transcending the Debate

In any event, the introduction to this theoretical debate on learning aspirations and the sociology of education is not to favor one theory over the others but to teach us the opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of society with learning aspirations and the sociology of education as a case study here) are not to the extent that the respective defenders would like us to believe.

In addition, this introduction to the theoretical debate on learning aspirations and the sociology of education can cast an illuminating light on the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of soundness for a system of ideas, as in the worldview of "middle-class society"), there is informalness (e.g., the nonformal nature of the worldview of "middle-class society," since, for the critics, "[m]any teachers assume that students will have particular middle class experiences at home, and for some children this assumption isn't necessarily true"). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of conflict theorists in regard to the "societal confidence trick" in the sociology of education), there is relativeness (e.g., what is true for conflict theorists in regard to the "societal confidence trick" in the sociology of education is not so for the critics, since "[t]his perspective has been criticised as deterministic,

pessimistic and allowing no room for the agency of individuals to improve their situation”). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of an educational system, in which “few teachers deviate from the traditional curriculum, and the curriculum conveys what constitutes knowledge as determined by the state—and those in power”), there is unpredictability (e.g., the more difficult task to predict exactly to what extent a particular student from the lower class will succeed, because, for “less-privileged students...fewer and fewer are to be found as one journeys through the levels of the system”). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by structural functionalists that “[s]ocial health means the same as social order, and is guaranteed when nearly everyone accepts the general moral values of their society”), there is inexplicability (e.g., the lack of sufficient explanation by structural functionalists of why social order so understood is necessarily good, since the critics can then ask, “Why would the working class wish to stay working class?”). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the lower class, middle class, and upper class in the discourse on learning aspirations and the sociology of education), there is vagueness (e.g., the vagueness in the identification of three major classes in society, since it is not clear why the classification has to be three, not four, five, six, seven, etc.). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of the functions of education in accordance to structural functionalism), there is complicatedness (e.g., the relatively complicated analysis of the functions of education, by the critics like conflict theorists who question the assumptions and claims). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of “socialization” as “the process by which the new generation learns the knowledge, attitudes and values that they will need as productive citizens”), there is hiddenness (e.g., the hidden bias in the formal curriculum, since “it is mainly achieved through ‘the hidden curriculum,’ a subtler, but nonetheless powerful, indoctrination of the norms and values of the wider society,” and “students learn these values because their behaviour at school is regulated until they gradually internalise and accept them”). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of the “middle and especially upper-class children,” as “one journeys through the levels of the system” to the top), there is emptiness (e.g., the relatively less dense, or more empty, concentration of the “less-privileged children,” as “one journeys through the levels of the system” to the top, because “students from poor families have relatively little chance of securing success”). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of “lower-class children” to climb up the ladder of success to the top of society), there is quickness (e.g., the relatively faster speed of “upper-class children” to climb up the ladder of success to the top of society, as a way for “the continuation of privilege and wealth for the elite”). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relative expansion of the influence of middle class in modern America), there is contraction (e.g., the relative contraction of the influence of the blue-blooded families in modern America). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about structural functionalism in the older days of the sociology of education), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about structural functionalism, by the discourse on structure and agency nowadays). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to live together in the state of nature, with relatively little class distinction), there is transformation (e.g., the technical transformation of human living together by the invention of different systematic ideologies like the one about “middle class society”). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different theories in the sociology of education), there is asymmetry (e.g., the popularity of structural functionalism in the 1940s and 1950s—but the popularity of conflict theory in the 1980’s, for example). (WK 2010ee) And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the domination by indoctrination, like “the hidden curriculum” in the sociology of education), there is hardness (e.g., the domination by force, like the colonialization of the Non-West by the West in modern times). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by the discourse on structure and agency, as shown by the strengths of other theories like structural functionalism and conflict theory, together with the problems in the works of Bourdieu, as pointed out by the critics), there is progression (e.g., the progress made by the discourse on structure and agency for a better understanding of the interactions between structure and agency). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs and values, regardless of whether this be done by way of the ideology of a “middle-class society” or by way of the ideology of “the best and the brightest”), there is difference in outcome (e.g., the contribution to the molding and control of beliefs and values by way of the ideology that “education is available to all,” ultimately for the interests of a “middle-class society”—but the contribution to the molding and control of beliefs and values by way of the ideology of “the best and the brightest,” ultimately for the interests of an elitist society). And the reverse direction also holds true.

Learning and Culture

Learning, when examined from the perspective of culture, teaches us something different on its possibility and desirability, and this can be shown by way of two case studies, namely, (3.5.1) culture, learning styles, and the contention on diversity, and (3.5.2) alternative education, and the impact of different traditions—to be addressed hereafter, respectively.

Culture, Learning Styles, and the Contention on Diversity

The inquiry about culture, learning styles, and the contention on diversity has three issues to be considered, namely, (a) diversity, (b) learnig styles, and (c) culture—to be considered below, in that order.

Uniformity vs. Diversity

The contention between uniformity and diversity in education is noticeable enough, since “uniformity continues to dominate school practices” and, simultaneously, there exist different groups of learners, which vary from culture to culture and from individual to individual. Thus is an dilemma in education.

To start, “[m]ore than 50 years ago, Nathaniel Cantor [1946] observed that ‘the public elementary and high schools, and colleges, generally project what they consider to be the proper way of learning which is uniform for all students’...In 50 years, too little has changed. Most schools still function as if all students were the same. Students use the same textbooks and the same materials for learning. They work at the same pace on the same quantity of material. They study the same content and work through the same curriculum on the same schedule. Teachers talk with whole groups of students, delivering the same information at the same time to everyone. And, of course, schools use the same tests for all to measure the success of the learning.” (P. Guild 2001)

So, the question is, Is uniformity in education good for learning? There are two sides of the debate.

On the one hand, there is a good argument for uniformity: “Is this kind of sameness always wrong? Surely, given the task of educating large numbers of people, efficiency justifies some consistency and uniformity in the process. Even more valid is the argument for general standards and equality across schools, districts, and states.” (P. Guild 2001)

On the other hand, there is also a good argument for diveristy: “Teachers know that students learn in different ways; the experience in the classroom confirms this every day...Most educators can talk about learning differences, whether by the name of learning styles, cognitive styles, psychological type, or multiple intelligences. Learners bring their own individual approach, talents and interests to the learning situation. We also know that an individual learner’s culture, family background, and socioeconomic level affect his or her learning. The context in which someone grows and develops has an important impact on learning.” (P. Guild 2001)

So, there is a need “to address the imbalance between uniformity and diversity.” (P. Guild 2001)

The Issues of Learning Styles

One good way to address the imbalance concerns the issue of learning styles, which refer to “several basic ways in which we all interact with a situation, a person, information, or ideas. First we take in the occurrence; then we think about it; react to it; and ultimately act upon it. These basic functions imply four categories of style differences,” in relation to (a) perception, (b) conception, (c) affect, and (d) behavior—to be addressed below and summarized in *Table 3.5*.

(a) Perception

The first aspect of learning styles to be addressed here concerns “perception,” which refers to “the initial stage of cognition,” involving “receiving, obtaining, taking possession of, and discerning information, ideas, and concepts.” (P. Guild 2001)

For instance, “[s]ome of us best perceive what is real; others clearly see possibilities with their imaginations. Some people see parts of a whole, separating ideas from their context, while others see the whole, not unlike the difference between seeing the forest or the trees....A gifted artist can describe the gestalt of a painting, but some viewers will be struck by, and confined to, a single image in the work. The artist can plead, cajole, and discuss the entire painting in detail, but to little avail if the viewer's perception governs a certain view.” (P. Guild 2001)

Or in music, “[t]wo people listening to the same music respond differently to the nuances of the sound, reflecting the depth of their musical experiences and their personal perceptions. Perhaps one is tuned to certain subtleties, while the other listens more generally. Two people sitting next to each other at a movie will recall different things when they discuss the film later. Students in a class often hear the teacher's directions in very different ways.” (P. Guild 2001)

Or in gaining knowledge, “[s]ome people use abstract sources, reading about things and listening to others' descriptions. Others need concrete experiences. The concrete person often will depend directly on the senses for information: 'I see it; now I know what it is.' The abstract person is more receptive to secondhand sources of knowledge. Some people have to touch something or see it operate before they accept it as real, while others can imagine a vivid reality without needing to experience it. There are also sensory specialists, those people who rely on one sense more than another to gather information. Again, these different ways of getting information and gaining knowledge reflect distinct personal styles.” (P. Guild 2001)

(b) Conception

The second aspect of learning styles to be addressed here concerns “conception,” which refers to the way in which people think about the information already perceived through perception.

For instance, “[s]ome people are always looking for connections and ways to tie things together. Others are more divergent: One thought, idea, or fact triggers a multitude of new directions. Some people order ideas, information, and experiences in a linear, sequential way, while others organize their thoughts in clusters and random patterns. Some people think aloud; they verbalize ideas as a way of understanding them. Others

concentrate on understanding concepts and experiences privately in their own minds. Some people think quickly, spontaneously, and impulsively; others are deliberate and reflective.” (P. Guild 2001)

This can make a difference in thinking among people: “You may have had the experience of asking someone, 'Whatever made you say that?' Then you realize the person was thinking about something in a very different way than you were. The important point is that these differences form patterns for each person and affect their total behavior.” (P. Guild 2001)

(c) Affect

The third aspect of learning styles to be addressed here concerns “affect,” which refers to the “differences in motivation, judgments, values, and emotional responses” among individuals.

For instance, “[s]ome people are motivated internally; others seek external rewards. Some people actively seek to please others: children to please their parents and teachers, adults to please bosses and spouses. Some people simply are not attuned to others' expectations, and still others will rebel against any such demands. Some people make decisions logically, rationally, objectively, and coolly. Others decide things subjectively, focusing on their own and others' perceptions and emotions. Some people seek frequent feedback on their ideas and work; some are crushed by slight criticism. Others welcome analytical comments, and still others would never ask an outsider for a critique.” (P. Guild 2001)

In addition, “[f]or some people, the medium is the message; others focus directly on the content. Some people are emotionally involved in everything they do, and others are neutral. The emotional learner prefers a classroom with a high emotional energy while another learner works best in a low-key environment. These affective differences are also stylistic and interrelated with the conceptual and cognitive characteristics discussed above.” (P. Guild 2001)

(d) Behavior

And the fourth aspect of learning styles to be addressed here concerns “behavior,” which refers to the actions of an individual, and the “cognitive, conceptual, and affective patterns are the roots of behavior.” (P. Guild 2001)

For instance, “[t]he reflective thinker...can be expected to act in a reflective way in a variety of situations from decision making to relating to people. Some people scan a situation to get the overall gist before tackling a problem; others focus on, a certain part of the problem immediately and start with it. Some people approach a task randomly; others are very

systematic. Some people need explicit structure; others prefer and perform best in a more open-ended situation. Some people prefer to work alone, and others like groups. Many people prefer working in certain kinds of physical environments.” (P. Guild 2001)

In education, “[r]eflective students are slow to respond to questions and need to think through a response carefully. Impulsive learners respond quickly and blurt out their thoughts. The step-by-step person learns best when each stage is clear and the transitions are spelled out. Another kind of learner makes intuitive leaps. After several weeks of struggling with division of fractions, this student may suddenly announce, ‘I’ve got it!’ This same intuitive learner also will be impatient with sounding out parts of a word and doing phonetic worksheets when she has already grasped the essence of a story.” (P. Guild 2001)

The Issues of Culture

If there are differences in learning styles, they are further shaped by cultural differences, as Pat Guild (2001) argued.

The word “culture” here refers to such factors as “ethnicity,” “religion,” “gender,” “socioeconomic background,” and the like. (P. Guild 2001)

For instance, “culture and learning are connected in important ways. Early life experiences and the values of a person’s culture affect both the expectations and the processes of learning. If this relationship is true, could we then assume that students who share cultural characteristics have common ways of learning? Does culture create a way of learning, and how would we know this? Do African American students have similar ways of learning? Do girls learn differently than boys? These questions are both important and controversial.” (P. Guild 2001)

Surely, there is a danger here, because “information about a group of people often leads to naive inferences about individual members of that group. Additionally, in the search for explanations of the continued achievement difference between students of color and mainstream white students, there is an understandable sensitivity about causes and effects. It is all too easy to confuse descriptions of differences with explanations for deficits. The questions also are controversial because they force us to confront philosophical issues in the uniformity versus diversity debate. Is equality of instruction synonymous with equity of educational opportunity for all? Is the purpose of public schooling to create a ‘melting pot’ or ‘a salad bowl?’” (P. Guild 2001)

This sensitiveness of the issue cannot be underestimated, because, for illustration, in 1987, “New York state published a booklet for educators

aimed at decreasing the student dropout rate. A small section of the booklet described learning styles typical of minority students and identified certain patterns associated with African American students. These descriptions became the subject of intense scrutiny and animated debate. The descriptions were eventually removed from the booklet, but a review panel concluded that 'learning style and behavioral tendency do exist....' (P. Guild 2001; S. Claxton 1990)

The Nature vs. Nurture Debate Revisited

These alleged differences in learning styles and culture raise a larger question concerning nature vs. nurture.

The reason is that, “[i]f a classroom teacher is to facilitate successful learning opportunities for all learners, he or she must 'know' the learner. This includes knowing about innate personality and also learned cultural values that affect behavior. The learner, of any age, is a product of nature and nurture. We each are born with predisposition for learning in certain ways. We also are products of external influences, especially within our immediate family, extended community, and culture.” (P. Guild 2001)

For researchers on the controversial topic, “learning patterns are a function of both nature and nurture. [L.] Myers (1990) asserts: 'Type development starts at a very early age. The hypothesis is that type is inborn, an innate predisposition like right or left-handedness, but the successful development of type can be greatly helped or hindered by environment from the beginning'...[H.] Gardner [1991: 38] echoes this perspective: '[W]e are as much creatures of our culture as we are creatures of our brain.’” (P. Guild 2001)

A more difficult question concerns “which is more important: innate personality traits or the influence of culture? This question has no clear answer. The most accurate response is probably 'it depends.’” (P. Guild 2001)

But the bottom line is, for Pat Guild (2001) who wrote this article on learning styles and culture, is that “a deep awareness of diverse learning styles requires a commitment to the belief that all students can be successful learners. If a learning experience is adjusted to accommodate diverse styles, students will be able to use their strengths to achieve this success.”

In the end, for Guild (2001), “[e]very child of every culture, race, ethnicity, socioeconomic status, gender, age, ability, and talent deserves to have an equal opportunity to be successful in school. Knowing each student's culture is essential for providing successful learning

opportunities. Understanding learning differences will help educators facilitate, structure, and validate successful learning for every student.”

Criticisms against the Political Correctness of Diversity

But for the critics, the views by the proponents of the diversity of learning styles and culture in education have their own political correctness, which create major problems. Consider a few criticisms below, for illustration, as summarized in *Table 3.5*.

Firstly, one major problem with the political correctness of diversity in education is that it is not quite consistent.

For instance, on the one hand, it claims that cultural differences among different ethnic/racial groups and genders yield different learning styles and that such a diversity should be respected. Yet, on the other hand, it does not accept different negative learning outcomes due to these differences in learning styles (like the case about black students who do not do well academically in school because of their different sub-culture).

Culture comes in a package, with both good and bad consequences, as there is no perfect culture. One cannot simply use the culture argument (whenever one benefits from it) but then rejects the same culture argument (whenever one does not benefit from it). As is true about general things in life, there are both costs and benefits, not that one only accepts benefits but refuses to accept costs.

Secondly, another major problem with the political correctness of diversity in education is that our neurobiological makeup often work in unison, so the discourse on different learning styles in perception and other categories has little scientific basis (as already elaborated in *Sec. 3.2.2*).

For instance, “according to Susan Greenfield the practice [of different learning styles] is 'nonsense' from a neuroscientific point of view,” since she wrote: “Humans have evolved to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain.” (WK 2010z; J. Henry 2007)

Thirdly, still another major problem with the political correctness of diversity in education is that its proponents like the author of the article under discussion here (Pat Guild) often use a lot of generalizations themselves like different learning styles and cultural traditions (which they do not quite question) for their own purpose but are quick to question the generalizations of others whenever these do not support what they advocate and dismissively call them stereotypes.

For instance, Guild (2001) is quick to dismiss any negative cultural stereotypes against black Americans in education but to endorse any

positive ones about them: “There are a variety of descriptions of typical learning patterns of African Americans...which report the students’ desire for oral experiences, physical activity, and strong personal relationships....These patterns would call for classroom work that includes collaboration, discussion, and active projects.” (P. Guild 2001; J. Hale-Benson 1986; B. Shade 1989; A. Hilliard 1989)

As Guild continued, these “same authors report that mainstream white male Americans value independence, analytic thinking, objectivity, and accuracy. These values translate into learning experiences that focus on information, competition, tests, grades, and critical thinking. It is no surprise that these patterns are prevalent in most schools because they were established and are generally administrated by mainstream white males. The further away from this style of education a student is, the more difficulty he or she has adjusting.”

But Guild did not question the generalizations that she herself made about different learning styles, cultural traditions, and so on, in relation to others. Are these also questionable stereotypes that she uses for her own purpose?

Fourthly, one more major problem with the political correctness of diversity in education is that not all learning styles are created equal. Some learning styles, like those by black students in America who do not do well academically in school, are less equal than those by white and Asian students who do well academically. But whenever black students do not do well academically in school, the proponents of diversity make up the label “white school” as a way to blame the school system, not those who fail to learn. Asian students, for instance, have to overcome all kinds of obstacles in American schools but still succeed in the end, without blaming the “white school” (which does not really exist but constitutes a rhetorical label to be used for political purpose).

And fifthly, still another major problem with the political correctness of diversity in education is that its proponents like the author of the article under discussion here (Pat Guild) is driven by an ideological bent for equality in education, as she argued time and again that “a deep awareness of diverse learning styles requires a commitment to the belief that all students can be successful learners....Every child of every culture, race, ethnicity, socioeconomic status, gender, age, ability, and talent deserves to have an equal opportunity to be successful in school.”

But this egalitarian ideological bent runs counter to her scholarly acknowledgement of the existence of “innate personality and also learned cultural values that affect behavior,” such that not all students can be successful (or equally successful) learners. (P. Guild 2001) Nature does

matter—as this is something that I already went to great lengths to explain in *Beyond Nature and Nurture* (2006), on why some groups and countries are more successful than others historically, without ignoring the social and cultural factors either.

In Historical Retrospect

In any case, these criticisms of the political correctness of diversity on learning styles and culture is not to favor one group over the others but to teach us the opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of culture with culture, learning styles, and the contention on diversity as a case study here) are not to the extent that the respective defenders would like us to believe.

In addition, this analysis of culture, learning styles, and the contention on diversity can teach us something refreshing about the ontological principles in existential dialectics, and good examples include the formalness-informalness principle, the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the formalness-informalness principle, if there is formalness (e.g., the formal logical requirement of consistency for a system of ideas, as in the discourse on diversity in education), there is informalness (e.g., the nonformal nature of inconsistency in the discourse on diversity in education, as its proponents insist that, on the one hand, cultural differences among different ethnic/racial groups and genders yield different learning styles and that such diversity should be respected, but, on the other hand, they do not accept different negative learning outcomes due to these differences in learning styles). And the reverse direction also holds true.

In relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view of Guild, in that “all students can be successful learners”), there is relativeness (e.g., what is true for Guild about the belief that “all students can be successful learners” is not necessarily so for the critics, who question her claim, in that not all learning styles are created equal). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of the proponents of diversity in education like Guild to advocate different learning styles for everyone), there is unpredictability (e.g., the more difficult task to predict exactly to what extent black students will do well academically in school even if given the learning styles that they have, since not all learning styles are created equal, as shown by the historical trend that black students have not been academically successful in school through the ages, when compared with other groups). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by the proponents of diversity in education that there are different learning styles for different groups), there is inexplicability (e.g., the lack of sufficient explanation by the proponents of diversity in education of why it is necessarily true that all learning styles are created equal, because, for the critics like Susan Greenfield, “the practice [of different learning styles] is 'nonsense' from a neuroscientific point of view,” since “[h]umans have evolved to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain”). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the four categories of learning style differences), there is vagueness (e.g., the vagueness in the identification of the four categories, since it is not clear that they can be so neatly separated, since, for the critics like Thomas Kuhn [1962], “there is no theory-neutrality of observation in scientific research activities,” such that perception and conception, for example, are closely intertwined). (P. Baofu 2000; E. Nagel 1968) And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of diversity in education by its proponents like Pat Guild), there is complicatedness (e.g., the relatively complicated analysis of diversity in education by the critics who question the assumptions and claims, as shown in the criticisms). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of different learning styles for successful learning), there is hiddenness (e.g., the hidden bias in the discourse on different learning styles, because of its egalitarian ideological bent). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of white students in modern

America to do well academically in school, when compared with black students), there is emptiness (e.g., the relatively less dense, or more empty, concentration of black students in modern America to do well academically in school, when compared with white students). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of black students to learn when put in an academic environment which “value independence, analytic thinking, objectivity, and accuracy”), there is quickness (e.g., the relatively faster speed of white and Asian students to learn when put in an academic environment which “value independence, analytic thinking, objectivity, and accuracy”). And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of someone who is good in making “decisions logically, rationally, objectively, and coolly,” when compared with someone else who “decide things subjectively, focusing on their own and others' perceptions and emotions”), there is contraction (e.g., the relatively less developed ability of the same person to “decide things subjectively, focusing on their own and others' perceptions and emotions,” if he is better in making “decisions logically, rationally, objectively, and coolly”). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of egalitarianism), there is praxis (e.g., the practical application of egalitarianism for diversity in education by the proponents like Pat Guild). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about uniformity in education in modern times), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about uniformity, by the proponents of diversity in education for different learning styles). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans in the state of nature “to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain,” according to Susan Greenfield), there is transformation (e.g., the technical transformation of human learning by the invention of the egalitarian ideology for different learning styles, not in unison). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different learning styles in school), there is

asymmetry (e.g., not all learning styles in school are created equal, as some are more successful academically than others, as shown in the achievement gap between black students, on the one hand, and white and Asian students, on the other hand). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., the praise of those who do well academically in school), there is hardness (e.g., the disrespect of those who do not do well academically in school). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by the mainstream academic environment in America, when black students do not do well academically in school), there is progression (e.g., the progress made by the mainstream academic environment in America, when white and Asian students do well academically in school, when compared with black students). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of uniformity in education or diversity in education), there is difference in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors, by way of uniformity in education for a lifeworld of efficiency and competition—but the contribution to the molding and control of beliefs, values, and behaviors, by way of diversity in education for a lifeworld of equality and tolerance). And the reverse direction also holds true.

Alternative Education, and the Impact of Different Traditions

Another way to evaluate the possibility and desirability of learning from the perspective of culture concerns alternative education and the impact of different traditions.

The term “alternative education” (also called “non-traditional education” or “educational alternative”) refers to “a number of approaches to teaching and learning other than mainstream or traditional education.” (WK 2010gg)

Alternative education is “often rooted in various philosophies that are fundamentally different from those of mainstream or traditional education. While some have strong political, scholarly, or philosophical orientations, others are more informal associations of teachers and students dissatisfied with some aspect of mainstream or traditional education.” (WK 2010gg)

Good examples of alternative education are “charter schools, alternative schools, independent schools, and home-based learning,” which “vary widely, but often emphasize the value of small class size, close relationships between students and teachers, and a sense of community.” (WK 2010gg)

Origins of Alternative Education

Historically, alternative education “presupposes some kind of orthodoxy to which the alternative is opposed. In general, this limits the term to the last two or perhaps three centuries, with the rise of standardized and, later, compulsory education at the primary and secondary levels. Many critics in this period have suggested that the education of young people should be undertaken in radically different ways than ones in practice.” (WK 2010gg)

For instance, “[i]n the 19th century, the Swiss humanitarian Johann Heinrich Pestalozzi; the American transcendentalists Amos Bronson Alcott, Ralph Waldo Emerson, and Henry David Thoreau; the founders of progressive education, John Dewey and Francis Parker; and educational pioneers, such as Maria Montessori and Rudolf Steiner (founder of the Waldorf schools); among others, all insisted that education should be understood as the art of cultivating the moral, emotional, physical, psychological, and spiritual aspects of the developing child. Anarchists such as Leo Tolstoy and Francisco Ferrer y Guardia emphasized education as a force for political liberation, secularism, and elimination of class distinctions. After World War II the Reggio Emilia approach was developed in Italy in the town of that name.” (WK 2010gg)

Nowadays, however, “social critics such as John Caldwell Holt, Paul Goodman, Frederick Mayer, George Dennison and Ivan Illich have examined education from more individualist, anarchist, and libertarian perspectives, that is, critiques of the ways that they feel conventional education subverts democracy by molding young people's understandings. Other writers, from the revolutionary Paulo Freire to American educators like Herbert Kohl and Jonathan Kozol, have criticized mainstream Western education from the viewpoint of their varied left-liberal and radical politics.” (WK 2010gg)

In any event, different forms of alternative education have something in common, and “Ron Miller has identified five core elements common to many contemporary educational alternatives:” (WK 2010gg)

- “Respect for every person”
- “Balance”

- “Decentralization of authority”
- “Noninterference between political, economic, and cultural spheres of society”
- “A holistic worldview”

Surely, there can be other elements, but these five are the most representative.

Modern Forms of Alternative Education

In spite of these common elements, alternative education takes different modern forms “at the elementary, secondary, and tertiary levels of education,” which “generally fall into four major categories,” namely, (a) “school choice,” (b) “alternative school,” (c) “independent school,” and (d) “home-based education”—to be addressed in what follows and summarized in *Table 3.6*: (WK 2010gg)

(a) School Choice

The first category of alternative education to be introduced here concerns “school choice” (also known as “public school choice option”). (WK 2010gg)

Public school choice options refers to “entirely separate schools in their own settings as well as classes, programs, and even semi-autonomous ‘schools within schools.’ Public school choice options are open to all students in their communities, though some have waiting lists. Among these are charter schools, combining private initiatives and state funding; and magnet schools, which attract students to particular themes, such as performing arts.” (WK 2010gg)

(b) Alternative School

The second category of alternative education to be introduced here concerns “alternative school,” which refers to “an educational establishment with a curriculum and methods that are nontraditional.” (WK 2010gg)

In the United States, many alternative schools “were founded...in the 1970s as an alternative to mainstream or traditional classroom structure. A wide range of philosophies and teaching methods are offered by alternative schools; some have strong political, scholarly, or philosophical orientations, while others are more ad-hoc assemblies of teachers and students dissatisfied with some aspect of mainstream or traditional education.” (WK 2010gg; F. Weinstein 1986)

In the United Kingdom, by 2003, “there were approximately 70 alternative schools....In the UK public funding is not available for

alternative schools and therefore alternative schools are usually fee-paying institutions. In the USA an increasing number of public school systems are offering alternative streams (language-immersion, Montessori, Waldorf), but the majority of alternative schools are still independent and thus without financial support from the government.” (WK 2010gg)

Alternative schools have another distinctive feature, in that, besides “providing an academic alternative, some states in the U.S. have established alternative schools for students who have had disciplinary or social challenges. In some states such schools are organized to have a strong punitive aspect emphasizing discipline and provide a greatly inferior education. It is common in those states for children found to be delinquent by courts to be sentenced to alternative school as a punishment. It is also common in the United States for public school systems to operate alternative schools as a place to segregate special needs students, such as students with emotional disabilities. In such cases they are often mixed with delinquents.” (WK 2010gg; J. Kellmayer 1996)

(c) Independent School

The third category of alternative education to be introduced here concerns “independent school” (also known as “private school”).

Independent schools, in general, have “more flexibility in staff selection and educational approach. The most plentiful of these are Montessori schools, Waldorf schools (the latter are also called Steiner schools after their founder), and Friends schools.” (WK 2010gg)

Other forms of independent schools include “democratic, or free schools such as Sands School, Summerhill School and Sudbury Valley School, Krishnamurti schools, open classroom schools, those based on experiential education, as well as schools which teach using international curriculum such as the International Baccalaureate and Round Square schools.” (WK 2010gg)

To make things more diverse, “an increasing number of traditionally independent school forms now also exist within state-run, public education; this is especially true of the Waldorf and Montessori schools. The majority of independent schools offer at least partial scholarships.” (WK 2010gg)

(d) Home-Based Education

And the fourth category of alternative education to be introduced here concerns “home-based education.” (WK 2010gg)

Home-based education often comes as a last resort for “families who seek alternatives based on educational, philosophical, or religious reasons, or if there appears to be no nearby educational alternative.” (WK 2010gg)

Some students in home-based education can be known as “unschoolers, for they follow an approach based on interest, rather than a set curriculum. Others enroll in umbrella schools which provide a curriculum to follow. Many choose this alternative for religious-based reasons, but practitioners of home-based education are of all backgrounds and philosophies.” (WK 2010gg)

Problems in Alternative Education

Yet, alternative education has its own problems to be resolved. Consider a few of them below, for illustration, and summarized in *Table 3.6*.

Firstly, one major problem in alternative education is that the four categories are not so clear-cut as they may sound.

For instance, “[t]here are...some interesting grey areas,” like some “home-educators” who “have combined to create resource centers where they meet as often as five or more days a week, but their members all consider themselves home-educated. In some states publicly run school districts have set up programs for homeschoolers whereby they are considered enrolled, and have access to school resources and facilities.” (WK 2010gg)

In other cases, “many traditional schools have incorporated methods originally found only in alternative education into their general approach, so the line between alternative and mainstream education is continually becoming more blurred.” (WK 2010gg)

Secondly, another major problem in alternative education is that they are not necessarily more effective than traditional or conventional schools.

For instance, researchers in alternative education “are especially concerned by the rate at which students with disabilities leave school without acquiring a high school diploma. Recent data regarding the dropout rate of high school students is as follows: The New Jersey special education dropout rate is approximately 11% (in 2005 10.9% and in 2006 10.5%).” (WK 2010gg)

Thirdly, still another major problem in alternative education is that it is not clear if they are desirable to have in the first place—other than being something different.

For instance, in India, some “develop...new methods of alternative schooling. Students used to stay in Gurukulas, where they received free food and shelter, and education from a 'guru' ('teacher' in Sanskrit). Progress was not based on examinations and marks; tests were given by the gurus but not ranks. This system aimed to nurture the students' natural creativity and all-round personality development. While the mainstream

education system in India is still based on that introduced by Lord Macaulay, a few projects aim to rejuvenate the early system, Some students in these and similar projects take up research work in the field of Sanskrit studies, Vedic studies, Vedic science, Yoga and Ayurveda.” (WK 2010gg)

In the Netherlands, “there is Intercultural Open University a leading alternative education provider for person centered graduate education. In keeping with the philosophy of alternative education, the university does not use grades, and uses only narrative evaluations for assessment. There are no traditional academic departments and learners develop a self-directed individualized curriculum under the guidance of a core faculty advisor.” (WK 2010gg)

And in the United States, “[c]olleges such as Bennington College, Evergreen State College, Goddard College, Union Institute & University, Hampshire College, Johnston Center at the University of Redlands, and New College of Florida have no grades...and use only narrative evaluations for assessment. Other colleges, such as Bard College at Simon's Rock, Marlboro College, Antioch College, Antioch University Los Angeles, Antioch University Midwest, Antioch University New England, Antioch University Santa Barbara and Antioch University Seattle do not have traditional academic departments and are instead organized around interdisciplinary units.” (WK 2010gg)

So, the deeper question is, All these novelties may sound wonderful, but are they really desirable to have in the first place—not just something different?

And fourthly, one more major problem in alternative education is that it can become extreme, and the problems with unschooling are worth telling.

For the critics, alternative education, especially with “unschooling” as a good example, can be “an extreme educational philosophy, with concerns that unschooled children will lack the social skills, structure, and motivation of their peers, especially in the job market”; consider the following criticisms for illustration. (WK 2010hh)

- “Children won't learn the things they will need to know in their adult lives.” (WK 2010hh; J. Holt 1981; B. Erbe. 2006)
- “A child may not learn the same things a regular-schooling peer does, unless an educational professional controls what material is covered.” (WK 2010hh; V. Clayton 2006)

- “Because schools provide a ready-made source of peers, unschooling children will have to have other ways to make friends in their age group.” (WK 2010hh; J. Holt 1981)
- “A child's only opportunity to experience people of other cultures and worldviews would be in a religious community, scout group, sports teams, etc. If a child isn't exposed to anything 'extra,' they might not be exposed to other socio-economic groups.” (WK 2010hh; J. Holt 1981)
- There is the “[f]ear that a child may be completely unmotivated and never learn anything on their own if raised in an non-manipulated environment.” (WK 2010hh)
- “A parent may fear they do not have the parenting skills required to guide and advise their children in life skills or help them pursue their interests.” (WK 2010hh; B. Erbe 2006; V. Clayton 2006)
- “Unschooling children may have to do more legwork before college to gain credentials, such as sitting for a GED.” (WK 2010hh; V. Clayton 2006)
- “Children who direct their own educations generally grow up to be leaders, not followers, and find it more difficult to take direction from others.”

Of course, these criticisms are not exhaustive but illustrative only.

A Sober Reflection

What is needed here for alternative education is not naïve euphoria but sober reflection

In other words, these criticisms of alternative education and the impact of different traditions do not mean to dismiss it completely but to show us the opposing sides of the debate, such that the possibility and desirability of learning (from the perspective of culture with alternative education and the impact of different traditions as a case study here) are not to the extent that the respective defenders would like us to believe.

More importantly, this analysis of alternative education and the impact of different traditions can teach us something more sobering about the ontological principles in existential dialectics, and good examples include the absoluteness-relativeness principle, the predictability-unpredictability principle, the explicability-inexplicability principle, the preciseness-vagueness principle, the simpleness-complicatedness principle, the openness-hiddenness principle, the denseness-emptiness principle, the slowness-quickness principle, the expansion-contraction principle, the theory-praxis principle, the convention-novelty principle, the

evolution-transformation principle, the symmetry-asymmetry principle, the softness-hardness principle, the regression-progression principle, and the same-difference principle.

For instance, in relation to the absoluteness-relativeness principle, if there is absoluteness (e.g., the absolute view by the proponents of unschooling in encouraging the “exploration of activities led by the children themselves”), there is relativeness (e.g., what is good for the proponents of unschooling in regard to the encouragement of the “exploration of activities led by the children themselves” is not necessarily so for the proponents of traditional education in regard to the need for the control by a teacher). And the reverse direction also holds true.

In relation to the predictability-unpredictability principle, if there is predictability (e.g., the predictable tendency of students with disabilities to join alternative schools), there is unpredictability (e.g., the more difficult task to predict exactly to what extent these students with disabilities will stay until they finish, without dropping out, because researchers in alternative education “are especially concerned by the rate at which students with disabilities leave school without acquiring a high school diploma”). And the reverse direction also holds true.

In relation to the explicability-inexplicability principle, if there is explicability (e.g., the explanation by the proponents of alternative education that it is better than traditional education because of some fundamental differences in the philosophy of education), there is inexplicability (e.g., the lack of sufficient explanation, for the critics, of why these fundamental differences in the philosophy of education are necessarily desirable to have, as shown in the criticisms as already discussed above). And the reverse direction also holds true.

In relation to the preciseness-vagueness principle, if there is preciseness (e.g., the precise identification of the four major categories of alternative education), there is vagueness (e.g., the vagueness in the identification, since it is not clear why there are only four major categories, or to what extent there are “grey areas” too, as pointed out by the critics). And the reverse direction also holds true.

In relation to the simpleness-complicatedness principle, if there is simpleness (e.g., the relatively simple analysis of alternative education by its proponents), there is complicatedness (e.g., the relatively more complicated analysis of alternative education, by the critics who question its assumptions and claims, as shown in the criticisms). And the reverse direction also holds true.

In relation to the openness-hiddenness principle, if there is openness (e.g., the open exploration of alternative education which is more effective

and more desirable), there is hiddenness (e.g., the hidden bias in alternative education, because of its democratic ideology, to the point that its pitfalls are downgraded). And the reverse direction also holds true.

In relation to the denseness-emptiness principle, if there is denseness (e.g., the relatively denser concentration of alternative schools in modern times), there is emptiness (e.g., the relatively dense, or more empty, concentration of alternative schools in antiquity). And the reverse direction also holds true.

In relation to the slowness-quickness principle, if there is slowness (e.g., the relatively slower speed of those children in Japan who “avoid school environment” to learn if put in a formal school system), there is quickness (e.g., the relatively faster speed of those children in Japan who join Free School to learn in an alternative way, without the traditional school environment). (WK 2010gg) And the reverse direction also holds true.

In relation to the expansion-contraction principle, if there is expansion (e.g., the relatively more developed ability of children in unschooling to learn by themselves), there is contraction (e.g., the relatively less developed ability of children in unschooling to learn with others). And the reverse direction also holds true.

In relation to the theory-praxis principle, if there is theory (e.g., the theoretical construction of alternative education by Johann Heinrich Pestalozzi, Amos Bronson Alcott, Ralph Waldo Emerson, Henry David Thoreau, John Dewey, etc.), there is praxis (e.g., the practical application of alternative education for different forms of alternative schools in Japan, the U.K., the U.S., India, etc.). And the reverse direction also holds true.

In relation to the convention-novelty principle, if there is convention (e.g., the conventional wisdom about traditional education), there is novelty (e.g., the alternative novel challenge to the conventional wisdom about traditional education, by the proponents of alternative education for different modern forms of alternative school programs). And the reverse direction also holds true.

In relation to the evolution-transformation principle, if there is evolution (e.g., the natural evolution of humans to learn in the state of nature in groups like bands, clans, etc.), there is transformation (e.g., the technical transformation of human learning by the invention of different modern forms of alternative education). And the reverse direction also holds true.

In relation to the symmetry-asymmetry principle, if there is symmetry (e.g., the co-existence of different forms of alternative education), there is asymmetry (e.g., the appropriateness of alternative schools for those with

disabilities—but the popularity of public school choice options for those students attracted “to particular themes, such as performing arts”). And the reverse direction also holds true.

In relation to the softness-hardness principle, if there is softness (e.g., students playing with each other in schools), there is hardness (e.g., students fighting with each other in schools, especially when bigger ones bully the smaller ones). And the reverse direction also holds true.

In relation to the regression-progression principle, if there is regression (e.g., the regression made by alternative education, as shown in the criticisms by the critics), there is progression (e.g., the progress made by alternative education for different students with different needs). And the reverse direction also holds true.

And in relation to the same-difference principle, if there is similarity in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of conventional education or by way of alternative education), there is difference in outcome (e.g., the contribution to the molding and control of beliefs, values, and behaviors, by way of conventional education for a more conservative lifeworld—but the contribution to the molding and control of beliefs, values, and behaviors, by way of alternative education for a more radical or non-traditional lifeworld). And the reverse direction also holds true.

The Costs of Learning

This comprehensive analysis of the possibility and desirability of learning, from the perspectives of the mind, nature, society, and culture, is vital for understanding the different ways in which learning is both possible and desirable, but not to the extent that the spokespersons from each side would like us to believe.

Learning thus has its benefits, just as it has its costs too, as another side of the same coin—just as, if teaching has its brightness, it has its darkness too.

These dual analyses are important, because those on the side of teaching often treat learning merely as the receiving end of education without really valuing it from the vantage point of learning too—just as those on the side of learning often regard teaching solely as the giving end of education, without really appreciating it from the vantage point of teaching too.

Now that this intellectual journey has come to an end, what then can be concluded?

This is the topic to which we now turn, in the next chapter for the future of education.

Table 3.1. Learning and Its Ambivalence

• Learning and the Mind

- Ex: giftedness, and the complicatedness of learning
- Ex: learning styles, and the dissension about educating methods

• Learning and Nature

- Ex: wilderness, practice, and the question about learning

• Learning and Society

- Ex: learning, and the role of educational technologies
- Ex: learning aspirations, and the sociology of education

• Learning and Culture

- Ex: culture, learning styles, and the contention on diversity
- Ex: alternative education, and the impact of different traditions

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: A summary of Ch.3 of *FPHEDU*

**Table 3.2. Giftedness, and the Dispute on Learning
(Part I)**

• **Definition of Giftedness**

—In accordance with Renzulli’s definition, “giftedness” refers to “gifted behaviors rather than gifted individuals” and “is composed of three components,” that is, (a) “above average ability,” (b) “high levels of task commitment,” and (c) “high levels of creativity.” (WK 2010y)

• **General Characteristics of Giftedness**

—Firstly, “gifted individuals learn more quickly, deeply, and broadly than their peers.” (WK 2010y)

—Secondly, a person may be gifted in one area but may not be so in another. (WK 2010y)

—And thirdly, “[m]any gifted individuals experience various types of heightened awareness and may seem overly sensitive. These sensitivities may be to physical senses such as sight, sound, smell, movement and touch. (WK 2010y)

• **Problems with Identification Methods**

—Firstly, “IQ scores can vary for the same person, so a person does not always belong to the same IQ score range each time the person is tested.” (WK 2010y)

—Secondly, “IQ test classifications vary from one publisher to another.” (WK 2010y; C. Perleth 2000)

—Thirdly, “[t]he IQ assessment of younger children remains debated. Also, those who are more gifted in areas such as the arts and literature tend to do poorly on IQ tests, which are generally verbal- and mathematical-skills related.” (WK 2010y)

—And fourthly, “other researchers (e.g., Cattell, Guilford, and Thurstone) have argued that intellect cannot be expressed in such a unitary manner, and have suggested more multifaceted approaches to intelligence.” (WK 2010y)

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**Table 3.2. Giftedness, and the Dispute on Learning
(Part II)**

• **The Giftedness Gap among Different Ethnic/Racial Groups**

—For instance, in America, “statistics from 1993 indicate that in the U.S., Black students represented 16.2% of public school students, but only constituted 8.4% of students enrolled in gifted education programs. Similarly, while Hispanic students represented 9% of public school students, these students only represented 4.7% of those identified as gifted. However, Asian students make up only 3.6% of the student body, yet constitute 14% in the gifted programs.” (WK 2010y; L. Taylor 2003; D. Ford 2003)

• **Social and Emotional Problems of Gifted Individuals**

- Ex: isolation
- Ex: perfectionism
- Ex: underachievement
- Ex: depression

• **The Heated Debate**

- The Nature Argument
- The Nurture Argument

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.2.1* of *FPHEDU*. See book for citations.

Table 3.3. Learning Styles, and Their Controversy

• Models of Learning Styles

- Ex: David Kolb's model
- Ex: Honey and Mumford's model
- Ex: Anthony Gregorc's model
- Ex: Sudbury model of democratic education
- Ex: Fleming's VAK/VARK model

• Criticisms of Learning Styles

- Firstly, one criticism of the models of learning styles is that “[s]ome psychologists and neuroscientists have questioned the scientific basis for and the theories on which they are based. According to Susan Greenfield the practice is 'nonsense' from a neuroscientific point of view,” since she wrote: “Humans have evolved to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain.” (WK 2010z; J. Henry 2007)
- Secondly, another criticism of the models of learning styles is that, for “[m]any educational psychologists...there is little evidence for the efficacy of most learning style models, and furthermore,...the models often rest on dubious theoretical grounds.” (WK 2010z)
- And thirdly, still another criticism of the models of learning styles is that they often exaggerate their claims and are narrow in their viewpoints.

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.2.2 of FPHEdu*. See book for citations.

Table 3.4. Educational Technologies, and the Contention on Learning

• Theories of Educational Technologies

- Ex: behaviorism
- Ex: cognitivism
- Ex: constructivism
- Ex: connectivism

• Benefits of Educational Technologies

- Ex: “easy-to-access course materials” (WK 2010aa; NSBA 2010)
- Ex: “student motivation” (WK 2010aa; C. Whyte 1980 & 1989)
- Ex: “wide participation” (WK 2010aa; NSBA 2010a)
- Ex: “improved student writing” (WK 2010aa; NSBA 2010)
- Ex: “subjects made easier to learn”
- Ex: “a structure more amenable to measurement and improvement of outcomes”

• Criticisms of Educational Technologies

- Firstly, one major criticism of educational technologies is that good training is required, which is not often materialized.
- Secondly, another major criticism of educational technologies is that they do not work well “when access to a sufficient quantity of a resource is limited.” (WK 2010aa)
- Thirdly, still another major criticism of educational technologies is that it is “time-consuming” to master them. (WK 2010aa)
- And fourthly, still one more major criticism of educational technologies is that it can be “inconvenient” to use them.

Notes: The examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.4.1* of *FPHEDU*. See book for more details and citations.

**Table 3.5. Culture, Learning Styles, and the Debate on Diversity
(Part I)**

• **The Issues of Learning Styles**

- Ex: perception
- Ex: conception
- Ex: affect
- Ex: behavior

• **The Issues of Culture**

—For instance, “culture and learning are connected in important ways. Early life experiences and the values of a person's culture affect both the expectations and the processes of learning. If this relationship is true, could we then assume that students who share cultural characteristics have common ways of learning? Does culture create a way of learning, and how would we know this? Do African American students have similar ways of learning? Do girls learn differently than boys? These questions are both important and controversial.” (P. Guild 2001)

• **Criticisms against the Political Correctness of Diversity**

- Firstly, one major problem with the political correctness of diversity in education is that it is not quite consistent.
- Secondly, another major problem with the political correctness of diversity in education is that our neurobiological makeup often work in unison, so the discourse on different learning styles in perception and other categories has little scientific basis (as already elaborated in *Sec. 3.2.2*).
- Thirdly, still another major problem with the political correctness of diversity in education is that its proponents like the author of the article under discussion here (Pat Guild) often use a lot of generalizations themselves like different learning styles and cultural traditions (which they do not quite question) for their own purpose but are quick to question the generalizations of others whenever these do not support what they advocate and dismissively call them stereotypes.

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**Table 3.5. Culture, Learning Styles, and the Debate on Diversity
(Part II)**

• **Criticisms against the Political Correctness of Diversity (*cont'd*)**

- Fourthly, one more major problem with the political correctness of diversity in education is that not all learning styles are created equal. Some learning styles, like those by black students in America who do not do well academically in school, are less equal than those by white and Asian students who do well academically.
- And fifthly, still another major problem with the political correctness of diversity in education is that its proponents like the author of the article under discussion here (Pat Guild) is driven by an ideological bent for equality in education.

Notes: The examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.5.1* of *FPHEDU*. See book for more details and citations.

Table 3.6. Alternative Education, and Its Problems

• Modern Forms of Alternative Education

- Ex: school choice
- Ex: alternative school
- Ex: independent school
- Ex: home-based education

• Problems in Alternative Education

- Firstly, one major problem in alternative education is that the four categories are not so clear-cut as they may sound.
- Secondly, another major problem in alternative education is that they are not necessarily more effective than traditional or conventional schools.
- Thirdly, still another major problem in alternative education is that it is not clear if they are desirable to have in the first place—other than being something different.
- And fourthly, one more major problem in alternative education is that it can become extreme, and the problems with unschooling are worth telling.

Notes: The examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Source: From *Sec. 3.5.2* of *FPHEDU*. See book for more details and citations.

• PART FOUR •

Conclusion

CHAPTER 4

CONCLUSION—THE FUTURE OF EDUCATION

It is possible to store the mind with a million facts and still be entirely uneducated.

—Alec Bourne (WK 2010hh)

Beyond Teaching and Learning

The analyses of teaching (in Chapter Two) and learning (in Chapter Three) have the scholarly virtue to show the extent of their possibility and desirability in education.

These analyses are important enough, in light of the opposing views on the nature of education (as already described in *Sec. 1.1*). In other words, contrary to the two opposing sides (and other views as already discussed in the book), the value of formal education (on one side of the debate) and the importance of informal education (on the other side of the same fence) are neither possible nor desirable to the extent that their respective ideologues would like us to believe.

Of course, one should not erroneously treat this challenge to the contrastive versions of the conventional wisdom on the future of education (and other views as already analyzed in this book) as a suggestion that education is an useless endeavor, or that some fields of study (related to education) like philosophy, psychology, sociology, or even culture studies are to be dismissed. Surely, neither of these extreme views is reasonable either.

Instead, this book provides an alternative (better) way to understand the future of education, especially in the dialectic context of teaching and learning—while learning from different approaches in the literature but without favoring any one of them (nor integrating them, since they are not necessarily compatible with each other).

Thus, this book offers a new theory (that is, *the heterodox theory of education*) to go beyond the existing approaches in the literature on education in a new way not conceived before.

My argument is “heterodox” (as already described in *Sec. 1.4*). because it provides an unconventional way to understand education, and my heterodox theory of education has four distinctive features to remember.

Firstly, my theory makes good use of all theoretical approaches in the literature on education, be they about the teacher-centered argument, the student-centered argument, or the balanced argument—especially from the most comprehensive combined perspectives of the mind, nature, society, and culture (as will be clear in Chapter Two and Chapter Three).

Secondly, just like many other theories of mine in my previous books, my theory here does not heavily favor any specific theory over others in the literature, nor trying to integrate them (as they are not necessarily compatible with each other).

Thirdly, my theory treats the issue of education in the distinctive dialectic context of teaching and learning—especially in the larger dialectic context of no teaching without learning (or differently put, no teacher-centeredness without student-centeredness), and vice versa, together with the subsequent transcendence of both.

And fourthly, it contains sixteen major theses, namely, (a) the first thesis: the absoluteness-relativeness principle, (b) the second thesis: the predictability-unpredictability principle, (c) the third thesis: the explicability-inexplicability principle, (d) the fourth thesis: the preciseness-vagueness principle, (e) the fifth thesis: the simpleness-complicatedness principle, (f) the sixth thesis: the openness-hiddenness principle, (g) the seventh thesis: the denseness-emptiness principle, (h) the eighth thesis: the slowness-quickness principle, (i) the ninth thesis: the expansion-contraction principle, (j) the tenth thesis: the convention-novelty principle, (k) the eleventh thesis: the evolution-transformation principle, (l) the twelfth thesis: the symmetry-asymmetry principle, (m) the thirteenth thesis: the softness-hardness principle, (n) the fourteenth thesis: the regression-progression principle, (o) the fifteenth thesis: the sameness-difference principle, and (p) the sixteenth thesis: the post-human rebellion—to be elaborated in the rest of the book, with a summary in the concluding chapter.

Of course, as this is something that I often emphasized in my previous books, other principles (besides the 15 as cited above) are also relevant, but these 15 are the most relevant in the current case study (in terms of the number of citations of each principle in the book).

Even then, in some cases, the difference between any two given principles, for instance, in terms of the number of citations in a book, is rather small, so the reason in those cases is more aesthetic (than otherwise), because it looks nicer to list only 15 theses for 15 principles (than 21 theses for all of the 21 principles) in the Table of Contents.

This is true, even if different studies of the same kind can yield different views about the degree of relevance for each principle, depending on the specific nature of a research in question, needless to say. So, if a different author analyzes the same subject matter in a different way, the relevance of the principles will be different.

With this clarification in mind—the seminal project here, if successful, will fundamentally change the way that we think about education, from the combined perspectives of the mind, nature, society, and culture, with enormous implications for the human future and what I originally called its “post-human” fate.

In the Category of Method

Firstly, in regard to the formalness-informalness principle (on the formal requirements of logical systems), if there is formalness (e.g., the formal logical requirement of completeness and soundness for a system of ideas, as in maieutics, in *Sec. 2.2.1*; the formal logical requirement of completeness and soundness for a system of ideas, as in science, in *Sec. 2.2.2*; the formal logical requirement of completeness for a system of ideas, as in science, in *Sec. 2.3.1*; formal logical requirement of soundness for a system of ideas, as in the claims by NCLB, in *Sec. 2.4.1*; the formal logical requirement of soundness for a system of ideas, as in the alleged legitimate compilation of the Great Books, in *Sec. 2.5.1*; the formal logical requirement of completeness for a system of ideas, as in the Platonic philosophy of education, in *Sec. 2.5.2*; the formal logical requirement of soundness for a system of ideas, as in identification methods in regard to IQ, in *Sec. 3.2.1*; the formal logical requirement of completeness and soundness for a system of ideas, as in “anthropocentrism,” in *Sec. 3.3.1*; the formal logical requirement of soundness for a system of ideas, as in the worldview of “middle-class society,” in *Sec. 3.4.2*; and the formal logical requirement of consistency for a system of ideas, as in the discourse on diversity in education, in *Sec. 3.5.1*), there is informalness too (e.g., the nonformal allowance of religious dogma in maieutics without any proof that it is true, in *Sec. 2.2.1*; the nonformal existence of “little empirical evidence to support it [Gardner’s MI theory],” in *Sec. 2.2.2*; the nonformal nature of science itself, since its philosophical foundation cannot be falsified either, as already explained in *FHC*, in *Sec. 2.3.1*; the nonformal

nature of the claims by NCLB, since the critics reject the claims as false, misleading, exaggerating, and something along that, in *Sec. 2.4.1*; the nonformal nature of certain illegitimacy in a compilation of the Great Books, because of the central dilemma that any “hierarchical ranking of books,...as it were valid,...would argue against any set of required readings whatever,” since “any list you care to make about anything automatically creates two categories, those that are on the list and those that are not,” which causes disagreements among different groups, in *Sec. 2.5.1*; the nonformal nature of the Platonic philosophy of education, since it is yet to completely prove the validity of its extreme methods of education of “removing children from their mothers’ care and raising them as wards of the state” and its collective goal that “the individual was best served by being subordinated to a just society,” for example, in *Sec. 2.5.2*; the nonformal nature of identification methods in regard to IQ, as the critics have raised “serious questions regarding the appropriate uses and limits of such testing,” in *Sec. 3.2.1*; the nonformal nature of “anthropocentrism,” as the critics have revealed its unwarranted exclusion of “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition,” in *Sec. 3.3.1*; the nonformal nature of the worldview of “middle-class society,” since, for the critics, “[m]any teachers assume that students will have particular middle class experiences at home, and for some children this assumption isn’t necessarily true,” in *Sec. 3.4.2*; and the nonformal nature of inconsistency in the discourse on diversity in education, as its proponents insist that, on the one hand, cultural differences among different ethnic/racial groups and genders yield different learning styles and that such diversity should be respected, but, on the other hand, they do not accept different negative learning outcomes due to these differences in learning styles, in *Sec. 3.5.1*). And the reverse direction also holds true.

And secondly, in regard to the partiality-totality principle (on the relationships between whole and parts), if there is partial analysis (e.g., the partial view of each system of education as the best on the basis of its own rationales, in *Sec. 2.5.2*; and the partial view of the proponents of “anthropocentrism” for a narrow understanding of value rationality detached from nature, in *Sec. 3.3.1*), there is also holistic analysis (e.g., the more holistic view of all systems of education, such that the whole is not the sum of its parts, in that there is no one-size-fits-all system of education which is consistent with all of the individual ones, in *Sec. 2.5.2*; and the more holistic view of integrating “our animal, biological and even evolutionary roots” with the rest of nature, such that the whole is not just

the sum of all narrow anthropocentric perspectives about reality, in *Sec. 3.3.1*). And the reverse direction also holds true.

In the Category of Structure

Firstly, in regard to the finiteness-transfiniteness principle (on the nature of numbers), if there is finiteness (e.g., the finite number of species into which animals can be classified in evolutionary theory, as shown in the publication in 1758 of *Systema Naturae* by Carolus Linnaeus, in *Sec. 2.3.1*; the finite number of claims made by the proponents of NCLB, in *Sec. 2.4.1*; and the finite number of places that an individual can possibly visit for wilderness in his lifetime, in *Sec. 3.3.1*), there is also transfiniteness (e.g., the amazing transfinite number of all the animals which have ever existed on Earth, in *Sec. 2.3.1*; the transfinite number of “too many variables and...too many scenarios,” such that the outcome is far from being certain, as pointed out by Superintendent Joe Morton, in *Sec. 2.4.1*; and the transfinite number of things in nature, so that “[m]any of us...know how land and sky can bring us to a deep sense of awe and wonder at the nature of things,” in *Sec. 3.3.1*). And the reverse direction also holds true.

In the Category of Process

Firstly, in regard to the change-constancy principle (on the alteration of things), if there is change (e.g., the different changes brought about by NCLB in teaching, like the focus on test results, in *Sec. 2.4.1*; the ever changing list of books which have been the most influential in Western culture, depending on a compilation in question, in *Sec. 2.5.1*; and the ever changing systems of education in the history of education, in *Sec. 2.5.2*), there is constancy too (e.g., the ever constancy of problems in education for those who do not perform well, with or without NCLB, in *Sec. 2.4.1*; the ever constancy of the search for good books which have been the most influential in culture, whether Western or not, in *Sec. 2.5.1*; and the ever constancy of dealing with the challenge of teaching and learning in education, regardless of the numerous changes over time, in *Sec. 2.5.2*). And the reverse direction also holds true

And secondly, in relation to the order-chaos principle (on the pattern of things), if there is order (e.g., the attempt by Confucius to restore “the ordered society of earlier times” in his system of education, in *Sec. 2.5.2*), there is chaos too (e.g., the concern by Confucius with “the times of division, chaos, and endless wars between feudal states” in ancient China, in *Sec. 2.5.2*). And the reverse direction also holds true.

In the Category of Agency

Firstly, in regard to the softness-hardness principle (on the force of change), on the one hand, there is softness (e.g., the success of students who follow the school system well, with the rewards like “high grades and high test scores” and “accolades from their teachers,” in *Sec. 2.2.2*; the constitutional support of evolutionary theory to be taught in public schools in the United States, in *Sec. 2.3.1*; the “incentives” under NCLB for the compliance with the requirement of standardized tests, in *Sec. 2.4.1*; the approval of some books to be part of university reading lists, in *Sec. 2.5.1*; the reward for students who do well in schools, in *Sec. 2.5.2*; “parents are usually proud and will praise extensively the gifted child,” in *Sec. 3.2.1*; the encouragement, in VARK learning styles, of children to pick and choose the four areas of learning, in *Sec. 3.2.2*; the relative inclusion of “anthropocentrism” in the modern West, in *Sec. 3.3.1*; the use of positive reinforcement, in *Sec. 3.4.1*; the domination by indoctrination, like “the hidden curriculum” in the sociology of education, in *Sec. 3.4.2*; the praise of those who do well academically in school, in *Sec. 3.5.1*; and students playing with each other in schools, in *Sec. 3.5.2*).

On the other hand, there is also its hardness (e.g., the failure of students who do not follow the school system well, with the forms of punishment like low grades, low test scores, and the lack of accolades from their teachers, in *Sec. 2.2.2*; the negative sanctions against public schools in the United States if creation theory is to be taught, in *Sec. 2.3.1*; the “penalties” under NCLB against any refusal to comply with the requirement of standardized tests, in *Sec. 2.4.1*; the disapproval of some other books to not be part of university reading lists, in *Sec. 2.5.1*; the punishment of students who do badly in schools, in *Sec. 2.5.2*; “siblings, comrades and school bullies will generally become jealous of the intellectual ease of the gifted child and tease him or her about any minor imperfection in his work, strength, clothes, appearance, or behavior,” in *Sec. 3.2.1*; the “tendency to label children and therefore restrict learning” in VARK learning styles, as pointed out by Guy Claxton, in *Sec. 3.2.2*; the relative exclusion of “other more experientially embodied aspects of human nature” in the modern West, in *Sec. 3.3.1*; the use of negative reinforcement, in *Sec. 3.4.1*; the domination by force, like the colonialization of the Non-West by the West in modern times, in *Sec. 3.4.2*; the disrespect of those who do not do well academically in school, in *Sec. 3.5.1*; and students fighting with each other in schools, especially when bigger ones bully the smaller ones, in *Sec. 3.5.2*).

And the reverse direction also holds true.

1st Thesis: The Absoluteness-Relativeness Principle

The first thesis refers to the absoluteness-relativeness principle (on the multiplicity of things) in the category of “method” in existential dialectics, which was first proposed in *FPHK*, in that there is the multiplicity of things in reality, be they about entities, qualities (or properties), and relationships. If there is something absolute, there is likewise something relative. And there is no absoluteness without relativeness—and vice versa.

Both absoluteness and relativeness here are also relevant to different modalities often cited in the literature on ontology, such as possibility (e.g., something “can” happen) and its opposite (e.g., impossibility), probability (e.g., something “will” happen) and its opposite (e.g., improbability), and necessity (e.g., something “should” happen) and its opposite (e.g., contingency).

For instance, on the one hand, there are absolute viewpoints (e.g., the absolute view of those who hold prejudices in a Socratic dialogue, like Theaetetus about the nature of knowledge in his conversation with Socrates, in *Sec. 2.2.1*; the absolute view in the traditional school system that it can test whether or not, or to what extent, the students learn from their teacher with some scholastic tests, in *Sec. 2.2.2*; the absolute view of science by the “National Science Education standards” that creationism is not accepted as a “legitimate scholarship” in school, in *Sec. 2.3.1*; the absolute view of the proponents of NCLB, in that “setting high standards and establishing measurable goals can improve individual outcomes in education,” in *Sec. 2.4.1*; the absolute view of Allan Bloom in his defense of Great books, in *Sec. 2.5.1*; the absolute view of the Gurukul school of education, where “the teacher imparted knowledge of Religion, Scriptures, Philosophy, Literature, Warfare, Statecraft, Medicine, Astrology and History,” in *Sec. 2.5.2*; the absolute view in the early days of research on giftedness in the 20th century, when “psychometricians and psychologists, following in the footsteps of Lewis Terman in 1916, equated giftedness with high IQ,” in *Sec. 3.2.1*; the absolute view of the Sudbury model, in that there are many ways to learn “without the intervention of teaching, to say, without the intervention of a teacher being imperative,” in *Sec. 3.2.2*; the absolute view of the value rationality of “anthropocentrism” by its proponents, in *Sec. 3.3.1*; the absolute view of “radical behaviorism” by Skinner, in treating human behavior on the basis of some schedules of “reinforcement” without the need to understand the inner workings of the

human mind, in *Sec. 3.4.1*; the absolute view of conflict theorists in regard to the “societal confidence trick” in the sociology of education, in *Sec. 3.4.2*; the absolute view of Guild, in that “all students can be successful learners,” in *Sec. 3.5.1*; and the absolute view by the proponents of unschooling in encouraging the “exploration of activities led by the children themselves,” in *Sec. 3.5.2*).

On the other hand, there are likewise relative counterparts (e.g., what is true for Theaetetus about the nature of knowledge, as in the three definitions of knowledge as “a perception,” “a true opinion,” and “an explanation besides a true opinion,” is not so for Socrates who refuted them, in *Sec. 2.2.1*; what is true for the traditional school system in regard to the validity of scholastic tests is not necessarily so for Gardner, who questioned their validity and effectiveness, in *Sec. 2.2.2*; what is true for science about dismissing creationism as not “legitimate scholarship” in school in accordance to the “National Science Education standards” is not necessarily so for the creationists, who beg to differ, in *Sec. 2.3.1*; what is true for the claims by the proponents of NCLB is not necessarily so for the criticisms by the opponents of NCLB, in *Sec. 2.4.1*; what is true for Allan Bloom in regard to the Great Books is not so for the critics, who reject them as the works of “dead white European males,” in *Sec. 2.5.1*; what is good for the Gurukul school of education is not necessarily so for the Summerhill school of education, which is more student-centered, in *Sec. 2.5.2*; what was true for Terman in 1916 about giftedness and high IQ is not necessarily so for researchers in 2000’s, when “IQ scores are often viewed as inadequate measures of giftedness,” in *Sec. 3.2.1*; what is true for the Sudbury model in regard to learning without the intervention of a teacher is not necessarily so for the critics, who question its claims and assumptions, in *Sec. 3.2.2*; what is good for the proponents of “anthropocentrism” is not necessarily so for those at the EcoDharma Center for a more holistic spiritual practice, in *Sec. 3.3.1*; what is true for Skinner in regard to his behaviorist view of the mind is not so for Chomsky in regard to his cognitivist view of the mind, in *Sec. 3.4.1*; what is true for conflict theorists in regard to the “societal confidence trick” in the sociology of education is not so for the critics, since “[t]his perspective has been criticised as deterministic, pessimistic and allowing no room for the agency of individuals to improve their situation,” in *Sec. 3.4.2*; what is true for Guild about the belief that “all students can be successful learners” is not necessarily so for the critics, who question her claim, in that not all learning styles are created equal, in *Sec. 3.5.1*; and what is good for the proponents of unschooling in regard to the encouragement of the “exploration of activities led by the children themselves” is not necessarily

so for the proponents of traditional education in regard to the need for the control by a teacher, in *Sec. 3.5.2*).

And the reverse direction also holds true.

However, it should be stressed (as this is something that I regularly did in my previous books, *almost verbatim*) that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are uniformity-diversity, internalness-externalness, immanence-transcendence, and so forth.

2nd Thesis: The Predictability-Unpredictability Principle

The second thesis is called the predictability-unpredictability principle (on the occurrence of events) in the category of “method” in existential dialectics (which was first proposed in *FC* and, later, other books of mine), in that both predictability and unpredictability have a major role to play in the occurrence of things, so that neither determinism nor indeterminism wins the centuries-old fight. There is no predictability without unpredictability—and vice versa.

There are events which are predictable, just as there are those which are not. Or what is regarded as unpredictable at one point in time may turn out to be predictable later, and, conversely, what is deemed as predictable may turn out to not be so predictable. Even in predictability, outcomes are subject to uncertainty, the degree of which varies from case to case.

For instance, on the one hand, there is predictability (e.g., the predictable tendency of cross-examination in a Socratic dialogue, in *Sec. 2.2.1*; the predictable tendency of successful students in schools to have “faithful attendance at good schools, high grades and high test scores, accolades from their teachers,” and the like, in *Sec. 2.2.2*; the predictable tendency in American public schools to teach evolutionary theory, in *Sec.2.3.1*; the predictable tendency of schools under NCLB to focus on “standardized testing,” in *Sec. 2.4.1*; the predictable tendency of the

proponents of the Western canon to search for “a canon of books...that has been the most influential in shaping Western culture,” in *Sec. 2.5.1*; the predictable tendency of ancient systems of education to be more teacher-centered, in general, in *Sec. 2.5.2*; the predictable tendency of IQ tests to determine whether or not someone is gifted or not, in *Sec. 3.2.1*; the predictable tendency of the proponents of VAK/VARK model that it is effective for learning, in *Sec. 3.2.2*; the predictable tendency of the practitioners at the EcoDharma Center to be highly appreciative of Deep Ecology, in *Sec. 3.3.1*; the predictable tendency of those in connectionism to model the human mind like a machine with neural networks, in *Sec. 3.4.1*; the predictable tendency of an educational system, in which “few teachers deviate from the traditional curriculum, and the curriculum conveys what constitutes knowledge as determined by the state—and those in power,” in *Sec. 3.4.2*; the predictable tendency of the proponents of diversity in education like Guild to advocate different learning styles for everyone, in *Sec. 3.5.1*; and the predictable tendency of students with disabilities to join alternative schools, in *Sec. 3.5.2*).

On the other hand, there is unpredictability (e.g., the more difficult task to predict the exact outcome of a Socratic dialogue, since it can end in a refutation, in an aporia, in a state of uncertainty with no clear answer, or else, in *Sec. 2.2.1*; the more difficult task to predict to what extent these successful students in school will also be able “to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested,” as Gardner critically pointed out, in *Sec. 2.2.2*; the more difficult task to predict which particular aspects of evolutionary theory will be accepted in a particular historical era, because, for instance, Stephen Jay Gould questioned in the 20th century about the process of evolution itself, when he wrote that “the extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology,” in *Sec. 2.3.1*; the more difficult task to predict the particular responses of individual schools to the focus on “standardized testing” under NCLB, as revealed in the numerous creative ways to manipulate the requirements that the critics had pointed out, in *Sec. 2.4.1*; the more difficult task to predict which particular classification is accepted as representative of the Western canon in any future historical era, since there has been the endless debate about it, in *Sec. 2.5.1*; the more difficult task to predict exactly if or to what extent the future systems of education will or will not be teacher-centered too, given the rise and fall of different systems of education in history, in *Sec. 2.5.2*; the more difficult task to predict exactly a person “among levels of giftedness,” in *Sec. 3.2.1*; the more difficult task to predict exactly to what extent a particular instance of

using the VAK/VARK model is effective, because the critic, Guy Claxton, “has questioned the extent that learning styles such as VARK are helpful, particularly as they can have a tendency to label children and therefore restrict learning,” in *Sec. 3.2.2*; the more difficult task to predict exactly the extent to which a life of immersion with non-human nature will be life-affirming, as Nietzsche already made a devastating critique of its life-denying consequences, in *Sec. 3.3.1*; the more difficult task to predict exactly how the mind works in a given point in time, since, for the critics, there are emergent phenomena which are not exactly predictable, in *Sec. 3.4.1*; the more difficult task to predict exactly to what extent a particular student from the lower class will succeed, because, for “less-privileged students...fewer and fewer are to be found as one journeys through the levels of the system,” in *Sec. 3.4.2*; the more difficult task to predict exactly to what extent black students will do well academically in school even if given the learning styles that they have, since not all learning styles are created equal, as shown by the historical trend that black students have not been academically successful in school through the ages, when compared with other groups, in *Sec. 3.5.1*; and the more difficult task to predict exactly to what extent these students with disabilities will stay until they finish, without dropping out, because researchers in alternative education “are especially concerned by the rate at which students with disabilities leave school without acquiring a high school diploma,” in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are sureness-arbitrariness, and so forth.

3rd Thesis: The Explicability-Inexplicability Principle

The third thesis is called the explicability-inexplicability principle (on the underlying mechanisms of things) in the category of “method” in existential dialectics (which was proposed in *FPHU* and other books of mine), in that both explicability and inexplicability are part of the understanding of things. There is no explicability without inexplicability—and vice versa.

This principle tells us the dual nature of the research dilemma, in that, if reality can be explained in some ways, it also has its other ways which are not quite explainable, at a given point in time.

For instance, on the one hand, there is explicability (e.g., the explanation by those in the Socratic School of teaching that *aletheia* allows the student to become “master of the truth” because truth is something which is “latent” in human conscience,” in *Sec. 2.2.1*; the explanation by Gardner of “the early learning patterns” of children on the basis of being “acquired intuitively, in much the same way as a language is learned,” in *Sec. 2.2.2*; the explanation by the “National Science Education standards” in the United States that “so much evidence has been found that supports the fundamental idea of biological evolution that its occurrence is no longer questioned in science,” in *Sec. 2.3.1*; the explanation by the proponents of NCLB about its desirability, in that “setting high standards and establishing measurable goals can improve individual outcomes in education,” in *Sec. 2.4.1*; the explanation, by the proponents of the Western canon, of the importance of the Great Books, because they are “books...that has been the most influential in shaping Western culture,” in *Sec. 2.5.1*; the explanation by Paulo Freire that his system of education is better because “the teacher-student dichotomy be completely abolished,” in *Sec. 2.5.2*; the explanation by Terman that giftedness is linked with high IQ, in *Sec. 3.2.1*; the explanation, by the proponents of the models of learning styles, that they work better for learning on the basis of tailoring to the abilities of individual learners, in *Sec. 3.2.2*; the explanation, by the proponents of Nature-Based Practice and Learning, of the desirability of immersion with non-human nature on the basis of its integration with “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition,” in *Sec. 3.3.1*; the explanation by constructivists that “learners construct their own meaning...as they interact with reality or others with different perspectives,” so “the role of the teacher becomes that of a facilitator,” in *Sec. 3.4.1*; the explanation by

structural functionalists that “[s]ocial health means the same as social order, and is guaranteed when nearly everyone accepts the general moral values of their society,” in *Sec. 3.4.2*; the explanation by the proponents of diversity in education that there are different learning styles for different groups, in *Sec. 3.5.1*; and the explanation by the proponents of alternative education that it is better than traditional education because of some fundamental differences in the philosophy of education, in *Sec. 3.5.2*).

On the other hand, there is inexplicability (e.g., the lack of sufficient explanation, if viewed from the side of the critics, of why truth is necessarily “stored” or “latent in the human conscience” in the first place, in *Sec. 2.2.1*; the lack of sufficient explanation by Gardner of why it is necessarily true that “the...early learning patterns...tend to be acquired intuitively, in much the same way as a language is learned,” as shown by the critic like Sampson who offered three refutations to show that things are not so simplistic, in *Sec. 2.2.2*; the lack of sufficient explanation, if viewed within the evolutionary bias of the “National Science Education standards,” of why evolution can occur “in bursts after long periods when little change occurs—an idea known as punctuated equilibrium,” as the critics like Gould once pointed out, in *Sec. 2.3.1*; the lack of sufficient explanation by the proponents of NCLB of why these “high standards” are realistic at all, as criticized by its opponents, in *Sec. 2.4.1*; the lack of sufficient explanation, for those who are critical to the Western canon, of why it should necessarily have “the...authority...to determine what works are worth reading and teaching,” especially in this age of globalization, when the West has its fair share of cultural contingency or bias, in *Sec. 2.5.1*; the lack of sufficient explanation, according to the critics who question its assumptions and premises, of why Freire’s system of abolishing the teacher of authority is necessarily good in the first place, in *Sec. 2.5.2*; the lack of sufficient explanation by Terman of why giftedness is necessarily related to high IQ, since, for the critics, “[t]here is also artistic or creative giftedness, which may or may not be combined with intellectual giftedness,” in *Sec. 3.2.1*; the lack of sufficient explanation, by the proponents of the models of learning styles, of the scientific basis for the theories on which they are based,” according to the critics, in *Sec. 3.2.2*; the lack of sufficient explanation, for the critics, of why these “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition” are necessarily possible and desirable, in *Sec. 3.3.1*; the lack of sufficient explanation by the constructivists of the extent to which learners can really learn without the active intervention of a teacher, as the critics had pointed out that “constructivist theories are misleading or contradict known findings,” in

Sec. 3.4.1; the lack of sufficient explanation by structural functionalists of why social order so understood is necessarily good, since the critics can then ask, “Why would the working class wish to stay working class?” in *Sec. 3.4.2*; the lack of sufficient explanation by the proponents of diversity in education of why it is necessarily true that all learning styles are created equal, because, for the critics like Susan Greenfield, “the practice [of different learning styles] is 'nonsense' from a neuroscientific point of view,” since “[h]umans have evolved to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain,” in *Sec. 3.5.1*; and the lack of sufficient explanation, for the critics, of why these fundamental differences in the philosophy of education are necessarily desirable to have, as shown in the criticisms as already discussed above, in *Sec. 3.5.2*.

And the reverse direction also holds true.

Once more, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are underlyingness-regularness, causation-regularity, causation-correlation and so forth.

4th Thesis: The Preciseness-Vagueness Principle

The fourth thesis is called the preciseness-vagueness principle (on the refinement of things) in the category of “structure” in existential dialectics (which was first out worked out in *FIA*), in that both preciseness and vagueness are important, not that one is better than the other, but that both are used, in different degrees of preference, in accordance to the contextual application from the perspectives of nature, the mind, culture, and society. There is no preciseness without vagueness—and vice versa.

For instance, on the one hand, there is preciseness (e.g., the precise identification of the three phases of the Socratic School of teaching, in *Sec. 2.2.1*; the precise identification of nine forms of intelligence by Gardner, namely, “spatial, linguistic, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, naturalistic, and

existential,” in *Sec. 2.2.2*; the precise identification of the three categories of grades K-4, 5-8, and 9-12, together with the specified issues for study, in accordance to the “National Science Education standards,” in *Sec. 2.3.1*; the precise identification of “incentives and penalties” under NCLB to comply with the requirement of standardized tests, in *Sec. 2.4.1*; the precise identification of the three classifications of the Western canon, in *Sec. 2.5.1*; the precise identification of “personal and social perfections” within the framework for “a revival of the ordered society of earlier times” in the Confucian system of education, in *Sec. 2.5.2*; the precise identification, by Renzulli, of the “three basic clusters of human traits” for giftedness, in *Sec. 3.2.1*; the precise identification of “two perceptual qualities” and “two ordering abilities” in Anthony Gregorc’s model, in *Sec. 3.2.2*; the precise identification of “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition,” in *Sec. 3.3.1*; the precise identification of the differences between “instructional technology” and “educational technology” in the context of “software, hardware, as well as Internet applications and activities,” and “other systems used in the process of developing human capability,” in *Sec. 3.4.1*; the precise identification of the lower class, middle class, and upper class in the discourse on learning aspirations and the sociology of education, in *Sec. 3.4.2*; the precise identification of the four categories of learning style differences, in *Sec. 3.5.1*; and the precise identification of the four major categories of alternative education, in *Sec. 3.5.2*).

On the other hand, there is vagueness (e.g., the vagueness in the three phases, because different scholars have different interpretations about them, as shown by Michael Frede [1992] who “insists that step #4 [in elenchus above] makes nonsense of the aporetic nature of the early dialogues,” because “if any claim has shown to be true then it cannot be the case that the interlocutors are in aporia, a state where they no longer know what to say about the subject under discussion,” in *Sec. 2.2.1*; the vagueness in the identification of multiple intelligences, since it is not clear what they really are, with critical questions like “What kind of correlations exist between the intelligences, or are they completely independent?” in *Sec. 2.2.2*; the vagueness in the identification of the specific categories and issues for study, in accordance to the “National Science Education standards,” since it is not clear as to why there must be only three categories, and whether or not the specific issues like “historical perspectives” may mean different things to different educators in different historical eras, as shown by Gould’s distinctive interpretation of the process of change in evolution in terms of “punctuated equilibrium”

instead, for historical understanding, in *Sec. 2.3.1*; the vagueness in the identification, since “schools, districts, and states” have come up with creative way “to manipulate test results,” like “creative reclassification' of drop-outs...to reduce unfavorable statistics,” in *Sec. 2.4.1*; the vagueness in the three classifications of the Western canon, since it is not clear why there should be only three, or why the individual items in each classification should be in the way that they are, in *Sec. 2.5.1*; the vagueness in the identification of “personal and social perfections” in the Confucian system of education, since it is subject to different interpretations of what this might mean, as some scholars suggested that “Confucius is...a great proponent of conservatism” whereas others thought otherwise, in *Sec. 2.5.2*; the vagueness in Renzulli’s identification, since it is not clear what specific areas a gifted person can excel in, as shown by Susan K. Johnsen, who further “explains that gifted children can have “high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields,” in *Sec. 3.2.1*; the vagueness in the identification of the two perceptual qualities and abilities in Anthony Gregorc's model, since it is not clear of why the qualities and abilities are necessarily two, not three, four, etc., in *Sec. 3.2.2*; the vagueness in the identification of “emotionality, sensuality and intuition,” since those aspects can mean different things to different individuals, in *Sec. 3.3.1*; the vagueness in the identification, since, for the critics, “there is still debate on what these terms mean,” in *Sec. 3.4.1*; the vagueness in the identification of three major classes in society, since it is not clear why the classification has to be three, not four, five, six, seven, etc., in *Sec. 3.4.2*; the vagueness in the identification of the four categories, since it is not clear that they can be so neatly separated, since, for the critics like Thomas Kuhn [1962], “there is no theory-neutrality of observation in scientific research activities,” such that perception and conception, for example, are closely intertwined, in *Sec. 3.5.1*; and the vagueness in the identification, since it is not clear why there are only four major categories, or to what extent there are “grey areas” too, as pointed out by the critics, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Once more, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but

they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are clarity-ambiguity, directness-indirectness, quantitateness-qualitativeness, specificity-obscurity, describability-nondescribability, specificity-generalness, thickness-thinness, concreteness-abstractness, and the like.

5th Thesis: The Simplesness-Complicatedness Principle

The fifth thesis refers to the simplesness-complicatedness principle (on the interconnection among things) in the category of “structure” in existential dialectics (which was first worked out in *FIA*), in that both simplesness and complicatedness are vital, without favoring one over the other, and each is utilized, depending on the basis of the perspectives of nature, the mind, culture, and society. There is no simplesness without complicatedness—and vice versa.

For instance, on the one hand, there is simple analysis (e.g., the relatively simple analysis of the Socratic School of teaching in terms of the three phases, in *Sec. 2.2.1*; the relatively simple analysis of the unschooled mind by Gardner, in *Sec. 2.2.2*; the relatively simple analysis of the nature of teaching evolution in accordance to the “National Science Education standards,” in *Sec. 2.3.1*; the relatively simple analysis of NCLB by its proponents, as shown in the favorable claims, in *Sec. 2.4.1*; the relatively simple analysis of the Great Books by their proponents, in *Sec. 2.5.1*; the relatively simple view of education by Rousseau that “all children are perfectly designed organisms, ready to learn from their surroundings so as to grow into virtuous adults, but due to the malign influence of corrupt society, they often fail to do so,” in *Sec. 2.5.2*; the relatively simple view by Terman that giftedness is related to high IQ, in *Sec. 3.2.1*; the relatively simplistic claims by the proponents of the models of learning styles about their validity and effectiveness, in *Sec. 3.2.2*; the relatively simple analysis of Nature-Based Practice and Learning by its practitioners, in *Sec. 3.3.1*; the relatively simple analysis of educational technologies in terms of its benefits, in *Sec. 3.4.1*; the relatively simple analysis of the functions of education in accordance to structural functionalism, in *Sec. 3.4.2*; the relatively simple analysis of diversity in education by its proponents like Pat Guild, in *Sec. 3.5.1*; and the relatively simple analysis of alternative education by its proponents, in *Sec. 3.5.2*).

On the other hand, there is also complicated counterpart (e.g., the relatively complicated analysis of the Socratic School of teaching by questioning its claims and assumptions, as shown in the criticisms, in *Sec. 2.2.1*; the relatively complicated analysis of the unschooled mind by questioning its claims and assumptions, as shown in the criticisms by the critics, in *Sec. 2.2.2*; the relatively more complicated analysis of the nature of teaching evolution, as shown in the criticisms by the critics, in *Sec. 2.3.1*; the relatively more complicated analysis of NCLB by its enemies, as shown in the criticisms, in *Sec. 2.4.1*; the relatively more complicated analysis of the Great Books by their opponents, in *Sec. 2.5.1*; the relatively more complicated analysis of Rousseau's idea of education as romantic, according to his critics, in *Sec. 2.5.2*; the relatively more complicated analysis of giftedness in our time, when "other researchers [like Cattell, Guilford, and Thurstone]...have argued that intellect cannot be expressed in such a unitary manner, and have suggested more multifaceted approaches to intelligence," in *Sec. 3.2.1*; the relatively more complicated analysis of the models of learning styles by the critics, who question their validity and effectiveness, like the critique of Kolb's model, in that "the relationship between learning processes and knowledge is more complex than Kolb draws it," in *Sec. 3.2.2*; the relatively more complicated analysis of Nature-Based Practice and Learning by the critics who question the inherent assumptions and claims, in *Sec. 3.3.1*; the relatively more complicated analysis of educational technologies by the critics who questions its assumptions and claims, in *Sec. 3.4.1*; the relatively complicated analysis of the functions of education, by the critics like conflict theorists who question the assumptions and claims, in *Sec. 3.4.2*; the relatively complicated analysis of diversity in education by the critics who question the assumptions and claims, as shown in the criticisms, in *Sec. 3.5.1*; and the relatively more complicated analysis of alternative education, by the critics who question its assumptions and claims, as shown in the criticisms, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are inflexibility-flexibility, standardization-specialization, imperfectness-perfectness, superficiality-depth, shallowness-deepness, economicalness-elaboratedness, plainness-circumspection, onesidedness-multisidedness, and the like.

6th Thesis: The Openness-Hiddenness Principle

The sixth thesis refers to the openness-hiddenness principle (on the detection of things) in the category of “structure” in existential dialectics (which was already worked out in my previous books, especially in *FPHU*), in that reality has its hidden face, just as it is open to outside view in some other ways. There is no openness without hiddenness—and vice versa.

For instance, on the one hand, there is openness (e.g., the open exploration of prejudices in the Socratic School of teaching, in *Sec. 2.2.1*; the open exploration, by Gardner, of the possibility that “most of us, except in areas where we are expert, continue to think the way we did when we were five years of age,” in *Sec. 2.2.2*; the open exploration of the relationship between evolutionary theory and its impact on how science to be taught in school, in accordance to the “National Science Education standards,” in *Sec. 2.3.1*; the open exploration of the relationship between “high standards and...measurable goals,” on the one hand, and the improvement of “individual outcomes in education,” on the other hand, under NCLB, in *Sec. 2.4.1*; the open exploration of some good books which have been “the most influential in shaping Western culture,” in accordance to their proponents, in *Sec. 2.5.1*; the open exploration of “selecting talented candidates” on the meritocratic basis of “the Nine Rank System” in Imperial China, in *Sec. 2.5.2*; the open exploration of using IQ tests to identify giftedness, in *Sec. 3.2.1*; the open exploration of learning without the intervention of a teacher, in *Sec. 3.2.2*; the open exploration of the popular value rationality of “anthropocentrism” in modern times, in *Sec. 3.3.1*; the open exploration, by Skinner, of human behaviors on the basis of certain schedules of reinforcement, in *Sec. 3.4.1*; the open exploration of “socialization” as “the process by which the new generation learns the knowledge, attitudes and values that they will need as productive citizens,” in *Sec. 3.4.2*; the open exploration of different learning styles for successful learning, in *Sec. 3.5.1*; and the open exploration of alternative education which is more effective and more desirable, in *Sec. 3.5.2*).

On the other hand, there is also hiddenness (e.g., the hidden bias in the Socratic School of teaching because of its religious origin in Orphism, in *Sec. 2.2.1*; the hidden bias in Gardner's analysis, because of his eccentric stage theory of child development in an intuitive way, as critically pointed out by the critics, in *Sec. 2.2.2*; the hidden bias in the "National Science Education standards," because of its uncritical acceptance of science as the sole "legitimate scholarship," in *Sec. 2.3.1*; the bias in NCLB, as shown by the different negative outcomes against low-performing students and against the arts and elective subjects, for instance, in *Sec. 2.4.1*; the bias in the compilation of the Great Books, because each classification has different assumptions and criteria, which are subject to criticisms by the opponents, in *Sec. 2.5.1*; the hidden bias in "the Nine Rank System," because, "[i]n practice, however, only the rich and powerful would be selected," in *Sec. 2.5.2*; the bias in IQ tests, since "IQ scores can vary for the same person, so a person does not always belong to the same IQ score range each time the person is tested" and "IQ test classifications vary from one publisher to another," etc., in *Sec. 3.2.1*; the hidden bias in the models of learning styles, because "there is little evidence for the efficacy of most learning style models," in *Sec. 3.2.2*; the hidden bias in the popular value rationality of "anthropocentrism" because of its exclusion of "other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition," in *Sec. 3.3.1*; the hidden bias in Skinner's radical behaviorism, since, for the critics like Chomsky, "Skinner's laboratory work could not be extended to humans" and "when it was extended to humans it represented 'scientific' behavior attempting to emulate science but which was not scientific," in *Sec. 3.4.1*; the hidden bias in the formal curriculum, since "it is mainly achieved through 'the hidden curriculum,' a subtler, but nonetheless powerful, indoctrination of the norms and values of the wider society," and "students learn these values because their behaviour at school is regulated until they gradually internalise and accept them," in *Sec. 3.4.2*; the hidden bias in the discourse on different learning styles, because of its egalitarian ideological bent, in *Sec. 3.5.1*; and the hidden bias in alternative education, because of its democratic ideology, to the point that its pitfalls are downgraded, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are overtness-covertness, publicness-privateness, openness-closedness, transparency-secrecy, openness-biasedness, and so on.

7th Thesis: The Denseness-Emptiness Principle

The seventh thesis concerns the denseness-emptiness principle (on the distribution of entities in space) in the category of “structure” in existential dialectics, which is first proposed in *FPHUP*, in that both density and void are needed, in relation to the mind, nature, culture, and society, albeit in different ways. There is no denseness without emptiness—and vice versa.

Lest any misunderstanding occurs, the term “void” is used here only as an approximation of emptiness (depending on the degree of the lack of density), since, in physics, it is well known that “empty” space is not really empty all the way, because it can be full of energy (e.g., random quantum fluctuations at the sub-atomic level, and, for that matter, dark energy in the universe) and matter (e.g., different versions of sub-atomic particles, and, for that matter, dark matter in the universe). (F. Wilczek 2008)

For instance, on the one hand, there is denseness (e.g., the relatively denser concentration of those in the Socratic School of teaching who accept truth as *aletheia*, in *Sec. 2.2.1*; the relatively denser concentration of supporters of Gardner’s view about the unschooled mind to hold the view that “most of us, except in areas where we are expert, continue to think the way we did when we were five years of age,” in *Sec. 3.2.2*; the relatively denser concentration of educators in contemporary public schools to teach evolutionary theory rather than creation theory, in *Sec. 2.3.1*; the relatively denser concentration of successful students in standardized tests who benefit from NCLB, in *Sec. 2.4.1*; the relatively denser concentration of the books by “dead white European males” in the Western canon, in *Sec. 2.5.1*; the relatively denser concentration of students who benefited from education which was “at first freely available in Vedic society,” in *Sec. 2.5.2*; the relatively denser concentration of gifted students among Asian students, as “statistics from 1993 indicate that in the U.S.,... Asian students make up only 3.6% of the student body, yet constitute 14% in the gifted programs,” in *Sec. 3.2.1*; the relatively denser concentration of students who try to learn without the intervention of a teacher in the Sudbury

model, in *Sec. 3.2.2*; the relatively denser concentration of individuals who accept a more ascetic lifestyle at the EcoDharma Center, in *Sec. 3.3.1*; the relatively denser concentration of the followers of Skinner in the field of behaviorism, in *Sec. 3.4.1*; the relatively denser concentration of the “middle and especially upper-class children,” as “one journeys through the levels of the system” to the top, in *Sec. 3.4.2*; the relatively denser concentration of white students in modern America to do well academically in school, when compared with black students, in *Sec. 3.5.1*; and the relatively denser concentration of alternative schools in modern times, in *Sec. 3.5.2*).

On the other hand, there is emptiness (e.g., the relatively less dense, or more empty, concentration of those in the Socratic School of teaching who accept truth as coherency, correspondence, or pragmatics, in *Sec. 2.2.1*; the relatively less dense, or more empty, concentration of supporters of Gardner’s view if they accept Piaget’s alternative view that “children pass through stages of cognitive development,” such that they see the world in a very different way at each new stage and do not quite remember what they saw before, in *Sec. 3.2.2*; the relatively less dense, or more empty, concentration of educators in pre-modern schools to teach evolutionary theory rather than creation theory, in *Sec. 2.3.1*; the relative less dense, or more empty, concentration of black students who benefit from NCLB, in *Sec. 2.4.1*; the relatively less dense, or more empty, concentration of the books by dead white European females in the Western canon, in *Sec. 2.5.1*; the relatively less dense, or more empty, concentration of students who benefited from education which “became over time more discriminatory as the caste system, originally based on occupation, evolved, with the brahman...being the most privileged of the castes,” in *Sec. 2.5.2*; the relatively less dense, or more empty, concentration of gifted students among Black students, as “statistics from 1993 indicate that in the U.S., Black students represented 16.2% of public school students, but only constituted 8.4% of students enrolled in gifted education programs,” in *Sec. 3.2.1*; the relatively less dense, or more empty, concentration of students who try to learn without the intervention of a teacher in the Socratic method, in *Sec. 3.2.2*; the relatively less dense, or more empty, concentration of the followers of Nietzsche’s life-affirming philosophy who accept a more ascetic lifestyle, in *Sec. 3.3.1*; the relatively less dense, or more empty, concentration of the followers of Skinner in the field of cognitive science, in *Sec. 3.4.1*; the relatively less dense, or more empty, concentration of the “less-privileged children,” as “one journeys through the levels of the system” to the top, because “students from poor families have relatively little chance of securing success,” in *Sec. 3.4.2*; the

relatively less dense, or more empty, concentration of black students in modern America to do well academically in school, when compared with white students, in *Sec. 3.5.1*; and the relatively dense, or more empty, concentration of alternative schools in antiquity, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are fullness-voidness, nearness-farness, concentration-dispersion, and the like.

8th Thesis: The Slowness-Quickness Principle

The eighth thesis concerns the slowness-quickness principle (on the speed of change) in the category of “process”) in existential dialectics (which was first worked out in *FIA*), in that both slowness and quickness co-exist, with their own internal tension, to the extent that each fights for its own relevance with the other, in accordance to the perspectives of nature, the mind, culture, and society, without one being the victor and the other being the vanquished in the long haul. There is no slowness without quickness—and vice versa.

For instance, on the one hand, there is slowness (e.g., the relatively slower speed of a Socratic dialogue, if the students in question hold a lot of prejudices to be refuted by the teacher, in *Sec. 2.2.1*; the relatively slower speed of an expert in areas where he is expert to be able to continue to think the way he did when he was five years of age,” as pointed out by Gardner, in *Sec. 2.2.2*; the relatively slower speed of the process of change in nature, if taught in accordance to the traditional Darwinian evolutionary theory, in *Sec. 2.3.1*; the relatively slower speed of progress by African Americans students to do well in standardized tests, in *Sec. 2.4.1*; the relatively slower speed of a white European feminist to accept the Western canon, in *Sec. 2.5.1*; the relatively slower speed of the spread of literacy in ancient times, in *Sec. 2.5.2*; the relatively slower speed of an average, or a below-average, person to learn, in *Sec. 3.2.1*; the relatively slower speed of “convergers” to learn by “concrete experience and reflective observation,”

in *Sec. 3.2.2*; the relatively slower speed of an individual who learns by reasoning, not intuition, in *Sec. 3.3.1*; the relatively slower speed of a learner to use an educational technology when the training time is high, in *Sec. 3.4.1*; the relatively slower speed of “lower-class children” to climb up the ladder of success to the top of society, in *Sec. 3.4.2*; the relatively slower speed of black students to learn when put in an academic environment which “value independence, analytic thinking, objectivity, and accuracy,” in *Sec. 3.5.1*; and the relatively slower speed of those children in Japan who “avoid school environment” to learn if put in a formal school system, in *Sec. 3.5.2*).

On the other hand, there is quickness (e.g., the relatively faster speed of a Socratic dialogue, if the students in question are ready to accept at the outset that they are conscious of their own ignorance, just as Socrates had insisted that “he did not himself know anything,” in *Sec. 2.2.1*; the relatively quicker speed of a non-expert in areas where he is not an expert to be able to continue to think the way he did when he was five years of age,” in *Sec. 2.2.2*; the relatively faster speed of the process of change in nature, if taught in accordance to the contemporary theory of “punctuated equilibrium” as proposed by Gould, in that evolution can occur “in bursts after long periods when little change occurs,” in *Sec. 2.3.1*; the relatively faster speed of progress by students in low minority and low poverty schools to do well in standardized tests, in *Sec. 2.4.1*; the relatively faster speed of a white European patriarch to accept the Western canon, in *Sec. 2.5.1*; the relatively faster speed of the spread of literacy in modern times, especially in advanced countries, in *Sec. 2.5.2*; the relatively faster speed of a gifted person to learn, in *Sec. 3.2.1*; the relatively faster speed of “divergers” to learn by “concrete experience and reflective observation,” in *Sec. 3.2.2*; the relatively faster speed of an individual who learns by intuition, not reasoning, in *Sec. 3.3.1*; the relatively faster speed of a learner to use an educational technology well when he finishes the necessary training, in *Sec. 3.4.1*; the relatively faster speed of “upper-class children” to climb up the ladder of success to the top of society, as a way for “the continuation of privilege and wealth for the elite,” in *Sec. 3.4.2*; the relatively faster speed of white and Asian students to learn when put in an academic environment which “value independence, analytic thinking, objectivity, and accuracy,” in *Sec. 3.5.1*; and the relatively faster speed of those children in Japan who join Free School to learn in an alternative way, without the traditional school environment, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the

classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are inconvenience-convenience, passiveness-activeness, gradualness-abruptness, deceleration-acceleration, and the like.

9th Thesis: The Expansion-Contraction Principle

The ninth thesis is called the expansion-contraction principle in the category of “process” in existential dialectics, in that entities in the world can both expand in some ways and contract in other ones, as part of their nature. There is no expansion without contraction—and vice versa.

This principle, although not so explicitly called, was already used in my previous works on different topics (e.g., the theory of floating consciousness in *FCD* and *FPHC*, the union of the unions in *BWT*, and the cyclical progression of system fragmentation and integration in *FCD*).

For instance, on the one hand, there is expansion (e.g., “the Socratic method is widely used in contemporary legal education by most law schools in the United States,” in *Sec. 2.2.1*; the relatively more developed ability of someone who accepts Gardner’s idea of the unschooled mind to think more like an artist, not just like a scientist, in relation to child development, in *Sec. 2.2.2*; the relative expansion of the influence of evolutionary theory in modern public schools, in *Sec. 2.3.1*; the relative expansion of the influence of standardized education under NCLB in the 2000’s, in *Sec. 2.4.1*; the relative expansion of the influence of the contemporary critics of the Western canon as the works of “dead white European males,” in *Sec. 2.5.1*; the relative expansion of the influence of the Confucian way of teaching, as shown by the Emperor Wudi, who, in 124 BC, “established the Imperial Academy, the curriculum of which was the Five Classics of Confucius,” in *Sec. 2.5.2*; the relatively more developed ability of a gifted person to excel, for example, “in solving logic problems and yet be a poor speller,” because “[g]iftedness is frequently not evenly distributed throughout all intellectual spheres,” in *Sec. 3.2.1*; the relatively more developed ability of students in the Sudbury model to learn without the intervention of a teacher, in *Sec. 3.2.2*; the relatively more developed ability of those who accept “anthropocentrism”

to live by value rationality, in *Sec. 3.3.1*; the relatively more developed ability of a behaviorist to understand human behavior on the basis of some schedules of reinforcement, in *Sec. 3.4.1*; the relative expansion of the influence of middle class in modern America, in *Sec. 3.4.2*; the relatively more developed ability of someone who is good in making “decisions logically, rationally, objectively, and coolly,” when compared with someone else who “decide things subjectively, focusing on their own and others' perceptions and emotions,” in *Sec. 3.5.1*; and the relatively more developed ability of children in unschooling to learn by themselves, in *Sec. 3.5.2*).

On the other hand, there is contraction (e.g., the rejection, in a relative way, of the Socratic School of teaching for those like Aristotle who “claimed that this method is not suitable for ethics” or for those like Kierkegaard who argued that “Reason cannot possibly comprehend such a phenomenon [in religion]; therefore, one can only believe in it by taking a ‘leap of faith,’” in *Sec. 2.2.1*; the relatively less developed ability of someone who accepts Gardner’s idea of the unschooled mind to think more like a hard-core scientist in relation to child development, in *Sec. 2.2.2*; the relative contraction of the influence of creation theory in modern public schools, in *Sec. 2.3.1*; the relative contraction of the influence of the arts and elective education in the 2000’s, under NCLB, in *Sec. 2.4.1*; the relative contraction of the influence of the Western canon in this age of globalization, because the word “Western” in “the Western canon” reveals its cultral bias, in *Sec. 2.5.1*; the relative contraction of the influence of the Confucian way of teaching, as shown by Chairman Mao in the modern era, who criticized the feudalistic decadence of Confucianism, in *Sec. 2.5.2*; the relatively less developed ability of the gifted person as cited above, to excel, for example, in spelling, than “in solving logic problems,” because “[g]iftedness is frequently not evenly distributed throughout all intellectual spheres,” in *Sec. 3.2.1*; the relatively less developed ability of students in the Sudbury model to learn with the intervention of a teacher, in *Sec. 3.2.2*; the relatively less developed ability of those who accept “anthropocentrism” to live by “other more experientially embodied aspects of human nature—such as emotionality, sensuality and intuition,” in *Sec. 3.3.1*; the relatively less developed ability of a behaviorist to understand human behavior on the basis of the inner workings of the mind, in *Sec. 3.4.1*; the relative contraction of the influence of the blue-blooded families in modern America, in *Sec. 3.4.2*; the relatively less developed ability of the same person to “decide things subjectively, focusing on their own and others' perceptions and emotions,” if he is better in making “decisions logically, rationally, objectively, and coolly,” in *Sec. 3.5.1*; and the

relatively less developed ability of children in unschooling to learn with others, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are conquest-autarky, rise-fall (or up-down), spread-shrink, extendingness-shorteningness, and so forth.

10th Thesis: The Theory-Praxis Principle

The tenth thesis is the theory-praxis principle (on the duality of knowledge) in the category of “agency” in existential dialectics (which was first worked out in *FPHE*), in that, if there is theoretical construction, there is likewise its practical application, both technical and normative. There is no theory without praxis—and vice versa.

For instance, on the one hand, there is theory (e.g., the theoretical construction of the Socratic method, in *Sec. 2.2.1*; the theoretical construction of multiple intelligences by Gardner, in *Sec. 2.2.2*; the theoretical construction of biological evolution as proposed by Darwin and others, in *Sec. 2.3.1*; the theoretical construction of standards-based education, in *Sec. 2.4.1*; the theoretical construction of the Western canon, in *Sec. 2.5.1*; the theoretical construction of democratic education by Neill, in *Sec. 2.5.2*; the theoretical construction of “multiple intelligences,” in *Sec. 3.2.1*; the theoretical construction of “learning styles,” in *Sec. 3.2.2*; the theoretical construction of nature-based practice and learning, in *Sec. 3.3.1*; the theoretical construction of behaviorism, in *Sec. 3.4.1*; the theoretical construction of egalitarianism, in *Sec. 3.5.1*; and the theoretical construction of alternative education by Johann Heinrich Pestalozzi, Amos Bronson Alcott, Ralph Waldo Emerson, Henry David Thoreau, John Dewey, etc., in *Sec. 3.5.2*).

On the other hand, there is praxis (e.g., the practical application of the Socratic method for legal education in contemporary America, in *Sec. 2.2.1*; the practical application of Gardner’s MI theory by “New City

School, in St. Louis, Missouri, which has been using the theory since 1988,” in *Sec. 2.2.2*; the practical application of Darwinian evolutionary theory for the understanding of science in modern public schools in America, as shown in the “National Science Education standards,” in *Sec. 2.3.1*; the practical application of standards-based education to NCLB during the Bush administration, in *Sec. 2.4.1*; the practical application of the Western canon to university reading lists as in the University of Chicago, Columbia College, St. John's College, Stanford University, Princeton University, etc., in *Sec. 2.5.1*; “many of Neill's ideas are widely accepted today” in schools, in *Sec. 2.5.2*; the practical application of “multiple intelligences” to the field of educational counseling, in that “[m]ost educational professionals accept that no single criterion can be used in isolation to accurately identify a gifted child,” in *Sec. 3.2.1*; the practical application of “learning styles” like “Honey & Mumford LSQ to...the local government sector in the UK, in *Sec. 3.2.2*; the practical application of nature-based practice and learning for a more spiritual life at the EcoDharma Center, in *Sec. 3.3.1*; the practical application of behaviorism to the field of educational technologies, in *Sec. 3.4.1*; the practical application of egalitarianism for diversity in education by the proponents like Pat Guild, in *Sec. 3.5.1*; and the practical application of alternative education for different forms of alternative schools in Japan, the U.K., the U.S., India, etc., in *Sec. 3.5.2*.

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are discovery-application, knowledge-action, invention-innovation, and so forth.

11th Thesis: The Convention-Novelty Principle

The eleventh thesis is the convention-novelty principle (on the nature of creative thinking) in the category of “agency” in existential dialectics (which was first worked out in *FPHCT*), in that, if there is conventional

wisdom, there is likewise novel challenge, to the extent that both convergent and divergent thinking are part of life. There is no convention without novelty—and vice versa.

As summarized from *FPHCT* (almost verbatim here), there are (a) “creative techniques” and (b) “creative traits,” which, when satisfied—in relation to the larger context of the mind, nature, society, and culture—can be used to enhance creative works.

In addition, creative thinking has its own possibilities and limits (in relation to invention), just as it has its own promises and pitfalls (in relation to innovation)—as already analyzed in *FPHCT*.

In the end, creative thinking has its own desirability and dark sides (as also already analyzed in *FPHCT*).

With these clarifications in mind—there are good empirical examples for the convention-novelty principle.

For instance, on the one hand, there is convention (e.g., the conventional wisdom as held by many students in their conversation with Socrates, in *Sec. 2.2.1*; the conventional wisdom by Piaget, in that “children pass through stages of cognitive development,” such that they see the world in a very different way at each new stage and do not quite remember what they saw before, in *Sec. 2.2.2*; the conventional wisdom about the teaching of nature in school, in accordance to creation theory in the older pre-modern days, in *Sec. 2.3.1*; the conventional wisdom about NCLB, as shown in the favourable claims by its proponents, in *Sec. 2.4.1*; the conventional wisdom about the Great Books to be read for a good liberal education, in *Sec. 2.5.1*; the conventional wisdom about education in Greek antiquity, as shown by “Socrates’ emphasis on questioning his listeners to bring out their own ideas,” in *Sec. 2.5.2*; the conventional wisdom about gifted students who suffer from depression, in *Sec. 3.2.1*; the conventional wisdom about students learning from their teacher, in *Sec. 3.2.2*; the conventional wisdom about “anthropocentrism” in the modern West, in *Sec. 3.3.1*; the conventional wisdom about learning on the basis of behaviorism, in *Sec. 3.4.1*; the conventional wisdom about structural functionalism in the older days of the sociology of education, in *Sec. 3.4.2*; the conventional wisdom about uniformity in education in modern times, in *Sec. 3.5.1*; and the conventional wisdom about traditional education, in *Sec. 3.5.2*).

On the other hand, there is novelty (e.g., the alternative novel challenge to the conventional views as held by the students, when Socrates refuted them with his unconventional counter-arguments, in *Sec. 2.2.1*; the alternative novel challenge to Piaget’s conventional wisdom, by Gardner’s different view that “most of us, except in areas where we are expert,

continue to think the way we did when we were five years of age,” in *Sec. 2.2.2*; the alternative novel challenge to the conventional wisdom about the teaching of nature in school, by the new way of understanding nature in accordance to the Darwinian evolutionary theory, in *Sec. 2.3.1*; the alternative novel challenge to the conventional wisdom about NCLB, by the critics who have different views about NCLB, in *Sec. 2.4.1*; the alternative novel challenge to the conventional wisdom about the Great Books, by the critics who regard those books as the works of “dead white European males,” in *Sec. 2.5.1*; the alternative novel challenge to the Socratic conventional wisdom on teaching, by Aristotle, who offered a different philosophy of education, in that “Aristotle considered human nature, habit and reason to be equally important forces to be cultivated in education” and “considered repetition to be a key tool to develop good habits,” in *Sec. 2.5.2*; the alternative novel challenge to the conventional wisdom about giftedness and depression, by other scholars like S. Reis and J. Renzulli who argued that “studies do not confirm that gifted individuals manifest significantly higher or lower rates or severity of depression than those for the general population,” in *Sec. 3.2.1*; the alternative novel challenge to the conventional wisdom about students learning from their teacher, by the Sudbury model that students can learn without the intervention of a teacher, in *Sec. 3.2.2*; the alternative novel challenge to the conventional wisdom about “anthropocentrism,” by those at the EcoDharma Center for a more spiritual life with “other more experientially embodied aspects of human nature,” in *Sec. 3.3.1*; the alternative novel challenge to the conventional wisdom about learning on the basis of behaviorism, by the new view of connectionism about learning on the basis of neural networks, in *Sec. 3.4.1*; the alternative novel challenge to the conventional wisdom about structural functionalism, by the discourse on structure and agency nowadays, in *Sec. 3.4.2*; the alternative novel challenge to the conventional wisdom about uniformity, by the proponents of diversity in education for different learning styles, in *Sec. 3.5.1*; and the alternative novel challenge to the conventional wisdom about traditional education, by the proponents of alternative education for different modern forms of alternative school programs, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are convergence-divergence (or convergent thinking vs. divergent thinking), normalness-nonnormalness, conformity-nonconformity, and so on.

12th Thesis: The Evolution-Transformation Principle

The twelfth thesis refers to the evolution-transformation principle (on the multiple kinds of agency). in the category of “agency” in existential dialectics (which was first worked out in *FAE* and then in other books of mine).

This principle—and the symmetry-asymmetry principle, for instance—are both about agency. More precisely, the word “agency,” in a formal definition, refers to “a person or thing through which power is exerted or an end is achieved.” (MWD 2007) It therefore does not have to necessarily involve an intelligent lifeform.

Because of this dual meaning in agency, the evolution-transformation principle is more concerned with *the kind of agency*, that is, both about the *evolution* in the state of nature (e.g., an object of natural beauty) and the *transformation* in the world of intelligent lifeforms (e.g., a work of art). There is no evolution without transformation—and vice versa.

In classical Darwinian evolutionary theory (as more detailedly analyzed in *BNN*), evolution is “blind.” But in the human world, change often takes place because of the conscious intervention of humans in transforming society and culture, just to cite two instances.

And the transformative part of the principle precisely refers to the other dimension in the dual meaning of agency, in giving technology (as invented by intelligent lifeforms like humans and, soon, post-humans) a major role to play in the change of the world, which is something that I extensively analyzed in *FHC* in the context of the technophilic lifeworld, especially though not exclusively since modern times.

For instance, on the one hand, there is evolution (e.g., the natural evolution of humans in the state of nature to communicate with each other in a primitive way, in *Sec. 2.2.1*; the natural evolution of humans to learn in the state of nature in a primitive way, in *Sec. 2.2.2*; the natural evolution of humans to observe nature in the state of nature, in *Sec. 2.3.1*; the natural

evolution of humans to learn about things in the state of nature in a relatively primitive way, in *Sec. 2.4.1*; the natural evolution of humans in the state of nature to communicate with each other in a pre-historic way, in *Sec. 2.5.1*; the natural evolution of humans in the state of nature to learn from the environment in a pre-literate way, in *Sec. 2.5.2*; the natural evolution of humans in the state of nature to be bestowed with different abilities, which vary from individual to individual, in *Sec. 3.2.1*; the natural evolution of humans to learn in the state of nature, in a primitive way, in *Sec. 3.2.2*; the natural evolution of humans to live side-by-side with nature in the state of nature, in *Sec. 3.3.1*; the natural evolution of humans to learn in the state of nature in a primitive way, in *Sec. 3.4.1*; the natural evolution of humans to live together in the state of nature, with relatively little class distinction, in *Sec. 3.4.2*; the natural evolution of humans in the state of nature “to build a picture of the world through our senses working in unison, exploiting the immense interconnectivity that exists in the brain,” according to Susan Greenfield, in *Sec. 3.5.1*; and the natural evolution of humans to learn in the state of nature in groups like bands, clans, etc., in *Sec. 3.5.2*).

On the other hand, there is transformation (e.g., the technical transformation of human communication with each other by the invention of the Socratic School of teaching, in *Sec. 2.2.1*; the technical transformation of human learning by the invention of “child “museums” “apprenticeship programs,” and “Christopherian encounters,” in *Sec. 2.2.2*; the technical transformation of human understanding of nature by the invention of public schools to teach science in accordance to the “National Science Education standards,” in *Sec. 2.3.1*; the technical transformation of human learning by way of NCLB for the focus on standardized tests, in *Sec. 2.4.1*; the technical transformation of human communication by the invention of the Great Books, in *Sec. 2.5.1*; the technical transformation of human learning by the invention, for example, of the Vedic system of education, “based on the Veda...and later Hindu texts and scriptures,” in *Sec. 2.5.2*; the technical transformation of human abilities by the invention of different environmental programs specifically to nurture giftedness, like “learning...from acceleration, lateral enrichment, and special grouping,” etc., in *Sec. 3.2.1*; the technical transformation of human learning by way of the invention of the models of “learning styles,” in *Sec. 3.2.2*; the technical transformation of human life by the invention of the ideology of “anthropocentrism,” in *Sec. 3.3.1*; the technical transformation of human learning by the invention of behaviorism, which, for the critics like Chomsky, is “highly conducive to justifying or advancing totalitarianism,” in *Sec. 3.4.1*; the technical

transformation of human living together by the invention of different systematic ideologies like the one about “middle class society,” in *Sec. 3.4.2*; the technical transformation of human learning by the invention of the egalitarian ideology for different learning styles, not in unison, in *Sec. 3.5.1*; and the technical transformation of human learning by the invention of different modern forms of alternative education, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are inorganicness-volition, nonwillingness-willingness, naturalness-technologicalness, naturalness-nonnaturalness, and so on.

13th Thesis: The Symmetry-Asymmetry Principle

The thirteenth thesis is labeled as the symmetry-asymmetry principle (on the relationships among existents) in the category of “agency” in existential dialectics (which was also already worked out in my previous books), in that there is no asymmetry without symmetry—and vice versa.

For instance, the Same can be symmetric and asymmetric towards the Others. But in case of asymmetry (as analyzed in *BDPD*), oppression and self-oppression can occur. So, when the Same is asymmetric towards the Others, the Same can also be relatively asymmetric towards itself in self-oppression, just as the Others can be likewise towards themselves. The subsequent oppressiveness is dualistic, as much by the Same against the Others and itself, as by the Others against the Same and themselves. Both oppression and self-oppression can be achieved by way of downgrading differences between the Same and the Others and of accentuating them.

This is true, even though not all forms of asymmetry have to be about oppression and self-oppression.

In addition, from Chapter Three of *FPHG*, symmetry is not perfect, to be understood in an approximate sense under many life circumstances. With this clarification in mind, hereafter are some empirical examples.

For instance, on the one hand, there is symmetry (e.g., the co-existence of different schools of teaching over time, be they the ones proposed by Socrates, Kierkegaard, or else, in *Sec. 2.2.1*; the co-existence of different views of child development, like the ones by Piaget, Gardner, etc., in *Sec. 2.2.2*; the co-existence of different theories about nature to be taught in schools, be they about creation theory or evolutionary theory, in *Sec. 2.3.1*; the co-existence of different views about NCLB, in *Sec. 2.4.1*; the co-existence of different views about the Great Books, both negative and affirmative, in *Sec. 2.5.1*; the existence of different social groups in society, in *Sec. 2.5.2*; the existence of different individuals in society, in *Sec. 3.2.1*; the existence of different learning methods, be they about learning with the intervention of a teacher or without it, in *Sec. 3.2.2*; the existence of different rationalities in human history, in *Sec. 3.3.1*; the co-existence of different theoretical frameworks for learning, in *Sec. 3.4.1*; the co-existence of different theories in the sociology of education, in *Sec. 3.4.2*; the co-existence of different learning styles in school, in *Sec. 3.5.1*; and the co-existence of different forms of alternative education, in *Sec. 3.5.2*).

On the other hand, there is also asymmetry (e.g., the popularity of the Socratic method in contemporary American law schools—but the popularity of the method used by Kierkegaard in theological schools, in *Sec. 2.2.1*; the popularity of Piaget’s view among his supporters—but the acceptance of Gardner’s view among his own supporters, in *Sec. 2.2.2*; the widespread teaching of evolutionary theory in contemporary American public schools—but the preferred teaching of creation theory in theological seminaries in contemporary America, in *Sec. 2.3.1*; the more favorable views about NCLB by its proponents—but the unfavorable views about NCLB by its opponents, in *Sec. 2.4.1*; the relatively more popularity of the Western canon on such campuses like the University of Chicago, Columbia College, St. John’s College, Stanford University, Princeton University, etc.—but the relatively less popularity of the Western canon on such campuses like Beijing University, Harbin Institute of Technology, etc., in *Sec. 2.5.1*; some individuals, “by virtue of their education...and inborn educability,” are more “sufficient for healthy governance” than others, according to Plato, in *Sec. 2.5.2*; some individuals can think more quickly, deeply, and broadly than others, in *Sec. 3.2.1*; the popularity of learning without the intervention of teaching in the Sudbury model—but the popularity of learning with the intervention of a teacher in the Socratic method, in *Sec. 3.2.2*; the popularity of “anthropocentrism” as “the Dominant Western World View” in modern times—but the popularity of “Nature-Based Practice and Learning” at the

EcoDharma Center, in *Sec. 3.3.1*; the popularity of behaviorism in the early post-WWII period—but the popularity of cognitivism later on, especially under the influence of Chomsky, in *Sec. 3.4.1*; the popularity of structural functionalism in the 1940s and 1950s—but the popularity of conflict theory in the 1980's, for example, in *Sec. 3.4.2*; not all learning styles in school are created equal, as some are more successful academically than others, as shown in the achievement gap between black students, on the one hand, and white and Asian students, on the other hand, in *Sec. 3.5.1*; and the appropriateness of alternative schools for those with disabilities—but the popularity of public school choice options for those students attracted “to particular themes, such as performing arts,” in *Sec. 3.5.1*).

And the reverse direction also holds true.

Again, for the last time, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are strength-weakness, potence-impotence, balance-extremity, reflexiveness-unreflexiveness, equality-inequality, harmoniousness-unharmoniousness, and something like that.

14th Thesis: The Regression-Progression Principle

The fourteenth thesis is called the regression-progression principle (on the direction of history) in the category of “outcome” in existential dialectics (which was also already worked out in my previous books), in that neither the cyclical nor the linear views are adequate for explaining many phenomena at all levels. There is no regression without progression—and vice versa.

History progresses to more advanced forms, but with a regressive touch. Examples include no freedom without unfreedom, no equality without inequality, and no civilization without barbarity. This is not an inevitable law, but merely a highly likely empirical trend.

For instance, on the one hand, there is regression (e.g., the regression made by the Socratic School of teaching, as shown in the criticisms by the

critics, in *Sec. 2.2.1*; the regression made by Gardner's view about the unschool mind, as shown in the criticisms by the critics, in *Sec. 2.2.2*; the regression made by evolutionary theory, as shown in the problems pointed out by the critics in regard to its controversial monopoly of how nature is to be taught in schools, in *Sec. 2.3.1*; the regression made by NCLB, as shown in the problems pointed out by the critics, in *Sec. 2.4.1*; the regression made by the Western canon, as shown in the criticisms by the critics, in *Sec. 2.5.1*; the regression made by Freire's system of education, since, for its critics, "it can mask rather than overcome the teacher's authority," in *Sec. 2.5.2*; the regression made by gifted children when "[u]nderachievement can...result from emotional or psychological factors, including depression, anxiety, perfectionism, or self-sabotage," in *Sec. 3.2.1*; the regression made by the models of learning styles, as shown in the problems pointed out by the critics, in *Sec. 3.2.2*; the regression made by "Nature-Based Practice and Learning," as shown in the problems pointed out by the critics, in *Sec. 3.3.1*; the regression made by educational technologies, as shown in the problems pointed out by the critics, in *Sec. 3.4.1*; the regression made by the discourse on structure and agency, as shown by the strengths of other theories like structural functionalism and conflict theory, together with the problems in the works of Bourdieu, as pointed out by the critics, in *Sec. 3.4.2*; the regression made by the mainstream academic environment in America, when black students do not do well academically in school, in *Sec. 3.5.1*; and the regression made by alternative education, as shown in the criticisms by the critics, in *Sec. 3.5.2*).

On the other hand, there is progress (e.g., the progress made by the Socratic School of teaching to help us discover our prejudices, in *Sec. 2.2.1*; the progress made by Gardner's view about the unschool mind, so as to help students learn better, in *Sec. 2.2.2*; the progress made by evolutionary theory for the better understanding of nature in the context of how science is to be taught in schools, in *Sec. 2.3.1*; the progress made by NCLB to improve "individual outcomes in education," in *Sec. 2.4.1*; the progress made by the Western canon for a more well-rounded education, in *Sec. 2.5.1*; the progression made by Freire's system of education "in the pursuit of...liberation from oppression," in *Sec. 2.5.2*; the progression made by gifted children when they "perform extremely well on standardized or reasoning tests," and so on, in *Sec. 3.2.1*; the progress made by the models of learning styles for learners to learn better, in *Sec. 3.2.2*; the progress made by "Nature-Based Practice and Learning," as shown in the spiritual life at the EcoDharma Center, in *Sec. 3.3.1*; the progress made by educational technologies, as shown in the benefits

pointed out by the proponents, in *Sec. 3.4.1*; the progress made by the discourse on structure and agency for a better understanding of the interactions between structure and agency, in *Sec. 3.4.2*; the progress made by the mainstream academic environment in America, when white and Asian students do well academically in school, when compared with black students, in *Sec. 3.5.1*; and the progress made by alternative education for different students with different needs, in *Sec. 3.5.2*.

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are cost-benefit, undesirability-desirability, badness-goodness, risk-opportunity, and so forth.

15th Thesis: The Same-Difference Principle

The fifteenth thesis refers to the same-difference principle (on the metamorphosis of change) in the category of “outcome” in existential dialectics (which was worked out in *ALD* and other books of mine), in that an entity, as it evolves over time, can be both different from and similar to its opposing alternatives and does not have to be solely more different from them over time. There is no similarity without difference—and vice versa.

Opposites are not absolute in a black-or-white fashion; so, an entity can become relatively more similar to (or more different from) its opposite over time.

This is further constrained by another principle, that is, the symmetry-asymmetry principle about the relationships among existents under the category about agency in existential dialectics, in that if there is symmetry (equality) between two entities, there is likewise asymmetry (inequality) emerging in a different way.

For instance, on the one hand, there is similarity in outcome (e.g., the contribution to the molding and regulation of values and behaviors, regardless of whether this be done by way of the Socratic method or the

one by Kierkegaard, in *Sec. 2.2.1*; the contribution to the molding and regulation of values and behaviors, regardless of whether this be done by way of the traditional school system or the new approach by Gardner for the unschooled mind, in *Sec. 2.2.2*; the contribution to the molding and regulation of values and beliefs, regardless of whether this be done by way of teaching creation theory or evolutionary theory in schools, in *Sec. 2.3.1*; the contribution to the molding and regulation of values and beliefs, regardless of whether this be done by way of standards-based education or non-standards-based education, in *Sec. 2.4.1*; the contribution to the molding and control of values and beliefs, regardless of whether this be done by way of the imposition of the Western canon or not), in *Sec. 3.5.1*; the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of the extreme methods of Plato or the focus on curiosity by Rousseau, in *Sec. 2.5.2*; the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of encouraging gifted children to perform well or by way of discouraging them from outperforming their siblings, comrades and school bullies, in *Sec. 3.2.1*; the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of the Sudbury model of student-centered learning or by way of an alternative teacher-centered learning style, in *Sec. 3.2.2*; the contribution to the molding and control of values and behaviors, regardless of whether this be done by way of “anthropocentrism” or by way of “Nature-Based Practice and Learning,” in *Sec. 3.3.1*; the contribution to the molding and control of beliefs and behaviors, regardless of whether this be done by way of radical behaviorism or by way of constructivism, in *Sec. 3.4.1*; the contribution to the molding and control of beliefs and values, regardless of whether this be done by way of the ideology of a “middle-class society” or by way of the ideology of “the best and the brightest,” in *Sec. 3.4.2*; the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of uniformity in education or diversity in education, in *Sec. 3.5.1*; and the contribution to the molding and control of beliefs, values, and behaviors, regardless of whether this be done by way of conventional education or by way of alternative education, in *Sec. 3.5.2*).

On the other hand, there is difference in outcome (e.g., the contribution to the molding and regulation of values and behaviors by way of the Socratic method for a more rationalist way of life based on reason—but the contribution to the molding and regulation of values and behaviors by way of the method by Kierkegaard for a more non-rationalist way of life based on faith, in *Sec. 2.2.1*; the contribution to the molding and

regulation of values and behaviors by way of the traditional school system for a relatively more homogenous, standardized way of learning—but the contribution to the molding and regulation of values and behaviors by way of the new approach by Gardner for a relatively more diverse, multiple way of learning, in *Sec. 2.2.2*; the contribution to the molding and regulation of values and beliefs by way of teaching creation theory in schools for a relatively more religious or sacred lifeworld—but the contribution to the molding and regulation of values and beliefs by way of teaching evolutionary theory in schools for a relatively more secular lifeworld, in *Sec. 2.3.1*; the contribution to the molding and regulation of values and beliefs by way of standards-based education for a focus on test results—but the contribution to the molding and regulation of values and beliefs by way of non-standards-based education for a focus on individualized creative teaching and learning, in *Sec. 2.4.1*; the contribution to the molding and control of values and beliefs by way of the imposition of the Western canon for a comprehensive education about Western culture—but the contribution to the molding and control of values and beliefs by way of the rejection of the Western canon for a more inclusive education free of Western cultural bias, in *Sec. 3.5.2*; the contribution to the molding and control of beliefs and behaviors by way of encouraging gifted children to perform well for a meritocratic community—but the contribution to the molding and control of beliefs and behaviors by way of discouraging gifted children from outperforming their siblings, comrades and school bullies for a more egalitarian community, in *Sec. 3.2.1*; the contribution to the molding and control of beliefs, values, and behaviors by way of the Sudbury model of student-centered learning for a relatively more libertarian way of life—but the contribution to the molding and control of beliefs, values, and behaviors by way of an alternative teacher-centered learning style for a relatively more disciplinary way of life, in *Sec. 3.2.2*; the contribution to the molding and control of values and behaviors by way of “anthropocentrism” for a more materialistic way of life—but the contribution to the molding and control of values and behaviors by way of “Nature-Based Practice and Learning” for a more spiritual way of life, in *Sec. 3.3.1*; the contribution to the molding and control of beliefs and behaviors by way of radical behaviorism for a more controlling environment by agents on the outside—but the contribution to the molding and control of beliefs and behaviors by way of constructivism for a less controlling environment by agents on the outside, in *Sec. 3.4.1*; the contribution to the molding and control of beliefs and values by way of the ideology that “education is available to all,” ultimately for the interests of a “middle-class society”—

but the contribution to the molding and control of beliefs and values by way of the ideology of “the best and the brightest,” ultimately for the interests of an elitist society, in *Sec. 3.4.2*; the contribution to the molding and control of beliefs, values, and behaviors, by way of uniformity in education for a lifeworld of efficiency and competition—but the contribution to the molding and control of beliefs, values, and behaviors, by way of diversity in education for a lifeworld of equality and tolerance, in *Sec. 3.5.1*; and the contribution to the molding and control of beliefs, values, and behaviors, by way of conventional education for a more conservative lifeworld—but the contribution to the molding and control of beliefs, values, and behaviors, by way of alternative education for a more radical or non-traditional lifeworld, in *Sec. 3.5.2*).

And the reverse direction also holds true.

Again, it should be stressed, however, that there are different shades of gray (or different degrees of truth) in the two opposites, and the classification is not necessarily mutually exclusive either. In fact, even when some combinations of the two occur, they only end up sharing the same dialectic relationship, but in a different degree.

Also, there are some other relationships (as a kind of family resemblance) which have something in common with the principle, but they are not exactly the same but only more or less comparable, which varies from case to case.

Good examples of family resemblance in relation to the principle are homogeneity-heterogeneity, we-they, and so forth.

16th Thesis: The Post-Human Rebellion

And the sixteenth thesis is about the role of “post-humans,” which I originally proposed in my previous books, starting with the first book titled *The Future of Human Civilization* in 2000 and all others afterwards.

As already pointed out in *Sec. 1.6*, I need to emphasize, as this is something that I used to repeat (*almost verbatim*) from my previous books, two clarifications here about the term “post-human” as a neologism in my works.

Firstly, the word “post-human” here should *not* be confused with another term which looks similar but has a totally different meaning in the literature of postmodernism, namely, “post-humanism”—which constitutes a critique of “humanism” as traditionally understood (especially, though not exclusively, in relation to the idea of progress in science and reason in the Enlightenment project). (WK 2008)

My works reject the project of “postmodernism” and propose the future world of what I originally called “after-postmodernity” in *FHC* and *FCD*, for instance.

And secondly, the word “post-human” here should also *not* be confused with a similar term which is used to champion the ideology of technology for the future co-existence between humans and cyborgs in “trans-humanism.” (WK 2008a)

Instead, my term “post-human” in relation to “posthuman-ism” also rejects “transhumanism” (especially, though not exclusively, in relation to the promises of technology) and refers to something else altogether, that is, the future extinction of humans and its post-human successors in deep space and beyond unto multiverses.

My critique of “transhumanism” was more extensively elaborated in *Sec. 2.4.1* of *BEPE*.

With these two clarifications in mind (as summarized in *Table 1.31*)—the post-human rebellion in education can be addressed in relation to five main directions, based on the heterodox theory of education as analysed in this book (together with my visions as already worked out in my previous books).

Firstly, the post-human rebellion in education will learn from the heterodox theory of education in relation to the dialectic context of teaching and learning—especially in the larger dialectic context of no teaching without learning (and vice versa).

Secondly, the post-human rebellion in education will learn from the heterodox theory of education in relation to the four perspectives of the mind, nature, society, and culture.

Thirdly, the post-human rebellion in education will learn from the heterodox theory of education in relation to the non-privilege of any specific theory over others in the literature and the non-integration of them all (as they are not necessarily compatible with each other).

Fourthly, the post-human rebellion in education will have to confront the new challenges as posed by the long-term civilizational development of intelligent life in the distant future, both here on this planet Earth and elsewhere in deep space until multiverses.

As this is something that I regularly pointed out in my previous books for background information (and summarize here, *almost verbatim*), I already worked out, in my numerous books, what these new challenges will be and provide different original visions to meet them—especially, in regard to the future evolutions of the mind (e.g., “the contrarian personality,” “the hyper-martial body,” “the hyper-sexual body,” “floating consciousness,” “hyper-spatial consciousness,” “thinking machines,”

“unfolding unconsciousness,” “thinking robots,” “genetically altered superior beings,” “cyborgs,” and others), of nature (e.g., “resettlement geology,” “post-cosmology,” “the alteration of space-time,” “the creation of new matter-energy,” “selective geometry,” and the like), of society (e.g., “multifaceted war and peace,” virtual organizations, different versions of “post-capitalism” and “post-democracy,” the movement of “cyclical progression” at both structural and systemic levels, “ambivalent technology,” and so forth), and of culture (e.g., “post-human mind games,” “comparative-substitutive religion,” “post-ethics,” “post-civilization,” “transformative aesthetic experience,” “contrastive mathematical-logic,” and the whatnot) in history (e.g., the age of “after-postmodernity”), in the context of my approaches in relation to methodology (e.g., “sophisticated methodological holism,” “critical-dialectic formal science,” etc.) and ontology (e.g., “existential dialectics,” “contrastive rationality”).

Of course, the examples (as listed above) are not exhaustive but illustrative, since my numerous books have worked out many other visions (as already roughly summarized in *Sec. 1.6* and *Sec. 1.7*). Many, though not all, of my visions on the mind, nature, society, culture, history, methodology, and ontology (as cited above) are summarized in the tables as shown in Chapter One and Chapter Four (especially in *Table 4.43* about my original theories on numerous topics).

And finally, or fifthly, the post-human rebellion in education will also learn from the heterodox theory of education in regard to the need to go beyond formal and informal education (as further elaborated in the next section).

Beyond Formal and Informal Education

This “post-human” rebellion in education to transcend both formal and informal education can be understood in terms of four great future transformations of education, as explained below (and summarized in *Table 1.2*).

Four Great Future Transformations of Education

The four great future transformations of education can be explained hereafter, with the caveat, however, that the classification in terms of the number four is solely aesthetic and utilitarian (illustrative), as there is no objective basis that it must be classified in term of the number four.

The First Great Future Transformation of Education

With this caveat in mind—the first great future transformation of education in the post-human era concerns what I originally call *online education*.

For instance, just as there is “online chess” (as already discussed in *The Future of Post-Human Chess* or *FPHCHESS*), there will likewise be “online education,” in that education will be carried out more and more on the Internet.

An excellent current historical example is the pioneering MIT OpenCourseWare, where people around the world can go into the MIT website and learn (for free) the courses as actually taught at MIT, without being formally a MIT student. (MIT 2010)

Of course, future online education will be radically different from the one known today (like the MIT OpenCourseWare online as a current example), so the example is more illustrative, not exhaustive—so as to stretch our human imagination to the very limit for visioning the future of education that our human mind has never known.

The Second Great Future Transformation of Education

The second great future transformation of education in the post-human era concerns what I originally call *virtual education*.

For instance, just as there are “virtual experience” of chess (as already discussed in *FPHCESS*) and “virtual memory” (or “virtual recall”) in terms of uploading info into the brain for sexual fantasy (as already discussed in *The Future of Post-Human Sexuality* or *FPPHS*) and for general purposes (as already discussed in *The Future of Human Civilization* or *FHC*)—there is likewise “virtual education,” in that education will be carried out one day by the technological breakthrough of uploading info into the brain

In the current context of education, these technological breakthrough will further transform education at the virtual level that the human world has never known.

The Third Great Future Transformation of Education

The third great future transformation of education in the post-human era concerns what I originally call *holistic education*.

For instance, just as there are “holistic knowledge” (as already discussed in *The Future of Post-Human Knowledge* or *FPHK*, and other books of mine) and “holistic methodology” (as already discussed in many books of mine like *FCD*, *FPHC*, *BCPC*, *FC*, *FPHK*, etc.)—there is

likewise “holistic education,” in that education will be carried out more and more broadly and deeply, in accordance to the future evolutions of the mind in relation to perception, conception, imagination, intuition, emotions, and behaviors, for example.

The current fad of alternative (informal) education—be it about “particular themes” in “public school choice options,” different “learning styles” in “independent schools,” different “philosophical” (or “religious”) interests in “home-based education,” and the like—will look so narrow (specialized), by future holistic educational standards, that they can be regarded, by those in the future eras, as a naïve chapter in the relatively primitive educational history of humans.

By the same logic, but in the opposite direction, the current dominant trend of mainstream (formal) education—be it about “the great books” in “liberal education,” “learning by doing” in “progressive education,” and the like—will likewise look so standardized (uniformed), by future holistic educational standards, that they can be regarded, by those in the future eras, as a backward chapter in the relatively primitive educational history of humans.

Furthermore, in this holistic context of education, my visions of the future evolutions of the mind (including the brain and the body) are especially relevant, especially in relation to “unfolding unconsciousness” (as already discussed in *FPHU*), “floating consciousness” (as already discussed in *FCD* and *FPHC*), “hyper-spatial consciousness” (as already discussed in *FPHG* and *FPHC*), “multilogical learning” (as already discussed in *FPHL*), “comprehensive creating thinking” (as already discussed in *FPHCT*), “hyper-martial body” (as already discussed in *FPHMA*), “hyper-sexual body” (as already discussed in *FPHS*), “transformative aesthetic experience” (as already discussed in *FPAE*), “beyond normality and abnormality” (as already discussed in *FPHP*), “beyond morality and immorality” (as already discussed in *BEPE*), and the like.

Needless to say, the future holistic education will not be exactly identical to the forms as predicted by these visions of mine, but the examples are to stretch the current human imagination to the very limit for visioning the future of education that our human mind has never known.

The Fourth Great Future Transformation of Education

And the fourth great future transformation of education in the post-human era concerns what I originally call *spiritual education*.

For instance, in *The Future of Capitalism and Democracy* (2002), I already explained why and how there will be more spiritual

transformations to come, especially in relation to the two value ideals of (i) transcending freedom in floating existence and (ii) transcending equality in the rivalry of cosmic hegemony.

Even then, as this is something I often stressed in many of my previous books, these two value ideals constitute only a form of transcendent state of higher spiritual concerns, with other more ideals to come in the distant future, especially when considered in conjunction with other future transformations of the mind, nature, society, and culture (as already addressed in my other books on numerous topics).

Some good examples of my other visions of the spiritual transformations to come include “contrarian personality” (as already discussed in *FPHP*), “post-civilization” (as already discussed in *BCIV*), “post-ethics” (as already discussed in *BEPE*), “beyond aggression and pacificity” (as already discussed in *FPHWP*), “post-human religion” (as already discussed in *FPHR*), “post-human law” (as already discussed in *FPHLAW*), and so on.

In the current context of education, these future spiritual transformations will further transform education in a way that the human world has never known.

Enormous Implications

These future great transformations of education have enormous implications for some of the most profound questions which have consumed some of the finest minds in educational history—Does formal education corrupt the unschooled mind? Is alternative education an effective solution to the problems of formal education? Should education be student-centered or teacher-centered? And....?

Questions like this will yield new answers in post-human education in the context of going beyond teaching and learning, on the one hand, and beyond formal and informal education, on the other hand—such that their possibility and desirability are not to the extent that the respective defenders would like us to believe.

In any event, this future history of post-human education will be made by the post-humans in different places at different times, in special relation to my other visions on “after-postmodernity” (as already discussed in *FHC*, *FCD*, *FPHC*, and so on) and different worlds (as already discussed in *BCOS*, *FPHG*, *FPHST*, *FC*, and so on).

Yet, lest any misunderstanding occurs, this post-human education will bring neither utopia nor dystopia. But, it is also not up to us to judge whether or not, or to what extent, the post-human future of education will

be for better and for worse, because it will be decided by the values and beliefs of future post-humans in a way that the entire educational history of our human world hitherto existing has never encountered.

**Table 4.1. Sophisticated Methodological Holism
(Part I)**

- “My methodological holism implies the partiality-totality principle in the ontology of existential dialectics (see the table on the partiality-totality principle for summary), which is against the varieties of (a) reductionism and (b) reverse-reductionism, in relation to (i) concept, (ii) theory, (iii) methodology, and (iv) ontology.” (*FC*)
- “[M]y methodological holism here is not opposed to methodological individualism but includes it (and, for that matter, other methodologies too)....” (*FPHC*) For this reason (and others too, as summarized hereafter), my version of methodological holism is sophisticated—not vulgar as sometimes used by inapt scholars using the same term. (*FC*)
- “[M]y methodological holism does not democratically presume that all levels are equally valid, as all levels are not created equal. In other words, in relation to issue X, level A may be more relevant than level B, but in relation to Y, level B can be more relevant than level A instead.” (*FPHC*) One excellent example of this vulgar democratic presumption is what I called in *BNN* “the compromise fallacy.” (*FC*)
- My methodological holism does not presume that a lower level of analysis is more important than a higher level, solely because the former serves as the foundation for the latter—and vice versa, for that matter. One excellent example of this reductionistic presumption is what I called in *FPHST* “the foundation fallacy.” (*FPHST, FC*)

(continued on next page)

**Table 4.1. Sophisticated Methodological Holism
(Part II)**

- “[M]y methodological holism does not make any a-priori postulation that there must be a definite (and, for that matter, indefinite) number of levels” in any analysis. (*FPHC*) Nor does it dogmatically require that there must be a certain combination of levels of analysis in a given inquiry. (*FC*)

- “[M]ethodological holism, in my usage, does not assume that all levels...can necessarily be integrated, since methodological holism is not aimed to search for the holy grail of 'an integral theory...' (as is the case for Wilber). In other words, it allows that sometimes some levels may experience irreducible gaps between them, to be understood, at best, as empirical correlations, not as causal relations....” (*FPHC*)

- “[D]ifferent levels may overlap and even interact with each other in a given context (but sometimes may not), and the fact that I even proposed different ways of re-classifying the levels (whenever needed) in *FDC* reinforces this point....The dual danger here is either forcefully making different levels interact when they are just different (or, metaphorically speaking, apples and oranges) or inappropriately ignoring their interactions when some situations instead require them.” (*FPHC*)

- “[T]o understand different levels from their own (unique) perspectives (as required by my methodological holism) is not the same as trying to reduce them to a preferred level in the process of learning from other levels. This second kind of multidisciplinary work is not genuine and does no justice to the unique complexities and merits inherent at each level.” (*FPHC*)

(continued on next page)

**Table 4.1. Sophisticated Methodological Holism
(Part III)**

- “[My] methodological holism walks a fine line between the artificial classification (separation) of levels and the simultaneous incorporation of them, if only for the sake of human scholarly endeavor. It should be reminded that nature does not impose upon itself the academic classification of the levels of analysis as humans have. The enterprise of classification is therefore anthropocentric.” (*FPHC*)
- “[M]y methodological holism advocates neither epistemic subjectivism nor epistemic non-subjectivism (e.g., realism, idealism, and historicism), neither epistemic relativism (e.g., subjectivism, historicism) nor epistemic absolutism (e.g., realism, positivism), neither epistemic reductionism nor epistemic emergencism, and neither epistemic objectivism (e.g., realism, idealism) nor epistemic historicism....Neither does methodological holism, in my usage, accept the false meta-conceptual dichotomy between nominalism and realism....These false dichotomies...are to be transcended. In other words, methodological holism does not fully accept epistemic realism, positivism (a form of epistemic idealism), historicism, subjectivism, and reductionism in epistemology and philosophy of science but learns from the strengths and weaknesses of all of the opposing approaches without siding with any of them....” (*FPHC*)
- “Sophisticated methodological holism is subject to the constraints as imposed by the syntax of existential dialectics (e.g., the partiality-totality principle and the predictability-unpredictability principle). Even in predictability, outcomes are subject to uncertainty, the degree of which varies from case to case.” (*FC*)

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**Table 4.1. Sophisticated Methodological Holism
(Part IV)**

• “Sophisticated methodological holism—when applied, especially though not exclusively, as illustrated in my numerous works—can enrich the understanding of reality in some distinctive ways. Here are three examples (as revealed in each of my books).” (*FPHCT*; *FPHL*)

—“Firstly, it provides a comprehensive analysis of a subject matter, from which much can be learned about reality,” “both in relation to the perspectives of the mind, nature, society, and culture and also in relation to a new classification of the subject matter.”

—“Secondly, it suggests some visions of the future in relation to the subject matter in question.”

—“And thirdly, it proposes some insights on meta-theory (e.g., methodology and ontology) in general—with the clear understanding, however, of the dilemma of specific vs. general ontology (as shown in the table on the syntax of existential dialectics in the context of the dilemma of ontology). For this very reason, all of these ways are important, without reducing one into the analysis of another.”

• “In the end, my meta-theory (both sophisticated methodological holism and existential dialectics) serves as a foundation to unify all domains of knowledge into *an unified theory of everything* (by way of some ontological principles and the comprehensive perspectives of the mind, nature, society, and culture). This is so, without committing the sins of reductionism and reverse-reductionism (as often seen in many holistic approaches, with the fad of systems approach—be it about systems theory, chaos theory, complexity theory, or else—as a most recent notorious example, which I debunked in *The Future of Complexity* and also in *The Future of Post-Human Formal Science*). My distinctive approach makes good use of different schools of thought without favoring any of them nor trying to integrate them (as they are not necessarily compatible with each other), so as to adjust for subjectivity, diversity, conflict, and complexity, for example. In this sense, the word “unified” does not have to mean integrative approach, in a narrow sense, nor systems approach, in a broad one, both of which I reject while learning from them.” (*FPHFS*; *FPHS*)

Sources: A summary of *Sec. I.2* in *FPHC*—and also from *BNN*, *FPHST*, *ALD*, *FC*, *FPHCT*, and the rest of all other books of mine. See the books for more detail.

**Table 4.2. On Reductionism and Reverse-Reductionism
(Part I)**

• **The Partiality-Totality Principle**

—The partiality-totality principle in the ontology of existential dialectics targets against the varieties of reductionism and reverse-reductionism (as already worked out in my previous books).

• **Against the Varieties of Reductionism**

—*Conceptual Reductionism*

- Some illustrative instances involve myriad dualities like mind vs. body, self vs. world, democracy vs. non-democracy, and the like (as already addressed in *FHC*, *FPHC*, and *BDPD*, for instance).

—*Theoretical Reductionism*

- A fascinating case study concerns what I originally called “the foundation fallacy” in *FPHST*, in any attempt to naively understand space-time from the physical perspective as the foundation and, consequently, to dangerously dismiss other perspectives.
- In *FAE*, I elaborated further these versions of reductionism in the literature on aesthetics (e.g., form vs. content, representation vs. expression, critics vs. artists, and externalism vs. internalism).
- In *FIA*, I revealed other forms of reductionism in the literature on information architecture (e.g., the constructivist argument).
- In *FPHU*, I showed the persistent legacy of reductionism, this time, in the literature on anomalous experience (e.g., the obsession with physics, chemistry, and biology for explaining anomalous experience).
- In *FPHE*, I examined another case of reductionism in action, in the context of engineering (e.g., technical constraints vs. normative constraints).
- In *FPHMM*, I elaborated one more version of reductionism, in relation to the three domains of communication (e.g., the competing views on sending, connecting, and receiving).
- In *FPHCT*, I explored another version of reductionism, in relation to invention and innovation (e.g., the bio-psychological argument vs. the socio-cultural arguments).

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**Table 4.2. On Reductionism and Reverse-Reductionism
(Part II)**

• **Against the Varieties of Reductionism (*cont'd*)**

—*Theoretical Reductionism (cont'd)*

- In *FPHG*, I identify another version of reductionism, in relation to infinity, symmetry, and dimensionality (e.g., the Euclidean argument vs. the non-Euclidean arguments).
- In *FPHUP*, I analyzed another version of reductionism, in relation to density and void (e.g., the engineering argument and the ecology argument).
- In *FPHL*, I examined another version of reductionism, in relation to structure and context (e.g., the structuralist argument and the contextualist argument).
- In *PFHO*, I explored another version of reductionism, in relation to communication, decision-making, and leadership (e.g., the rational-system argument vs. the natural-system argument).
- In *PFHMA*, I revealed another version of reductionism, in relation to the martial body and spirit (e.g., the spiritual argument vs. the materialist argument vs. the defensive argument).
- In *PFHS*, I analyzed another version of reductionism, in relation to the sexual body and spirit (e.g., the naturalist argument vs. the constructivist argument).
- In *PFHLAW*, I examined another version of reductionism, in relation to law (e.g., the necessity argument vs. the contingency argument).
- In *FPHWP*, I showed another version of reductionism, in relation to war and peace (e.g., the aggressivist argument vs. the pacifist argument).
- In *BEPE*, I analyzed another version of reductionism, in relation to morality and immorality (e.g., the objectivist argument vs. the non-objectivist argument vs. the skeptical argument).
- In *BCOS*, I examined another version of reductionism, in relation to the contested beginnings and speculative ends of the universe (e.g., the scientific argument vs. the religious argument vs. the esoteric argument vs. the metaphysical argument).
- In *FPHP*, I show another version of reductionism, in relation to normality and abnormality (e.g., the natural argument vs. the social argument vs. the cultural argument vs. the mental argument).

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**Table 4.2. On Reductionism and Reverse-Reductionism
(Part III)**

• **Against the Varieties of Reductionism (*cont'd*)**

—*Theoretical Reductionism (cont'd)*

- In *FPHGEOLOGY*, I scrutinized another version of reductionism, in relation to statics and dynamics (e.g., the catastrophe argument vs. the uniformity argument vs. the revision argument).
- In *FPHCHESS*, I showed another version of reductionism, in relation to tactics and strategy (e.g., the natural argument vs. the social argument vs. the cultural argument vs. the mental argument).
- In *FPHR*, I revealed another version of reductionism, in relation to secularness and sacredness (e.g., the critical argument vs. the skeptical argument vs. the theist argument).
- And in *FPHEDUCATION*, I examine another version of reductionism, in relation to teaching and learning (e.g., the teacher-centered argument vs. the student-centered argument vs. the balanced argument).

—*Methodological Reductionism*

- A good instance concerns the debate between different versions of qualitative and quantitative methods (as already analyzed in *FC* and also *FHC*). In *FPHML*, I examined similar reductionism, this time, in the literature on mathematical logic (e.g., the obsession with consistency, soundness, and completeness). And in *FPHFS*, I also explored the problems of reductionism in the context of formal science (e.g., the analytical argument).

—*Ontological Reductionism*

- An excellent example is the debate between emergentism and reductionism in complexity theory and also in psychology (as elaborated in *FPHC*, in the context of Being and Becoming).

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**Table 4.2. On Reductionism and Reverse-Reductionism
(Part IV)**

• **Against the Varieties of Reverse-Reductionism**

—*Conceptual Reverse-Reductionism*

- Any concept of “art” (e.g., fine art, cave art, outsider art, junk art) is deemed acceptable in postmodernism (as already addressed in Ch.4 of *FHC*).

—*Theoretical Reverse-Reductionism*

- There are numerous art and literary theories co-exist. Take the case of literary studies, as there are now Literary Structuralism, Marxist Literary Criticism, New Criticism, Phenomenology, Hermeneutics, Language-Game Literary Criticism, Feminist Literary Criticism, Reception Theory, Reader Response Criticism, Poststructuralism, Semiotics, Psychoanalytic Literary Criticism, just to cite some well-known ones, with no one being said to be better than any others (as detailedly analyzed in Ch.4 of *FHC*). (S. Raman 1997) In *BNN*, I even introduced “the compromise fallacy” as another good illustration of theoretical reverse-reductionism, in misleadingly treating both genetic and environmental approaches as equally valid.

—*Methodological Reverse-Reductionism*

- There is the “anything-goes” mentality in postmodernism (e.g., doing art without praxis, doing art with praxis, and doing art by sublation), as analyzed in Ch.4 of *FHC*. And in *FPHFS*, I also exposed the problems of reverse-reductionism in the context of formal science in relation to systems theory.

—*Ontological Reverse-Reductionism*

- There are likewise no privileged ontology, and the door is open for anything in postmodernism (e.g., the equal status of the ontology of Being vs. that of Becoming, as already addressed in Ch.4 of *FHC*—and also in *FPHC*). In *FAE*, I also introduced another version of reverse-reductionism, that is, “the pluralist fallacy,” in the context of understanding aesthetic experience, for instance—although this fallacy has been committed not exclusively in relation to the ontological level (but also at the conceptual, theoretical, and methodological ones).

Sources: From my previous books.

**Table 4.3. The Concepton of Existential Dialectics
(Part I)**

• Sets and Elements

—Sets

- Ex: the Same
- Ex: the Others

—Elements

- Ex: whites in 20th century America (in the set of “the Same”)
- Ex: Iraq during the U.S. invasion in 2003 (in the set of “the Others”)

• Relations, Operations, Functions

—Relations (e.g., “belongs,” “equals to,” “is greater than”)

- Ex: symmetric interactions within the Same (or the Others)
- Ex: asymmetric interactions between the Same and the Others

—Operations (e.g., “and,” “or,” “not,” “if...then”)

- Ex: if the Same oppresses the Others, it will also oppress itself.
- Ex: the Same is not the Others.

—Functions (e.g., goals)

- Ex: the Same is hegemonic in relation to the Others.

• Truth Values

—“1” if True (in Symbolic Logic)

- Ex: the proposition that imperial Japan was hegemonic to China during WWII

—“0” if False (in Symbolic Logic)

- Ex: the proposition that Grenada invaded France in 2003

—“1” & “0” if Both True and False (in Dialectic Logic)

- Ex: the proposition that the rabbit-duck picture refers to a duck

—“~1” & “~0” if Neither True Nor False (or N/A, in Dialectic Logic)

- Ex: the proposition that God really exists
-

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**Table 4.3. The Conception of Existential Dialectics
(Part II)**

• **Axioms, Postulates, Theorems, Principles**

—Axioms

- Ex: the reflexive axiom—“any quantity is equal to itself”

—Postulates

- Ex: the SSS postulate—“if the three sides of a triangle are congruent to their corresponding parts, then the triangles are congruent”

—Theorems (and Principles) in Existential Dialectics

• In Relation to Method

- #1: The formalness-informalness principle
- #2: The absoluteness-relativeness principle
- #3: The partiality-totality principle
- #4: The predictability-unpredictability principle
- #5: The explicability-inexplicability principle

• In Relation to Structure

- #6: The finiteness-transfiniteness principle
- #7: The preciseness-vagueness principle
- #8: The simpleness-complicatedness principle
- #9: The openness-hiddenness principle
- #10: The denseness-emptiness principle

• In Relation to Process

- #11: The change-constancy principle
- #12: The order-chaos principle
- #13: The slowness-quickness principle
- #14: The expansion-contraction principle

• In Relation to Agency

- #15: The theory-praxis principle
- #16: The convention-novelty principle
- #17: The evolution-transformation principle
- #18: The symmetry-asymmetry principle
- #19: The softness-hardness principle

• In Relation to Outcome

- #20: The regression-progression principle
 - #21: The same-difference principle
-

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**Table 4.3. The Conception of Existential Dialectics
(Part III)**

Notes: The categories and examples in each are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Sources: Starting from Ch.6 of *BCPC* and also from other books of mine

**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part I)**

• **In Relation to Method**

—*The Formalness-Informalness Principle*

(*On the Formal Requirements of Logical Systems*)

- The formal requirements of a logical system (e.g., consistency, soundness, and completeness) have both usefulness and non-usefulness, to the extent that, if there are formal systems requiring them, there are alternative ones which do not. Thus, it does *not* exclude classical logics but simply goes beyond both classical and non-classical logics, while learning something from each. There is no formalness without informalness—and vice versa.
- For instance, existential dialectics can make use of both classical logics under certain conditions (e.g., especially, though not exclusively, when they are clear-cut, etc.) and non-classical logics under alternative conditions (especially, though not exclusively, when they are “unknown,” “irrelevant,” “ambiguous,” “possible,” with “different degrees of truth,” empirically inconsistent in a desirable way, etc.). (WK 2008u)
- Family resemblance: e.g., logicalness-nonlogicalness, rationality-nonrationality, etc.
- Sources: From *FPHML*. See also my later books.

—*The Explicability-Inexplicability Principle*

(*On the Underlying Mechanisms of Things*)

- Both explicability and inexplicability are part of the understanding of things. There is no explicability without inexplicability—and vice versa.
- This principle tells us the duality of the research dilemma, in that, if reality can be explained in some ways, it also has its other ways which are not quite explainable, at a given point in time.
- Family resemblance: e.g., underlyingness-regularness, causation-regularness, causation-correlation, etc.
- Sources: Especially from *FPHU*—and also *FPHC*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part II)**

• **In Relation to Method (*cont'd*)**

—*The Predictability-Unpredictability Principle
(On the Occurrence of Events)*

- Both predictability and unpredictability have a major role to play in the occurrence of things, so that neither determinism nor indeterminism wins the centuries-old fight. There is no predictability without unpredictability—and vice versa.
- There are events which are predictable, just as there are those which are not. Or what is regarded as unpredictable at one point in time may turn out to be predictable later, and, conversely, what is deemed as predictable may turn out to not be so predictable. Even in predictability, outcomes are subject to uncertainty, the degree of which varies from case to case.
- Family resemblance: e.g., sureness-arbitrariness, etc.
- Sources: Especially from *FC*. See also my later books.

—*The Partiality-Totality Principle
(On the Relationships between Whole and Parts)*

- The whole is not the sum of the parts. There is no partiality without totality—and vice versa.
- Any inquiry about a phenomenon in the work is to guard against the varieties of (a) reductionism and (b) reverse-reductionism.
- Reductionism and reverse-reductionism can be (i) conceptual, (ii) theoretical, (iii) methodological, and (iv) ontological.
- Family resemblance: e.g., individualisticness-holisticness, partness-wholeness, analysis-synthesis, etc.
- Sources: Especially from *FC*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part III)**

• **In Relation to Method (*cont'd*)**

—*The Absoluteness-Relativeness Principle*
(*On the Multiplicity of Things*)

- There is the multiplicity of things in reality, be they about entities, qualities (or properties), and relationships, such that what is acceptable from one standpoint may not be so from another. For instance, if there is something absolute, there is likewise something relative. There is no absoluteness without relativeness—and vice versa.
- Both absoluteness and relativeness here are also relevant to different modalities often cited in the literature on ontology, such as possibility (e.g., something “can” happen) and its opposite (e.g., impossibility), probability (e.g., something “will” happen) and its opposite (e.g., improbability), and necessity (e.g., something “should” happen) and its opposite (e.g., contingency).
- Family resemblance: e.g., uniformity-diversity, internalness-externalness, immanence-transcendence, etc.
- Sources: From *FPHK*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part IV)**

• **In Relation to Structure**

—*The Finiteness-Transfiniteness Principle*
(*On the Nature of Numbers*)

- If there are finite things, there are likewise transfinite ones. There is no finiteness without transfiniteness—and vice versa.
- To avoid confusion, my usage of the word “transfinite” here differs radically from the one used by Cantor (and other mathematicians) for “relative” infinity—and is more limited, in light of the problems confronting any attempt to understand the idea of infinity, be it by intuition, imagination, and conception (as detailedly analyzed in *Sec. 2.2.3 of FPHG*).
- Instead, by “transfinity,” I allow numbers which can be many times larger—or smaller, for that matter—than the finite things that we encounter in daily life, but they do not have to be related to the idea of infinity at all (which may not exist).
- Of course, there may be some *borderline* cases, in which it is not clear whether the number in question is transfinite (in my usage) or simply a mathematical convenience. A good example of a borderline case is the Planck unit of length for “the smallest space possibly measured in nature,” which is “less than billionths of trillionths of trillionths of an inch” (or something like 1.6×10^{-35} meters).
- That said—my usage of “transfinity” can also resolve (or better, dissolve) an age-old problem in philosophy known as “Zeno's paradoxes” (as already explained in *Sec. 2.2.3 of FPHG*).
- Family resemblance: e.g., boundedness-quasiunboundedness, smallness-largeness, microness-macroness, etc.
- Source: From *FPHG*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part V)**

• **In Relation to Structure (*cont'd*)**

—*The Simplesness-Complicatedness Principle
(On the Interconnection among Things)*

- Both simplesness and complicatedness are vital, without favoring one over the other, in that each is utilized, depending on the basis of the perspectives of nature, the mind, culture, and society. And even when a combination of them is preferred, the dilemma is only shifted to a combinational degree of concern. There is no simplesness without complicatedness—and vice versa.
- In relation to taxonomy, simplesness has its heuristic usefulness, just as complicatedness has its realistic representation, for instance. And in relation to network, simplesness has its economical attractiveness, just as complicatedness has its practical reliability, for instance.
- Family resemblance: e.g., inflexibility-flexibility, standardization-specialization, imperfectness-perfectness, superficiality-depth, shallowness-deepness, economicalness-elaboratedness, plainness-circumspection, onesidedness-multisidedness, etc.
- Sources: Especially from *FIA*. See also my later books.

—*The Denseness-Emptiness Principle
(On the Distribution of Entities in Space)*

- Both density and void are needed, in relation to the mind, nature, culture, and society, albeit in different ways. There is no denseness without emptiness—and vice versa.
- For clarity, the term “void” is used here only as an approximation of emptiness (depending on the degree of the lack of density), since, in physics, it is well known that “empty” space is not really empty all the way, because it can be full of energy (e.g., random quantum fluctuations at the sub-atomic level, and, for that matter, dark energy in the universe) and matter (e.g., different versions of sub-atomic particles, and, for that matter, dark matter in the universe).
- Family resemblance: e.g., fullness-voidness, nearness-farness, concentration-dispersion, etc.
- Sources: First worked out in *FPHUP*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part VI)**

• **In Relation to Structure (*cont'd*)**

—*The Preciseness-Vagueness Principle
(On the Refinement of Things)*

- Both preciseness and vagueness are important, not that one is better than the other, but that both are used, in different degrees of preference, in accordance to the contextual application from the perspectives of nature, the mind, culture, and society. Even when both are used in a combination, the dilemma is shifted instead to one of combinational concern. There is no preciseness without vagueness—and vice versa.
- In relation to taxonomy, preciseness has its taxonomic clarity, just as vagueness has its classificatory flexibility, for instance. And in relation to network, vagueness has its explorative liberty, just as preciseness has its conceptual definitiveness, for instance.
- Family resemblance: e.g., clarity-ambiguity, directness-indirectness, quantitateness-qualitativeness, describability-nondescribability, specificity-obscurity, specificity-generality, thickness-thinness, concreteness-abstractness, etc.
- Sources: Especially from *FIA*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part VII)**

• **In Relation to Structure (*cont'd*)**

—*The Openness-Hiddenness Principle*
(*On the Detection of Things*)

- Reality has its hidden face, just as it is open to outside view in some other ways. There is no openness without hiddenness—and vice versa.
- For instance, in the context of anomalous experience, certain aspects of reality can be open for examination (e.g., the experiment with SPECT images, the transmission of telepathemic bit, and the use of metonymies and metaphors). Other aspects, however, remain hidden, and examples include the elusive deeper nature of spiritual reality in the intangible realm, the undetectability of different branched universes, the underlying mechanisms of signals traveling between different folds of physical space-time, and the dependence on language and the bias for science and logic).
- Family resemblance: e.g., overtness-covertness, publicness-privateness, openness-closedness, transparency-secrecy, openness-biasedness, etc.
- Sources: Especially from *FPHU*. See also my later books.

• **In Relation to Process**

—*The Change-Constancy Principle*
(*On the Alteration of Things*)

- Change occurs over time, although constancy is also allowed. There is no change without constancy—and vice versa.
- Asymmetry undergoes changes over time, so does symmetry.
- Old players fade away, and new ones emerges, with ever new causes and ever new forms.
- Family resemblance: e.g., dynamicness-staticness, instability-stability, etc.
- Sources: First named in *BCPC*. Especially from *FHC*, *FCD*, and *FPHC*. See also other books of mine (from that point on).

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part VIII)**

• **In Relation to Process (*cont'd*)**

—*The Expansion-Contraction Principle
(On the Growth of Things)*

- Entities in the world can both expand in some ways and contract in other ones, as part of their nature. There is no expansion without contraction—and vice versa.
- For instance, in the context of anomalous experience, one of its most fascinating expressions is none other than the analysis of different causes of the slow but steady expansion (and, furthermore, if put in a different way, unfolding) of unconsciousness.
- Family resemblance: e.g., conquest-autarky, rise-fall (or up-down), spread-shrink, extendingness-shorteningness, etc.
- Sources: Especially from *FPHU*. See also my later books.

—*The Slowness-Quickness Principle
(On the Speed of Change)*

- Both slowness and quickness co-exist, with their own internal tension, to the extent that each fights for its own relevance with the other, in accordance to the perspectives of nature, the mind, culture, and society, without one being the victor and the other being the vanquished in the long haul. Even when both are chosen in other cases, this dilemma is only transferred into something else with a combinational character. There is no slowness without quickness—and vice versa.
- In relation to taxonomy, quickness has its efficient usability, just as slowness has its aesthetic appeal, for instance. And in relation to network, quickness has its adventurous readiness, just as slowness has its risk-adverse convenience, for instance.
- Family resemblance: e.g., inconvenience-convenience, passiveness-activeness, gradualness-abruptness, deceleration-acceleration, etc.
- Sources: Especially from *FIA*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part IX)**

• **In Relation to Process (*cont'd*)**

—*The Order-Chaos Principle*
(*On the Pattern of Things*)

- Both order and chaos are vital in the process of change in the world. The preference for order is biased, since it does not give sufficient attention to the vital role of chaos in the transformation of the world (without somehow reducing it for the understanding of order). There is no order without chaos—and vice versa.
- The scientific search for order in the world is often a hidden bias in its ontological obsession with order, since chaos is often treated as the “bad” guy, with order as the “good” guy (for the end goal of science).
- Neither order nor chaos is the final end of the world, and one is not to be treated as the means for the other in the transformation of things. Both are fundamental in their recurrent dialectical interactions with each other over time, without reducing one for the other.
- Family resemblance: e.g., lawfulness-disorder, order-disorder, etc.
- Sources: Especially from *FC*. See also my later books.

• **In Relation to Agency**

—*The Softness-Hardness Principle*
(*On the Force of Change*)

- This has to do with *the force of change* under the category about agency in existential dialectics, in that any change by an agent, be it organic (like humans) or non-organic (like natural objects), can occur in a forceful (aggressive) or gentle (pacific) way, which can come in all shapes and sizes, of course. There is no softness without hardness—and vice versa.
- Family resemblance: e.g., peacefulness-violence, cooperation-competition, dovishness-hawkishness, reward-punishment, peace-war, pacificity-aggression, etc.
- Sources: Especially from *ALD*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part X)**

• **In Relation to Agency (*cont'd*)**

—*The Symmetry-Asymmetry Principle*

(*On the Relationships among Existents*)

- There is no symmetry without asymmetry—and vice versa.
- For instance, the Same can be symmetric and asymmetric towards the Others. But in case of asymmetry, oppression and self-oppression can occur. So, when the Same is asymmetric towards the Others, the Same can also be relatively asymmetric towards itself in self-oppression, just as the Others can be likewise towards themselves.
- The subsequent oppressiveness is dualistic, as much by the Same against the Others and itself, as by the Others against the Same and themselves.
- Both oppression and self-oppression can be achieved by way of downgrading differences between the Same and the Others and of accentuating them.
- This is true, even though not all forms of asymmetry have to be about oppression and self-oppression.
- In addition, from Chapter Three of *FPHG*, symmetry is not perfect, to be understood in an approximate sense under many life circumstances.
- Family resemblance: e.g., strength-weakness, balance-extremity, harmoniousness-unharmmoniousness, reflexiveness-unreflexiveness, equality-inequality, potence-impotence, etc.
- Sources: From all my books, starting with *FHC*. First named in *BCPC*. See, for instance, *FCD* for more details on the Same and the Others.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part XI)**

• **In Relation to Agency (*cont'd*)**

—*The Theory-Praxis Principle*

(*On the Duality of Knowledge*)

- This has to do with the duality of knowledge in existential dialectics, in that, if there is theoretical construction, there is likewise its practical application, both technical and normative. There is no theory without praxis—and vice versa.
- Family resemblance: e.g., discovery-application, knowledge-action, invention-innovation, etc.
- Source: Especially from *FPHE*. See also my later books.

—*The Evolution-Transformation Principle*

(*On the Multiple Kinds of Agency*)

- This principle (and the symmetry-asymmetry principle) are both about *the agency of change*. The word “agency,” in a formal definition, refers to “a person or thing through which power is exerted or an end is achieved.” (MWD 2007b) It therefore does not have to necessarily involve an intelligent lifeform.
- Because of this dual meaning in agency, the evolution-transformation principle is more concerned with *the multiple kinds of agency*, that is, both about the *evolution* in the state of nature (e.g., an object of natural beauty) and the *transformation* in the world of intelligent lifeforms (e.g., a work of art, an air-conditioner, etc.). There is no evolution without transformation—and vice versa.
- And the transformative part of the principle precisely refers to the other dimension in the dual meaning of agency, in giving technology a major role to play in the change of the world, which is something that I extensively analyzed in *FHC* in the context of the technophilic lifeworld, especially though not exclusively since modern times.
- Family resemblance: e.g., nonwillingness-willingness, naturalness-technologicalness, naturalness-nonnaturalness, inorganicness-volution, etc.
- Sources: Especially from *FAE*. See also other books of mine.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part XII)**

• **In Relation to Agency (*cont'd*)**

—*The Convention-Noveltly Principle*

(*On the Nature of Creative Thinking*)

- If there is conventional wisdom, there is likewise novel challenge, to the extent that both convergent and divergent thinking are part of life. There is no convention without novelty—and vice versa.
- In addition, in this context of the convention-novelty principle, there are, in the absence of better words, what I want to call (a) *creative techniques* and (b) *creative traits*, which, when satisfied—in relation to the larger context of the mind, nature, society, and culture—can be used to enhance creative works. The list of creative techniques and traits (as summarized in *Table 4.1* of *FPHCT*) are not exhaustive, of course, but the examples here constitute a great beginning of understanding the structure of creative thinking.
- Yet, lest the reader gets carried away by the euphoria about creative thinking in our time, it should be reminded that creative thinking has its own possibilities and limits (as shown in *Table 2.1* of *FPHCT* on invention), just as it has its own promises and pitfalls (as shown in *Table 3.1* of *FPHCT* on innovation). In the end, it should also be stressed that creative thinking has its own desirability and dark sides (as shown in *Table 4.2* of *FPHCT*).
- This has important daily implications for an average individual, and the word “average” here allows different degrees of variation from one individual to another in a population, at any given point in history.
- Family resemblance: e.g., normalness-nonnormalness, conformity-nonconformity, convergence-divergence, etc.
- Sources: First from *FPHCT*. See also my later books.

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**Table 4.4. The Syntax of Existential Dialectics I:
The Principles
(Part XIII)**

• **In Relation to Outcome**

—*The Regression-Progression Principle
(On the Direction of History)*

- Neither the cyclical nor the linear views are adequate for explaining many phenomena at all levels. There is regression without progression—and vice versa.
- History progresses to more advanced forms, but with a regressive touch. Examples include no freedom without unfreedom, no equality without inequality, and no civilization without barbarity.
- This is not an inevitable law, but merely a highly likely empirical trend.
- Family resemblance: e.g., cost-benefit, undesirability-desirability, badness-goodness, risk-opportunity, etc.
- Sources: From all my books, starting with *FHC*. First named in *BCPC*.

—*The Same-Difference Principle
(On the Metamorphosis of Change)*

- An entity, as it evolves over time, can be both different from and similar to its opposing alternatives and does not have to be solely more different from them over time. There is no similarity without difference—and vice versa.
- Opposites are not absolute in a black-or-white fashion; so, an entity can become relatively more similar to (or more different from) its opposite over time.
- Family resemblance: e.g., homogeneity-heterogeneity, we-they, etc.
- Sources: Especially from *ALD*. See also my later books.

Notes: The features in each principle are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

**Table 4.5. The Syntax of Existential Dialectics II:
The Principles as Short Cuts
(Part I)**

- The principles should be treated with caution, lest misunderstanding occurs, since they do not constitute rigid dualities (or dichotomies).
- The reason is that each pair in an ontological principle consists of two opposites, which are, however, merely short cuts both for multiple variations and degrees, as well as for different interactions with multiple other entities unlike them. In this light, each pair can end up having hundred (or even thousand, if not more) different versions, which interact with hundred (or even thousand, if not more) other entities. There are two clarifications here.
- Firstly, this conception of shortcuts is not mutually exclusive nor absolute, in that the opposites can come in all shapes and sizes, with different degrees. For instance, by analogy, just as there are different degrees of the two colors “white” and “black”—there are likewise different degrees of the opposites in each ontological pair, to the extent that there can be multiple entities (not only two) interacting with each other in each pair.
- And secondly, this conception of shortcuts do not ignore other possible entities in interacting with the two opposites (with their different versions) in each pair. For instance, by analogy, there are not only the two colors “white” and “black” as opposites, since there are other colors too besides them like “yellow,” “green,” “purple,” or else. The same logic can be applied to each ontological pair, in that they also interact with other entities, not with only two of them (with their different versions).
- Therefore, with these two clarifications in mind—each pair in an ontological principle serves only as an abbreviation for something more complicated and, therefore, although it contains two opposites, it should not be confused as a duality (dualism).

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**Table 4.5. The Syntax of Existential Dialectics II:
The Principles as Short Cuts
(Part II)**

- Existential dialectics rejects any dualism (or dichotomy) as too rigid and instead allows the multiplicity of entities, to the extent that between the two opposites in each pair exist many other alternatives to choose from. They are named in that short form for aesthetic elegance, instead of listing all possible entities between the two opposites in the title.

- To be dialectic is to go beyond any rigid dichotomy and transcend into something different altogether in the long haul. One may be tempted to call the dialectic logic here with a different name like existential “multilectics” (instead of “dialectics”), but this naming is incorrect (or even misleading), for the two reasons aforesated.

- After all, each ontological pair come in all shapes and sizes (with different degrees) and do not exist by themselves but also interact with other entities unlike them. The virtue of revealing an ontological pair is to show how they relate within themselves (in multiple versions) and also interact with others unlike them (also in multiple versions).

- This will be clear in the table on “the dialectic constraints imposed by the principles.”

Source: From Ch.1 of *FPHK*

**Table 4.6. The Syntax of Existential Dialectics III:
The Principles as Family Resemblances**

- Each ontological principle is generic, with some other comparable ontological pairs to be put in the same family (like a *family resemblance*). Ludwig Wittgenstein (1953) once suggested the idea of “family resemblance” in explaining different games classified under the same family called *games*.
- Why should, for instance, playing football and chess as playing “games,” when it is well understood that football is not the same as chess? The answer is that, although each game is different and has different rules, many of them (though not all) share, more or less, some commonalities (e.g., scoring as necessary for winning).
- And this is so, even though some games share more than some others in any given selection of criteria, and no two games are exactly identical. So, his point here is that there is no essential core which is common to all games, and the best that one can look for is some characteristics which are common to many (but not all) games. (A. Biletzki 2006)
- By the same logic—in the previous section on selection criteria, the flexibility-inflexibility pair can be put in the family resemblance of the simpleness-complicatedness principle, although the two pairs are not exactly identical. Likewise, the directness-indirectness pair can be put in the family resemblance of the preciseness-vagueness principle, although, again, the two pairs are not exactly identical.
- In this sense, which specific pair in a family should be used to designate the name of the family can be at times a bit arbitrary, but with good reason.
- For illustration, in the context of method, the partiality-totality principle can take the different form like individualisticness-holisticness, just as the explicability-inexplicability principle can take the different form like underlyingness-regularness—although each two pairs are not exactly identical and have slightly different meanings and usages. A more comprehensive listing of this family resemblance for all other principles is shown in the table on the syntax of existential dialectics.

Source: From Ch.1 of *FPHK*

**Table 4.7. The Syntax of Existential Dialectics IV:
The Dialectic Constraints Imposed by the Principles
(Part I)**

• **Co-Existent and Asymmetric**

- The principles, as they constitute the syntax of existential dialectics, are dialectic in character, such that, when they are applied, they impose dialectic constraints on how reality is to be understood. Consider, say, the symmetry-asymmetry principle as an illustration here, in order to summarize two main characters of the dialectic constraints in question.
- Firstly, to be dialectic here is to go beyond the narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme), be they about “self” vs. “world,” “freedom” vs. “unfreedom,” “barbarity” vs. “civilization,” “individuality” vs. “communality,” and so on.
- One way to do so (to go beyond) is to consider them all in terms of co-existence (without favoring one over the rest). For instance, my theory of “post-civilization” (to be summarized later in the section on the pragmatics of existential dialectics) is to go beyond barbarity and civilization in terms of understanding barbarity and civilization as being co-existent. And the same logic can be said in relation to my theories of “post-democracy,” “post-capitalism,” and others (also to be introduced later in the section on the pragmatics of existential dialectics), in regard to freedom vs. unfreedom, equality vs. inequality, communality vs. individuality, spirituality vs. materiality, and so on.
- But to consider them all (in the dichotomies—and, for that matter, in any rigid multi-dimensional classificatory scheme) as co-existent is not the same as to imply that the opposites in any classificatory scheme are all equal, since, in accordance to the symmetry-asymmetry principle (as an illustration here), if they are equal in terms of being considered as co-existent, they are asymmetric in terms of being unequal in dialectic interaction (e.g., X can be more dominant than Y in case A, or Y is more dominant than X in case B).

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**Table 4.7. The Syntax of Existential Dialectics IV:
The Dialectic Constraints Imposed by the Principles
(Part II)**

- For this reason, there are different versions of “post-democracy” and “post-capitalism” in my theories. As an illustration, in version I of the theory of post-democracy, freedom is more dominant than equality, whereas in version II of the theory of post-democracy, equality is more so than freedom.
- But this “X more than Y” has to be understood in the context of dialectic logic (not in conventional logic), in that both “X” and “Y” are important in post-democracy (in the context of dialectic logic), but in an asymmetry way. By contrast, in conventional logic, it often favors one over the other—be it in regard to privileging freedom over equality in Fascism, favoring freedom relatively more than equality in Liberal Democracy, or favoring equality relatively more than freedom in Socialist Democracy. In the latter two cases (about Liberal Democracy and Socialist Democracy), the difference between dialectic logic and conventional logic can be one in degree, not in kind—in this sense, albeit not in other senses.
- The same logic can be said about the relationships between individuality and communality, between spirituality and materiality, and between formal legalism and informal legalism in the different versions of my theory of post-capitalism.

• **Transcendent**

- Secondly, to be dialectic is to go beyond the narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme) in another way, this time, in a transcendent way, that is, in exploring other possibilities or even other issues not considered within the narrow confines of narrow dichotomies (and, for that matter, any rigid multi-dimensional classificatory scheme).

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**Table 4.7. The Syntax of Existential Dialectics IV:
The Dialectic Constraints Imposed by the Principles
(Part III)**

- As an analogy, to go beyond the narrow color dichotomy of “black” and “white” is not just to choose both “black” and “white” (as in the first meaning) but also to explore other color options (e.g., “green,” “purple,” “blue,” etc.—and, alternatively, “shade,” “line,” “curve,” etc.). By the same logic, to go beyond “democracy” is to transcend democracy (as in version III of the theory of “post-democracy”) and to explore other possibilities of lifeforms (e.g., floating consciousness, hyper-spatial consciousness, etc., to live beyond the narrow obsession with freedom and equality).
- This dialectic character of the principles in existential dialectics has important implications for the pragmatics of existential dialectics (as will be clear shortly, in the section on the pragmatics of existential dialectics).

Notes: The examples here are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Sources: First explicitly stated in *ALD*. Also from all other books of mine.

**Table 4.8. The Syntax of Existential Dialectics V:
Further Clarifications
(Part I)**

• **Pioneering**

- Firstly, the total number of ontological principles is unknown, to be discovered later, as our knowledge of the world becomes more advanced.
- Consequently, the principles as introduced in my books are not exhaustive, with new ones being added, whenever more of them are discovered in later research.
- At least, future generations can pick up where I leave off and continue the discovery.
- In this sense, my work should be treated as a pioneering effort for the development of a systematic, comprehensive analysis of a new general ontology for the future of knowledge.

• **Flexible**

- Secondly, the principles are not rigidly classified, as they can be reclassified in a different way.
- For instance, the preciseness-vagueness principle is classified under the category of “structure” but can be reclassified under the category of “method,” although in so doing, it has a different meaning in the context of method.
- The same logic applies to the same-difference principle under the category of “outcome,” which can be reclassified under the category of “structure,” although in so doing, once more, it has a different meaning in the context of structure.

• **Mutually Constraining**

- Thirdly, the principles are to be understood together, not that each principle is to be analyzed independently of others. After all, the principles are mutually constraining, in that they work together as a whole.

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**Table 4.8. The Syntax of Existential Dialectics V:
Further Clarifications
(Part II)**

• **Selectively Useful**

—Fourthly, the principles are relevant to all subject matters, but some principles are more useful to some subject matters than others—as implied in the symmetry-asymmetry principle. This is true, even if different studies of the same kind can yield different views about the degree of relevance for each ontological principle, depending on the specific nature of a research in question, needless to say.

• **Anti-Reductionistic**

—And fifthly, the principles constitute only two levels of analysis, this time, at the ontological and methodological levels—while other levels of analysis (from the perspectives of the mind, nature, society, and culture) are also needed, in order to understand reality in its totality (as explained in the section on “sophisticated methodological holism,” so as to avoid the dual dangers of reductionism and reverse-reductionism).

Notes: The examples here are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Sources: From my previous books like *FHC*, *FCD*, *FPHC*, *BDPD*, *BCPC*, *BNN*, *FC*, *FAE*, and so on.

**Table 4.9. The Syntax of Existential Dialectics VI:
The Dilemma of Specific vs. General Ontology
(Part I)**

- Ontology is often more complicated and imposes some seemingly insurmountable difficulties concerning what constitutes a kind of ontology which can be valid enough to be accepted by the wider intellectual community in question. An excellent example concerns what I want to call *the dilemma of ontology* in relation to the relationship between “specific ontology” and “general ontology.” (M. Bunge 1999; R. Corazzon 2007)
- On the one hand, “general ontology,” as Mario Bunge (1999) put it, “studies all existents.” But, on the other hand, “special ontology studies one genus of thing or process—physical, chemical, biological, social, etc.” (M. Bunge 1999; R. Corazzon 2007)
- Consequently, the relationship between the former and the latter is that, as an illustration, “whereas general ontology studies the concepts of space, time, and event, the ontology of the social investigates such general sociological concepts as those of social system, social structure, and social change.” (M. Bunge 1999; R. Corazzon 2007)
- With this formal definition in mind, the relationship between the two forms of ontology only poses *the dilemma of ontology*, in that general ontology is possible to the extent that its general constructs must be broad enough to serve as the “lowest common denominator” for all disciplines, but this character of the lowest common denominator is not only hard to find but also its usefulness is limited. (WK 2008b)
- But specific ontology fares no better either, in that its specific constructs primarily serve a specific discipline in question, although other disciplines can appropriate them for their own purposes, but in a different context (especially, though not exclusively, when used as a metaphor from one field to another). For instance, the Kantian category of understanding under the heading of “quantity” constitutes a type of specific ontology, which is specific to the discipline of mathematics, although other disciplines can make use of the categories in their own context.

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**Table 4.9. The Syntax of Existential Dialectics VI:
The Dilemma of Specific vs. General Ontology
(Part II)**

- A solution lies in my proposal of “sophisticated methodological holism,” which requires all levels of analysis in any subject matter. See the tables on sophisticated methodological holism, and on reductionism and reverse-reductionism, for more details.

Source: From *Sec. 1.4* of *FPHK*

**Table 4.10. The Syntax of Existential Dialectics VII:
Types of Inappropriate Family Resemblances**

• **Inadequate Family Resemblances**

- Ex: consistency-inconsistency: the formalness-informalness principle
- Ex: cognition-noncognition: the formalness-informalness principle

• **Compound Family Resemblances**

- Ex: reality-nonreality: the formalness-informalness principles, the absoluteness-relativeness principle
- Ex: normality-abnormality: the symmetry-asymmetry principle, the density-emptiness principle, the convention-novelty principle, the same-difference principle
- Ex: structure-context: the simpleness-complicatedness principle, the theory-praxis principle
- Ex: freedom-unfreedom: the symmetry-asymmetry principle, the expansion-contraction principle
- Ex: morality-immorality: the denseness-emptiness principle, the symmetry-asymmetry, the same-difference principle
- Ex: particularness-universality: the preciseness-vagueness principle, the simpleness-complicatedness principle
- Ex: pureness-mixedness: the absoluteness-relativeness principle, the simpleness-complicatedness principle, the same-difference principle
- Ex: shortsightedness-foresightedness: the partiality-totality principle, the simpleness-complicatedness principle
- Ex: shorttermness-longtermness: the partiality-totality principle, the simpleness-complicatedness principle, the slowness-quickness principle

Notes: The examples here are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Source: First summarized in *BEPE* (and updated in later books)

Table 4.11. The Semantics of Existential Dialectics

• Abstract Structure vs. Specific Meanings

- The syntax of existential dialectics so understood in terms of ontological principles only gives us the structure of ontology in the world, in an abstract (general) sense. These principles by themselves do not tell us the specific meanings in a given context.
- In order to grasp the specific meanings of the principles in a given context, it is necessary to study the semantics of existential dialectics. And the analysis of the ontological principles as family resemblances in the section on syntax is only a starting point (and thus overlaps a bit with the semantics of existential dialectics here).
- With this caveat in mind, the reason that I have often gone in great lengths in my previous books on different subjects is to explain the specific meanings of the principles when applied in different contexts.

• Specific Meanings in Specific Fields

- For instance, in *FPHST*, I used the first three principles (i.e., the change-constancy principle, the regression-progression principle, and the symmetry-asymmetry principle) to propose “the perspectival theory of space-time,” for a better way to understand space and time—especially, though not exclusively, in relation to future post-human history (as summarized in *Table 3.6*, *Table 3.7*, *Table 3.8*, and *Table 3.9*). In so doing, I had to introduce concepts and theories specific to the field of physics and other related fields (e.g., “absolute space” and “absolute time” in “classical mechanics” and “relative space-time” in “the theory of relativity”).
- In *BNN*, I also exploited the three principles to propose the “transcendent” approach to the study of genes and memes as a new way to understand the interaction between nature and nurture. In so doing, I had to explore concepts and theories in the world of evolutionary theory (e.g., “mutation,” “variation,” “adaptation,” “selection,” and “inheritance” in Darwinian evolutionary theory) and neural biology (e.g., “chromosome,” “gene,” “DNA,” “RNA,” “protein,” “neuron,” “neural network,” and “behavior”).

Notes: The categories and examples in each are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Sources: First explicitly stated in *ALD*. Also from all other books of mine.

**Table 4.12. The Pragmatics of Existential Dialectics
(Part I)**

• **The Two-Way Street Connecting Theory and Meta-Theory**

- The pragmatics of existential dialectics is not a one-way street (that is, using the ontological principles for theoretical insights in praxis) but a two-way one, that is, (a) from meta-theory to theory, and (b) from theory to meta-theory.
- (a) On one side of the street, the ontological principles can inspire some theoretical insights in praxis, that is, in relation to some specific fields.
- (b) On the other (opposing) side of the street, however, the study of a subject matter in the specific fields in turn reveals some more hitherto unknown ontological principles to be discovered and identified. For this reason, three new principles were added in *FC*, one in *F AE*, and two in *ALD*, on top of the original three in *BCPC*—after some research on the specific subject matters.

• **Direct and Indirect Applications**

—*Direct*

- The logic of existential dialectics can shed some theoretical insights on diverse phenomena in the world, and good instances are the pertinent use of the principles of existential dialectics for the theoretical insights on the freedom/unfreedom dialectics, the equality/inequality dialectics, and the wealth/poverty dialectics in my previous works.
- My latest books like *FPHST* and *BNN* also use the principles to reveal some theoretical insights on the perspectives of space and time (as in *FPHST*) and of nature and nurture (as in *BNN*).

—*Indirect*

- The theoretical insights can further be used to reveal other phenomena directly from them (*viz.*, the theoretical insights) and therefore indirectly from the principles themselves. A good instance is the use of the theoretical insights on the freedom/unfreedom and equality/inequality dialectics for the understanding of the civilization/barbarity dialectics.

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**Table 4.12. The Pragmatics of Existential Dialectics
(Part II)**

• **Direct and Indirect Applications (*cont'd*)**

- Even in indirect applications, however, a phenomenon under study can still be directly related back to the principles themselves. In the example as cited above, the civilization/barbarity dialectics can be directly related to the principles of existential dialectics without the intermediate role of the freedom/unfreedom and equality/inequality dialectics.

• **Multiple Levels of Application**

- The theoretical insights can be applied to different levels of analysis, even though in a given example, it may refer to one level only. For instance, in the example concerning the freedom/unfreedom dialectics, it can be used at the structural level (e.g., in relation to the theory of cyclical progression of hegemony), but it can be exploited as well for other levels (e.g., the theory of post-capitalism at the institutional level).

Notes: The categories and examples in each are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Sources: From Ch.6 of *BCPC*. See also other books of mine.

**Table 4.13. The Freedom-Unfreedom Dialectics
(Part I)**

• On Having*—In Relation to the Technological*

- (1) if freer from submission to Nature, then less free from ecological degradation (Deep and Social Ecology), even if in a hi-tech form
- (2) if freer from technological inconvenience / backwardness, then less free from technological control and the loss of privacy
- (3) if freer from technological (material) backwardness, then less free from the abusive (barbaric) maltreatment of the primitive Others

—In Relation to the Everyday

- (1) if freer from abject poverty, then less free from artificial needs/discontents (Frankfurt School)
- (2) if freer from sensual suppression, then less free from violent sublimation (Freud)
- (3) if freer from the snobbishness of high culture, then less free from the shabbiness (leveling-off effect) of mass culture (Tocqueville)
- (4) if freer from the inefficiency of traditional “compassionate economy,” then less free from the bondage of a “ruthless [competitive] economy” (Keynes)
- (5) if freer from anarchy in the state of nature (system fragmentation), then less free from government regulations and controls in system integration

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**Table 4.13. The Freedom-Unfreedom Dialectics
(Part II)**

• **On Belonging**

—*In Relation to the Good and the Just*

- (1) if freer from disciplinary society, then less free from society of control (Foucault)
- (2) if freer from the tyranny of one or a few, then less free from the tyranny of the majority (or sometimes, minority veto)
- (3) if freer from elitist decision making, then less free from political gridlock/cleavage
- (4) if freer from arbitrary (discretionary) administration, then less free from bureaucratic irrationality (Weber) and legal trickery (loopholes)

• **On Being**

—*In Relation to the True*

- (1) if freer from unscientific dogmas, then less free from instrumental abyss (nihilism). Or conversely, if freer from meaninglessness, then less free from dogmas.
- (2) if freer from the bondage of partiality/partisanship (e.g., prejudice, discrimination), then less free from the danger of impartiality and neutrality (e.g., opportunism, unrealisticness, lack of compassion, inaction)
- (3) if freer from making generalizations, then less free from being unable to understand much of anything

—*In Relation to the Holy*

- (1) if freer from collective conscience, then less free from social loneliness
- (2) if freer from religious absoluteness, then less free from spiritual emptiness

—*In Relation to the Beautiful/Sublime*

- (1) if freer from artistic non-autonomy, then less free from aesthetic disillusion (deconstruction)
-

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**Table 4.13. The Freedom-Unfreedom Dialectics
(Part III)**

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Sources: A reconstruction from Ch.10 of *FCD*, based on *FHC*

**Table 4.14. The Equality-Inequality Dialectics
(Part I)**

• **On Having**

—*In Relation to the Technological*

- (1) if more equal in treating Nature with spiritual unity, then less equal in suppressing the dominant drive to transcend it altogether

—*In Relation to the Everyday*

- (1) if more equal in building social plurality, then less equal in leveling-off effects (e.g., the subsequent relative intolerance of high/intellectual ethos in mass culture industry)
- (2) if more equal in socioeconomic distribution beyond a certain point, then less equal in efficiency (e.g. resentment, the erosion of work ethics)
- (3) if more equal in urging an affirmative action program, then less equal in creating victim mentality (in oneself), stigma (from others), reverse discrimination (against the once privileged), and mediocracy (against the more able)

• **On Belonging**

—*In Relation to the Good and the Just*

- (1) if more equal in banning monarchic/oligarchic exclusion, then less equal in producing “the tyranny of the majority” or of “minority veto”
- (2) if more equal in encouraging participatory decision making, then less equal in inducing political divisiveness (gridlock/cleavage in power blocs) and organizational oligarchy
- (3) if more equal in institutionalizing a decentralized bureaucracy, then less equal in falling into more territorial/turf politics (intrigues)

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**Table 4.14. The Equality-Inequality Dialectics
(Part II)**

• **On Being**

—In Relation to the Beautiful / Sublime

(1) if more equal in accepting diverse styles (“anything goes” mentality), then less equal in artistic good quality (in leveling-off effects against the best)

—In Relation to the True

(1) if more equal in tolerating multiple viewpoints (no matter how extreme), then less equal in epistemic standards

—In Relation to the Holy

(1) if more equal in celebrating any cults and sects (no matter how questionable), then less equal in spiritual depth and authenticity

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they mutually exclusive. And some can be easily reclassified elsewhere. As generalities, they allow exceptions.

Sources: A reconstruction from Ch. 10 of *FCD*, based on *FHC*

**Table 4.15. The Duality of Oppression in Existential Dialectics:
Oppression and Self-Oppression
(Part I)**

• **From the Same to the Others and Itself**

—The Oppression by the Same against the Others

• *By way of downgrading differences*

—Ex: on judiciary caprice for corporate crimes (*Sec.2.2.1.2.1*)

—Ex: on the deceptive politics of liberation (*Sec.3.5*)

—Ex: on the humanitarian mystique (*Sec.4.4*)

—Ex: on the fad of emotional intelligence (*Sec.5.3*)

• *By way of accentuating differences*

—Ex: on the legal sophistry of self-defense (*Sec.2.3*)

—Ex: on the legal semantics of proportionality (*Sec.2.4*)

—Ex: on the tricky politics of external threat (*Sec.3.4*)

—Ex: on the appeal of the Far Right for democracy (*Sec.5.4*)

—Ex: on the democratic axis of evil (*Sec.5.5*)

—Ex: on the democratic way of brutality and revenge (*Sec.5.6*)

—Ex: on democratic autocracy (*Sec.6.4*)

—The Oppression by the Same against Itself

• *By way of downgrading differences*

—Ex: on the politics of fear (*Sec.2.2*)

—Ex: on the trickery of compassionate conservatism (*Sec.3.2*)

—Ex: on the deceptive politics of patriotism (*Sec.3.3*)

• *By way of accentuating differences*

—Ex: on the caprice of due process on domestic suspects
(*Sec.2.2*)

—Ex: on the false security/freedom dilemma (*Sec.6.5.2*)

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**Table 4.15. The Duality of Oppression in Existential Dialectics:
Oppression and Self-Oppression
(Part II)**

• **From the Others to the Same and Themselves**

—The Oppression by the Others against the Same

• *By way of downgrading differences*

–Ex: on judiciary caprice in the reverse direction (*Sec.2.2.1.2.2*)

–Ex: on equal pay (*Sec.6.2.1.1*)

–Ex: on equal representation (*Sec.6.2.1.2*)

–Ex: on affirmative action program (*Sec.6.3.1.1*)

–Ex: on same-sex marriage (*Sec.6.3.1.2*)

• *By way of accentuating differences*

–Ex: on sexual harassment (*Sec.6.2.2.1*)

–Ex: on physical violence (*Sec.6.2.2.2*)

–Ex: on sexual exploitation (*Sec.6.2.2.3*)

—The Oppression by the Others against Themselves

• *By way of downgrading differences*

–Ex: on the reverse-class mystique (*Sec.4.2*)

–Ex: on the reverse-black mystique (*Sec.4.3*)

–Ex: on self-discrimination by downgrading (*Sec.6.3.2.2*)

• *By way of accentuating differences*

–Ex: on self-discrimination by accentuating (*Sec.6.3.2.1*)

Notes: The examples are solely illustrative (not exhaustive), nor are they mutually exclusive. As generalities, they allow exceptions. Also, both forms of oppression co-exist in all of the examples, so the listing of them are only meant in a relative, not absolute, sense.

Source: A summary of the sections (as cited) in Chs.2-6 of *BDPD*. See text for more info and references.

**Table 4.16. The Structure of Existential Dialectics I:
The Freedom/Unfreedom and Equality/Inequality Dialectics**

- Each freedom and equality produces its own unfreedom and inequality, regardless of whether the pair occurs in political society (with the nation-state), in civil society (with some autonomy from the state), or elsewhere (e.g., in the private sphere of individual homes)—and regardless of whether freedom and equality are understood as “negative” or “positive.”
- Oppression is dualistic, as much by the Same against the Others and itself, as by the Others against the Same and themselves.
- Both forms of oppression and self-oppression can be achieved by way of downgrading differences (between the Same and the Others) and of accentuating them.
- The relationships are relatively asymmetric between the Same and the Others and relatively symmetric within them. This is true, even when the Same can be relatively asymmetric towards itself in self-oppression, just as the Others can be likewise towards themselves.
- Symmetry and asymmetry change over time, with ever new players, new causes, and new forms.

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions. “Negative” freedom is freedom “from” (e.g., freedom from poverty), whereas “positive” freedom is freedom “to” (e.g., freedom to the state of enlightenment). “Negative” equality is “procedural” equality (e.g., equality of opportunity), while “positive” equality is “substantive” equality (e.g., equality of outcome). Existential dialectics impose constraints on freedom and equality in democracy, non-democracy, and post-democracy. There is no utopia, in the end; even should there be one, dystopia would exist within it.

Sources: From *Table 1.5* of *BDPD*—and also from *FHC*, *FCD*, and *FPHC*

**Table 4.17. The Structure of Existential Dialectics II:
The Wealth/Poverty Dialectics**

- There is no wealth without poverty, just as there is no poverty without wealth.
- The wealth/poverty dialectics occurs in the realms of having, belonging, and being, in relation to the material, relational, and spiritual.
- The wealth/poverty dialectics also expresses itself at the multiple levels of analysis in accordance to methodological holism, be they about the micro-physical, the chemical, the biological, the psychological, the organizational, the institutional, the structural, the systemic, the cultural, and the cosmological.
- The wealth/poverty dialectics is a different manifestation of existential dialectics in general, subject to the principles in its logic of ontology—just as the freedom/unfreedom and equality/inequality dialectics are likewise.
- There is no economic utopia, in the end; even should there be one, dystopia would exist within it.

Notes: The main points here are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.
Sources: From *BCPC*. See also *FCD* and *FHC*.

**Table 4.18. The Structure of Existential Dialectics III:
The Civilization/Barbarity Dialectics**

- There is no civilization without barbarity.
- The civilization/barbarity dialectics applies in the four civilizing processes (e.g., the rationalizing process, the pacifying process, the stewardizing process, and the subliming process).
- The civilization/barbarity dialectics is another (different) manifestation of existential dialectics in general, subject to the principles in its logic of ontology—just as the freedom/unfreedom and equality/inequality dialectics and the wealth/poverty dialectics are likewise.
- There is no utopia, in the end; even should there be one, dystopia would exist within it.

Notes: The main points here are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.

Sources: From *BCIV*. See also *FCD*, *FHC*, and *BDPD*.

**Table 4.19. The Double Sides of Virtual Organizations
(Part I)**

• Psychological

- Ex: virtual psychosis
- Ex: impersonality and loneliness in quaternary social relations

• Organizational

- Ex: the race for power and interests
- Ex: the world of unequal successes
- Ex: the bureaucratic life of its own
- Ex: lesser accountability and transparency

• Economic

- Ex: the economic divides
- Ex: the erosive impact of commercialization

• Political

- Ex: the anti-authoritarian myth
- Ex: different power struggles among groups (e.g., Conservative, Reformist, Radical)

• Structural

- Ex: different localities (e.g., climates, scenery)
- Ex: divided domains (e.g., core, peripheral, sub-peripheral)
- Ex: substitution effect of social capital

• Systemic

- Ex: uneven advances in transportation and communications, and geographical migration

• Cultural

- Ex: conflicting civilizational fabrics (e.g., Confucian, Islamic, Western)
- Ex: the bias of the Liberal Democratic agenda
- Ex: the addiction to moral fanaticism

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**Table 4.19. The Double Sides of Virtual Organizations
(Part II)**

Notes: These categories and examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they mutually exclusive. Since they are generalities, exceptions are expected.

Source: From Ch.7 of *FCD*

**Table 4.20. Beyond the World of Titans,
and the Remaking of the World Order**

• **Hyper-Empires**

- Ex: The Chinese Union
- Ex: The Indian Union

• **Meso-Empires**

- Ex: The European Union
- Ex: The North American Union

• **Micro-Empires**

- Ex: The Latin American Union
- Ex: The Middle Eastern Union

• **The Rest of the World**

—Odd Powers

- Ex: Japan
- Ex: Russia

—The Poor Club

- Ex: The African Union

—Ambivalent Regions

- Ex: Southeast Asia
- Ex: Oceania
- Ex: South Asia
- Ex: Central Asia
- Ex: Southern/Eastern Europe
- Ex: North Africa
- Ex: Central America
- Ex: Others (e.g., the Korean peninsula)

Source: A summary of Chs.2-5 (of *BWT*)

**Table 4.21. The Origins
of Authoritarian Liberal Democracy**

- **The Geopower of Nature (Ch.4 of *ALD*)**
 - Ex: Power Character and Geographical Strategy
 - Ex: Living Space and Territorial Expansion
 - Ex: Strategic Heartland and Containment

- **The Biopsychology of the Mind (Ch.5 of *ALD*)**
 - Ex: The Bell Curve and Mass Intelligence
 - Ex: Group Analysis and Mass Knowledge
 - Ex: Groupthink and Elite (Mis)calculation

- **The Disciplinary Control of Society (Ch.6 of *ALD*)**
 - Ex: Social Organizations of Ruthlessness
 - Ex: Social Institutions of Greed
 - Ex: Social Structure of Exclusion
 - Ex: Social Systems of Violence

- **The Molding Force of Culture (Ch.7 of *ALD*)**
 - Ex: The Tradition of Conquest
 - Ex: The Rationalization of Unreason

Notes: The examples in each category are solely illustrative (not exhaustive), and they are also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions.

Source: A summary of Chs.4-7 of *ALD*

**Table 4.22. The Theory of Post-Democracy I:
The Priority of Freedom over Equality
(Part I)**

• **Differences**

—*For the aggressive Lions (the strong Elitists)*

- Setting up rank distinctions among unequals (e.g., between inferior humans and superior post-humans, or later among inferior post-humans and superior ones, relatively speaking)
- Yearning for being not only distinguished from unequals, but also the first among equals (the best of the very best)
- Soul-searching for a high spiritual culture (not the trashy one for the masses). Mass culture is a dirty joke for them.

—*For the manipulative Foxes (the weak Counter-Elitists)*

- Seeking a gentle hegemony by way of more communitarian concerns (for inferior humans and, later, inferior post-humans)
- Being more sympathetic to less formal-legalistic institutions and values

• **Similarities**

—*For both Lions and Foxes*

- Exploring different spheres of non-human consciousness in the cosmos (something vastly superior than the human one)
- Recognizing the democratic illusions (e.g., no freedom without unfreedom, no equality without inequality, or simply no justice without injustice, and vice versa)

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**Table 4.22. The Theory of Post-Democracy I:
The Priority of Freedom over Equality
(Part II)**

Notes: The two callings and examples in each category are solely illustrative (not exhaustive), since there will be many different post-human value ideals in the distant future of post-human civilization. The comparison is also relative (not absolute) towards post-democracy, so this is not just a version of free-market democracy (nor Fascism/Nazism, as shown in the table later on democracy, non-democracy, and post-democracy). Nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of post-human post-democratic ideals need to be further developed in future after-postmodern history, as they will be different from the ones we now know. The point here is to solely give an extremely rough picture of a small part of the world to come that we have never known.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.23. The Theory of Post-Democracy II:
The Priority of Equality over Freedom**

• **Hybrid Versions of**

- Ex: the Trans-Feminine Calling
- Ex: the Trans-Sinitic Calling
- Ex: the Trans-Islamic Calling
- Ex: the Trans-Outerspace Calling

• **Qualifications**

- These four versions of post-capitalist value ideals need not automatically be post-democratic, just as capitalism does not necessarily mean democracy. They are two different entities—though closely related.
- But up to a certain threshold of elevating equality at the farther expense of freedom, the democratic ideals will be overcome and cease to exist.
- The overcome will not be socialist or communist, but post-democratic with no freedom without unfreedom and no equality without inequality, subject to the constraints of existential dialectics.

Notes: The callings are solely illustrative (not exhaustive), since there will be many different post-human value ideals in the distant future of post-human lifeforms. The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of post-human post-democratic ideals need to be further developed in future after-postmodern history, as they will be different from the ones we now know. The point here is to solely give an extremely rough picture of a small part of the world to come that we have never known.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.24. The Theory of Post-Democracy III:
The Transcendence of Freedom and Equality
(Part I)**

• **Transcending Freedom in Floating Existence**

- Freedom*: seeking an ultimate elimination of the body. Being without the body. The aim is to transcend freedom in the end into a metaphysical state (i.e., beyond the physique).
- Unfreedom*: yet facing difficult trade-offs. The sacrifice of bodily existence and its joyfulness. An eternal boredom in floating existence in dark deep space, though with alternative pleasures. There is no free lunch even in the state of transcending freedom.

• **Transcending Equality in the Rivalry of Cosmic Hegemony**

- Inequality*: competing to outlast other lifeforms in floating existence, or just marginalizing them for one's hegemonic expansiveness in the rest of the cosmos (and even beyond). Universalism is only for the mediocre.
- Equality*: accepting only those of one's rank as equal partners in the vast spacetime for cosmic supremacy. Even here, the aim is to transcend equality into a metaphysical state.

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**Table 4.24. The Theory of Post-Democracy III:
The Transcendence of Freedom and Equality
(Part II)**

Notes: Do not confuse this transcendence of freedom and equality (as one version of post-democracy) with the naïve temptation to transcend the freedom/unfreedom and equality/inequality dialectics. Existential dialectics hold true for freedom and equality in all cultures and societies—past, present, or future (i.e., democracy, non-democracy, and post-democracy), regardless of whether freedom and equality are conventionally understood as “negative” or “positive.”

Also, the two features and examples in each are solely illustrative (not exhaustive), since there will be many different post-human value ideals in the distant future of post-human lifeforms. The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of post-human ideals even for these radically alien floating lifeforms (and others unknown to us) need to be further developed in future after-postmodern history, as they will likely be different from the ones herein illustrated. The point here is to solely give a very rough picture of a small part of the extremely alien world to come that we have never known.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.25. Democracy, Non-Democracy, and Post-Democracy
(Part I)**

• **Democracy**

—*Theoretical Constructs*

- The pursuit of freedom and equality (in various degrees), regardless of whether freedom and equality can be understood as “negative” or “positive”
 - (1) more equality than freedom: The relative priority of the good over the right
 - (2) more freedom than equality: The relative priority of the right over the good

—*Types*

- Only (1): Different versions of communitarian moral universalism
- Only (2): Different versions of liberal moral universalism
- (1) or (2): Different versions of anarchic (non-nation-state) moral universalism
- (1) or (2): Different versions of postmodern moral localism

• **Non-Democracy**

—*Theoretical Constructs*

- The focus on (1’) equality or (2’) freedom, but not both, regardless of whether freedom and equality can be understood as “negative” or “positive”

—*Types*

- Only (1’): Different versions on the Far Left (e.g., Stalinism, Robespierrianism)
 - Only (2’): Different versions on the Far Right (e.g., Nazism, absolute monarchism)
-

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**Table 4.25. Democracy, Non-Democracy, and Post-Democracy
(Part II)**

• **Post-Democracy**

—*Theoretical Constructs*

- The priority of (1'') equality over freedom, or (2'') freedom over equality, or (3'') the transcendence of freedom and equality, regardless of whether freedom and equality are “negative” or “positive.” In degree, (1'') or (2'') is less than (1') or (2') but more than (1) or (2)—respectively.
- Like democracy and non-democracy, post-democracy is also subject to the freedom/unfreedom and equality/inequality dialectics (or existential dialectics in general). Unlike them, post-democracy acknowledges the constraints of existential dialectics and no longer value freedom and equality as sacred virtues. There is no utopia, in the end; even were there one, dystopia would exist within it.

—*Types*

- (1''): Different versions of trans-Sinitic value ideals
- (1''): Different versions of trans-feminine value ideals
- (1''): Different versions of trans-Islamic value ideals
- (1''): Different versions of trans-outerspace value ideals
- (2''): Different versions of post-human elitist value ideals
- (3''): Different versions of the value ideals of floating consciousness (etc.)

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**Table 4.25. Democracy, Non-Democracy, and Post-Democracy
(Part III)**

Notes: The examples are solely illustrative (not exhaustive), nor are they mutually exclusive. As generalities, they allow exceptions. “Negative” freedom is freedom “from” (e.g., freedom from poverty), whereas “positive” freedom is freedom “to” (e.g., freedom to the state of enlightenment). “Negative” equality is “procedural” equality (e.g., equality of opportunity), while “positive” equality is “substantive” equality (e.g., equality of outcome). Existential dialectics impose constraints on freedom and equality in democracy, non-democracy, and post-democracy, regardless of whether freedom and equality can be understood as “negative” or “positive” in conventional discourse. Therefore, do not confuse the transcendence of freedom and equality in (3’’) with the naïve temptation to transcend existential dialectics. There is no utopia, in the end; even should there be one, it would not exist without dystopia embedded within it.

Sources: A summary, based on my previous works, especially Ch.5 of *FHC*, Chs.5-10 of *FCD*, Chs.2-4 of *FPHC*, and Chs.1 & 7 of *BDPD*. The reader should consult the books for more analysis, as this is only a summary here.

Table 4.26. Multiple Causes of the Emergence of Post-Democracy (Part I)

• **At the Micro-Physical Level**

—Ex: intelligent life without the human physical-chemical system

—Sources: Ch.7 of *FHC*; Chs.9-10 of *FCD*; Ch.1 of *FPHC*

• **At the Chemical Level**

—Ex: space radiation and toxins

—Sources: Ch.7 of *FHC*; Chs.9-10 of *FCD*

• **At the Bio-Psychological Level**

—Ex: exo-biological evolution in deep space

—Ex: genetic engineering of new beings

—Ex: limits of cognitive partiality

—Ex: illusions of emotional neutrality

—Ex: human biological inequality

—Ex: the rise of unfolding unconsciousness

—Sources: Ch.2 & Chs.9-10 of *FCD*; Ch.7 of *FHC*; Ch.4 of *BCPC*; *FPHU*

• **At the Institutional Level**

—Ex: the flawed logic of equality

—Ex: the conflicting nature of governance

—Sources: Ch. 5 of *FHC*; Chs. 6 & 10 of *FCD*; Ch. 3 of *FPHC*; Chs.2-5 of *BDPD*

• **At the Organizational Level**

—Ex: e-civic alienation

—Ex: the dark sides of formal-legalistic routines

—Sources: Ch.3 of *FHC*; Ch.7 of *FCD*; Ch.3 of *FPHC*

• **At the Structural Level**

—Ex: ever new forms of inequities, at home and abroad

—Ex: the emergence of China, women, and Islam as major actors

—Sources: Chs.5-6 of *FHC*; Chs.7, 9 & 10 of *FCD*; Chs.4-5 of *BDPD*

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**Table 4.26. Multiple Causes of the Emergence of Post-Democracy
(Part II)**

• **At the Cultural Level**

- Ex: freedom/unfreedom dialectics
- Ex: equality/inequality dialectics
- Ex: system fragmentation and integration
- Sources: Ch.5 of *FHC*; Chs. 3, 9 & 10 of *FCD*; Ch.4 of *FPHC*;
Ch.1 of *BDPD*; Ch.4 of *BCPC*

• **At the Systemic Level**

- Ex: space habitats (in zero-gravity) and colonization
- Ex: ultra advanced future info systems
- Ex: qualitative demography
- Sources: Ch.7 of *FHC*; Chs.9 &10 of *FCD*

• **At the Cosmological Level**

- Ex: the colonization of multiverses
- Ex: the alteration of space-time and the creation of new matter-energy
- Ex: the expansion of floating consciousness
- Ex: the spread of hyper-spatial consciousness
- Sources: Ch.7 of *FHC*; Chs.9 &10 of *FCD*; Ch.4 of *FPHC*; *FPHST*

Notes: The examples in each category are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: Especially from *FHC*, *FCD*, *FPHC*, *BCPC*, *BDPD*, *FPHST*, and *FPHU*. See also other books and my perspectives on civilizational holism.

**Table 4.27. Some Clarifications
about Post-Capitalism and Post-Democracy
(Part I)**

• The prefix “trans-” in the first category of post-capitalism (with its four versions) refers to something “going beyond” (not “uniting” or “combining”). Ex: *Sec.10.3.3* of *FCD*; *Sec.2.4* & *Sec.4.4* of *FPHC*; *Sec.7.2* of *BCPC*

• Such terms like “post-democracy,” “post-capitalism,” “post-human elitist,” “trans-feminine calling,” and the like as used in my works are more for our current intellectual convenience than to the liking of future humans and post-humans, who will surely invent more tasteful neologisms to call their own eras, entities, and everything else, for that matter. But the didactic point here is to use the terms to foretell what the future might be like, not that its eras and entities must be called so exactly and permanently.

Ex: *Sec.11.1* of *FCD*; *Sec.7.2* of *BCPC*

• The four versions in the first category of post-capitalist value ideals need not automatically be post-democratic, just as capitalism does not necessarily mean democracy. They are two different entities—though closely related. But up to a certain threshold of elevating equality at the farther expense of freedom, the democratic ideals will be overcome and cease to exist. The same is true for the post-human elitist calling in the second category of post-capitalism in relation to post-democracy, depending on the extent to which freedom is elevated at the expense of equality.

Ex: *Sec.10.4.3.3* of *FCD*; *Table 3.9* of *FPHC*; *Table 7.6* of *BDPD*

• The comparison in each of the three realms of existence in all forms of post-capitalism is not absolute, but relative. Examples include “communal” vs. “individualistic,” and the like.

Ex: Notes in *Table 10.8*, *Table 10.9*, *Table 10.10*, & *Table 10.11* of *FCD*; *Chs.2-4* of *FPHC*; *Sec.7.2* of *BCPC*

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**Table 4.27. Some Clarifications
about Post-Capitalism and Post-Democracy
(Part II)**

- The emergence of post-capitalism (and post-democracy, for that matter) has multiple causes (to not be reduced to one or only a few).

Ex: Ch.10 of *FCD*, Chs.2-4 of *FPHC*; *Sec.1.3* & *Sec.7.2* of *BCPC* (or *Table 1.8* & *Table 7.11*)

- The specific forms of post-capitalism (and post-democracy, for that matter) need to be further developed in future after-postmodern history, as they will be different from the ones we now know. The point here is to solely give an extremely rough sketch of a world to come that we have never known.

Ex: *Sec.10.3.3* & *Sec.10.4.3.3* of *FCD*; *Table 10.14* & *Table 10.15* of *FCD*; *Sec.7.2* of *BCPC*

- All forms of post-capitalism are not part of a “teleological law,” but of “historical trends” only. The same is also true for all forms of post-democracy.

Ex: *Sec.7.1* of *FHC*; *Sec.9.5.3.2* & *Sec.10.3.4.2* of *FCD*; *Sec.7.2* of *BCPC*

- Post-capitalism is not better than capitalism in an “absolute” sense but only fits in better, on the basis of the historical contingency of culture, society, nature, and the mind in some future eras. The same is true for post-democracy in relation to democracy. The term “better” is historically relative.

Ex: *Sec.10.3.3* of *FCD*; *Sec.1.7* of *BDDP*; *Sec.1.5* of *BCPC*

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**Table 4.27. Some Clarifications
about Post-Capitalism and Post-Democracy
(Part III)**

- All forms of post-capitalism and post-democracy are subject to the constraints of existential dialectics. In the process, the dialectic direction is to go beyond the conventional “either-or” dichotomies (e.g., freedom vs. unfreedom, equality vs. inequality, freedom vs. equality, individuality vs. communality, spirituality vs. materiality, formal legalism vs. informal legalism, etc.). As is true in post-civilization, to go beyond the dichotomies is to acknowledge the co-existence of both in each dichotomy, although the degree of scaling one over the other varies from case to case (e.g., the theory of post-capitalism I, the theory of post-capitalism II, the theory of post-democracy I, the theory of post-democracy II, etc.)—but is not to be extreme in largely favoring one over the other, *on average* (all things considered). There is no utopia to be had in the end; even should there be one, dystopia would exist within it.

Ex: Ch.5 of *FHC*; Sec.10.4.4.2 of *FCD*; Sec.1.5 of *BDPD*; Sec.1.3 of *BCPC*; *BCIV*

- All forms of post-capitalism, however different from each other though they are, share one common feature, in that they all inspire for a higher spiritual culture. The same is also true for post-democracy.

Ex: Sec.10.3, Sec.10.4 & Sec.10.5 of *FCD*; Chs.2-4 of *FPHC*; Sec.7.2 of *BCPC*

- All forms of post-capitalism try to avoid the excess in capitalist consumerism by favoring more basic than artificial needs in having, but the quality and quantity of these “basic” needs will be measured by future standards, not by our current ones. Standards are historically relative.

Ex: Sec.10.3, Sec.10.4 & Sec.10.5 of *FCD*; Ch.2 of *FPHC*; Sec.7.2 of *BCPC*

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**Table 4.27. Some Clarifications
about Post-Capitalism and Post-Democracy
(Part IV)**

- All forms of post-capitalism make use of a different degree of political authority with advanced info systems in future history and strives for higher spiritual cultures (especially in the post-human age), while acknowledging the constraints of existential dialectics and no longer valuing free market (as in capitalism) and economic control (as in non-capitalism) as sacred virtues.

Ex: *Sec.10.3.4.2, Sec.10.3, Sec.10.4 & Sec.10.5* of *FCD*; *Chs.2-4* of *FPHC*; *Sec.1.5* of *BDPD*; *Sec.7.2* of *BCPC*

Notes:: The main points here are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions. The sections as cited are only illustrative (not exhaustive).

Sources: From *FHC, FCD, FPHC, and BDPD*

**Table 4.28. The Theory of Post-Capitalism I.1:
By Group—
Ex: Spiritual/Communal in the Trans-Feminine Calling**

• **More Communal Than Individual**

- Sharing*: learning from others, as different ideas mutually enrich
- Cooperative*: encouraging a sense of shared leadership and teamwork

• **More Informal-Legalistic Than Formal-Legalistic**

- Specific*: listening more from the heart than from the head, to know a person as a concrete, not as an abstract, unit
- Affective*: thinking and acting with others on a more affective tone. Business can mix with an emotional touch.
- Ascriptive*: hiring (or firing) can be done on the basis of merit (or lack of it), but deep solidarity (sisterhood) is important too.
- Particularistic*: making decisions on the basis of cost-benefit analysis, but a given group relationship is vital

• **More Spiritual Than Secular**

- Long-Term Looking*: sharing for a long-term relationship (e.g., love, friendship), not just for a short-term gain
- Loving/Caring*: showing compassion for the sufferings of others, without quickly blaming and pre-judging
- Respectful*: showing acceptance about others' feelings (and thoughts)

Notes: The categories and examples are solely illustrative, since there can be different versions, and the comparison is relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. The specific forms of the trans-feminine version need to be further developed in future after-postmodern history, as they will be different from the ones we now know, since the prefix “trans-” here means going beyond or deconstructing the feminine values, while using them as the inspirational point at the beginning.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.29. The Theory of Post-Capitalism I.2:
By Nation-State—
Ex: Spiritual/Communal in the Trans-Sinitic Calling**

- **More Communal Than Individualistic**
 - Centralized*: being more top-down in management
 - Collective*: encouraging more group cooperation
 - Social*: investing in trust and connection

- **More Informal-Legalistic Than Formal-Legalistic**
 - Specific*: knowing more of those related or connected
 - Affective*: behaving in a paternalistic, hierarchical way
 - Ascriptive*: favoring family members and those related
 - Particularistic*: building connection (guanxi) as imperative

- **More Spiritual Than Secular**
 - Expansionist*: diffusing civilizational values (e.g., the superiority complex of civilizationalism)
 - Holistic*: synthesizing things into a panoramic horizon
 - Historical*: learning from the lessons of the ancient past
 - Respectful*: deferential to elders and superiors

Notes: The categories and examples are solely illustrative, since there can be different versions, and the comparison is relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. The specific forms of the trans-Sinitic version need to be further developed in future after-postmodern history, as they will be different from the ones we now know, since the prefix “trans-” here means going beyond or deconstructing the Sinitic values, while using them as the inspirational point at the beginning.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.30. The Theory of Post-Capitalism I.3:
By Region—
Ex: Spiritual/Communal in the Trans-Islamic Calling**

• **More Communal Than Individualistic**

- Collective*: building the webs of relationships to bind individuals
- Sharing*: cultivating the established “wisdom” through common experience
- Cooperative*: stressing harmony, solidarity, and commonality

• **More Informal-Legalistic Than Formal-Legalistic**

- Specific*: making efforts to know well the participants (family and larger community) in matters of common concern
- Affective*: mixing work with language and ritual on explicit religious (Islamic) ideals, texts, stories, and examples
- Ascriptive*: privileging local history and custom on relationships among kinship groups
- Particularistic*: preferring an unbiased insider with ongoing connections to all parties

• **More Spiritual Than Secular**

- Historical*: learning from the lessons of the past as a source of stability and guidance
- Deferential*: showing respect for age, experience, status, and leadership in communal affairs
- Honorable*: emphasizing face, dignity, prestige, and fairness
- Compassionate*: giving mercy and charity (“Zahah”) to others

Notes: The categories and examples are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. The specific forms of the trans-Islamic version need to be further developed in future after-postmodern history, as they will be different from the ones we now know, since the prefix “trans-” here means going beyond or deconstructing the Islamic values, while using them as the inspirational point at the beginning.

Sources: From Ch.10 of *FCD*. Refer to text for more info and references, especially from the works by George Irani (2000) and C. Murphy (September 19, 2001).

**Table 4.31. The Theory of Post-Capitalism I.4:
By Universe—
Ex: Spiritual/Communal in the Trans-Outerspace Calling**

• **More Communal Than Individual**

- Cooperative*: requiring teamwork in small space habitats
- Sharing*: learning from, and enjoying being with, each other in a small group in outer space

• **More Informal-Legalistic Than Formal-Legalistic**

- Specific*: knowing more about each other to facilitate living and working together in space, both as fellow astronauts and space-mates
- Affective*: being friendly and social to each other as vital to working and living in small space quarters
- Ascriptive*: nurturing camaraderie among fellow astronauts as if they are family members over time
- Particularistic*: building work relationship with enduring memory in a space mission

• **More Spiritual Than Secular**

- Long-Term*: looking beyond selfish materialistic concerns in a precarious space environment with potential life or death
- Loving/Caring*: cultivating deep bondage for the success of a long term space mission
- Transcendent*: searching for life meaning in outer space

Notes: The calling and examples in each category are solely illustrative (not exhaustive), since there will be many different outer-space value ideals in the distant future of space colonization. The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of trans-outer-space calling need to be further developed in future after-postmodern history, as they will be different from the ones we now know, since the prefix “trans-” here means going beyond or deconstructing the current outer-space values, while using them as the inspirational point at the beginning. The point here is to solely give an extremely rough picture of a small part of the world to come that we still do not know much about.

Source: From Ch.10 of *FCD*. Refer to text for more info and references.

**Table 4.32. The Theory of Post-Capitalism II:
Spiritual/Individualistic in the Post-Human Elitist Calling
(Part I)**

• **More Individualistic Than Communal**

- Setting up rank distinctions among unequals (e.g., between inferior humans and superior post-humans, or later among inferior post-humans and superior ones, relatively speaking)
- Yearning for being not only distinguished from unequals, but also the first among equals (the best of the very best)
- Recognizing the constraints of equality/inequality dialectics (or existential dialectics in general)

• **More Spiritual Than Secular**

- Soul-searching for a high spiritual culture (not the trashy one for the masses). Mass culture is a dirty joke for them.
- Exploring different spheres of non-human consciousness in the cosmos (something vastly superior than the human one)
- Recognizing the constraints of freedom/unfreedom dialectics (or existential dialectics in general)

• **Qualifications**

- Although post-human elitist post-democracy is comparable to post-human elitist post-capitalism in some respects, the former does not necessarily imply the latter (post-human elitist post-capitalism), just as democracy does not have to entail capitalism. They are two different (though related) entities.
- But up to a certain threshold of incorporating government intervention with advanced info systems in future civilizations for higher spiritual concerns at the expense of the free market and materialist pursuit, the capitalist ideal will be overcome.
- The overcome will not be Fascist or feudalistic, but post-capitalist, subject to the constraints of existential dialectics.

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**Table 4.32. The Theory of Post-Capitalism II:
Spiritual/Individualistic in the Post-Human Elitist Calling
(Part II)**

Notes: The calling and examples in each category are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of post-human elitist post-capitalism need to be further developed in future after-postmodern history, as they will be different from the ones we now know, while using them as the inspirational point at the beginning. The point here is to solely give an extremely rough picture of a small part of the world to come that we still do not know much about.

Sources: From Ch.10 of *FCD* (and also *FPHC*, *BDPD*, and *BCPC*). Refer to the text for more info and references.

**Table 4.33. Capitalism, Non-Capitalism, and Post-Capitalism
(Part I)**

• **Capitalism**

—*Theoretical Constructs*

- Allocation of scarce resources among alternative wants largely by free market for competition (whose characteristics in its ideal form include, for instance, no barrier to entry or exit, homogeneity, perfect information, a large number of buyers/sellers, and perfect factor mobility)
- More formal-legalistic than informal-legalistic, more individualistic than communal, and more material (secular) than spiritual
- Either (1) minimal government or (2) relatively active government

—*Types*

- Only (1): Different versions of market capitalism (e.g., the U.S.)
- Only (2): Different versions of welfare capitalism (e.g., Sweden)

• **Non-Capitalism**

—*Theoretical Constructs*

- Allocation of scarce resources among alternative wants mainly by political authority for policies (which can be regulative, redistributive, symbolic, and participatory)
- More informal-legalistic than formal-legalistic
- Either (1') more individualistic (for the elites), often (though not always) for material (secular) concerns, or (2') more communal (for the masses), often (though not always) for spiritual concerns

—*Types*

- Only (1'): Different versions on the Right (e.g., Fascist corporate-state economy for the glory of the new Rome, medieval lord-vassal-serf economy for the power of the feudalistic order)
- Only (2'): Different versions on the Left (e.g., Soviet command economy for the creation of the New Socialist Man)

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**Table 4.33. Capitalism, Non-Capitalism, and Post-Capitalism
(Part II)**

• **Post-Capitalism**

—*Theoretical Constructs*

- Allocation of scarce resources among alternative wants largely by political authority with advanced info systems in future civilizations, subject to existential dialectics. In degree of allocating by authority, post-capitalism is more than capitalism but less than non-capitalism.
- More spiritual than secular (material)
- Either (1'') more individualistic or (2'') more communal
- Like capitalism and non-capitalism, post-capitalism is also subject to the freedom/unfreedom and equality/inequality dialectics (or existential dialectics in general). There is no utopia, in the end; even were there one, dystopia would exist within it.
- Unlike capitalism and non-capitalism, post-capitalism makes use of a different degree of political authority with advanced info systems in future civilizations and strives for higher-spiritual cultures (especially in the post-human age), while acknowledging the constraints of existential dialectics and no longer valuing free market (as in capitalism) and economic control (as in non-capitalism) as sacred virtues.

—*Types*

- Only (1''): Different versions of post-human elitist value ideals
 - Only (2''): Different versions of trans-Sinitic value ideals
 - Only (2''): Different versions of trans-feminine value ideals
 - Only (2''): Different versions of trans-Islamic value ideals
 - Only (2''): Different versions of trans-outerspace value ideals
-

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**Table 4.33. Capitalism, Non-Capitalism, and Post-Capitalism
(Part III)**

Notes: The calling and examples in each category are solely illustrative (not exhaustive). The comparison is also relative (not absolute), nor are they mutually exclusive. As generalities, they allow exceptions. And the specific forms of each calling need to be further developed in future after-postmodern history, as they will be different from the ones we now know, while using them as the inspirational point at the beginning. The point here is to solely give an extremely rough picture of a small part of the world to come that we still do not know much about.

Source: From Ch.10 of *FCD*. Refer to the text for more info and references.

Table 4.34. Multiple Causes of the Emergence of Post-Capitalism (Part I)

• **At the Micro-Physical Level**

- Ex: intelligent life without the human physical-chemical system
- Ex: mastering of quantum mechanics, electromagnetism, and other fields for the understanding of a broad range of anomalous experiences and the application for artificial intelligence for spiritual quest
- Sources: Ch.7 of *FHC*; Chs.9-10 of *FCD*; Ch.1 of *FPHC*

• **At the Chemical Level**

- Ex: space radiation and toxins
- Sources: Ch.7 of *FHC*; Chs.9-10 of *FCD*

• **At the Bio-Psychological Level**

- Ex: exo-biological evolution in deep space
- Ex: genetic engineering of new beings
- Ex: limits of human cognition
- Ex: the rise of unfolding unconsciousness
- Sources: Ch.2 & Chs.9-10 of *FCD*; Ch.7 of *FHC*; *FPHU*

• **At the Institutional Level**

- Ex: the flawed logic of the free market
- Ex: the need of a post-autistic economics
- Sources: Ch.10 of *FCD*

• **At the Organizational Level**

- Ex: the dark sides of formal-legalistic routines
- Sources: Ch.3 of *FHC*; Ch.7 of *FCD*; Ch.3 of *FPHC*

• **At the Structural Level**

- Ex: ever new forms of inequities, at home and abroad
 - Ex: the emergence of China, women, and Islam as major actors
 - Sources: Chs.5-6 of *FHC*; Chs.7, 9 & 10 of *FCD*; Chs.4-5 of *BDDP*
-

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Table 4.34. Multiple Causes of the Emergence of Post-Capitalism (Part II)

• **At the Cultural Level**

- Ex: freedom/unfreedom dialectics
- Ex: equality/inequality dialectics
- Sources: Ch.5 of *FHC*; Chs.3 & 10 of *FCD*; Ch.4 of *FPHC*; Ch.1 of *BDPD*

• **At the Systemic Level**

- Ex: space habitats (in zero-gravity) and colonization
- Ex: ultra advanced future info systems
- Ex: qualitative demography
- Sources: Ch.7 of *FHC*; Chs. 9 & 10 of *FCD*

• **At the Cosmological Level**

- Ex: the colonization of multiverses
- Ex: the alteration of space-time and the creation of new matter-energy
- Ex: the expansion of floating consciousness
- Ex: the spread of hyper-spatial consciousness
- Sources: Ch.7 of *FHC*; Chs. 9 & 10 of *FCD*; Ch.4 of *FPHC*; *FPHST*

Notes: The examples in each category are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: Especially from *FHC*, *FCD*, *FPHC*, *BCPC*, *BDPD*, *FPHST*, and *FPHU*. See also other books and my perspectives on civilizational holism.

Table 4.35. The Theoretical Debate on Civilization

- **The Progressive Theory of Civilization**

- Thesis*: The “civilizing” process is “good,” as opposed to the “barbarizing” process as something “bad,” relatively speaking.
- Discourse*: Especially, though not exclusively, in the Enlightenment era and a bit before. Example: Thomas Hobbes—in that the tribes in primitive societies were “savages.”

- **The Romantic Theory of Barbarity**

- Thesis*: The “civilizing” process is “bad,” as opposed to the “barbarizing” process as something “good,” relatively speaking.
- Discourse*: Especially, though not exclusively, in the Counter-Enlightenment circle. Example: Jean-Jacques Rousseau—in that civilization “corrupts” men, and the “savages” are in fact “noble.”

- **The Moderate Theory of Civilization**

- Thesis*: The “civilizing” process is “good,” but there is a price to pay, especially in systematic (compulsive) self-control.
- Discourse*: Especially, though not exclusively, in some late modern and postmodern circles. Example: Norbert Elias—in that social manners become more refined in the civilizing process, but self-control also becomes more systematic.

- **The Theory of Post-Civilization**

- Thesis*: The civilizing process is as evil and good as barbarity, and each cannot exist without the other, to be eventually superseded by post-civilization unto the post-human age.
 - Discourse*: Proposed by Peter Baofu. See the rest of *BCIV* for more analysis.
-

Source: From *BCIV* on the theoretical debate

Table 4.36. No Freedom Without Unfreedom in the Civilizing Processes (Part I)

• The Rationalizing Process (at the Level of Culture)

- if freer from the dominance of unreason (as in barbarism) in the civilizing process, then less free from the rationalizing process (be it in the form of the principle of either transcendence or immanence)
- if freer from the principle of immanence in the rationalizing process, then less free from the inclination to commit terror in the name of reason and the relative underdevelopment of non-reason (e.g., in relation to yoga and meditation)
- if freer from the principle of transcendence in the rationalizing process, then less free from the relative underdevelopment of reason (e.g., in relation to systematic methodology) and the occurrence of oppression in the name of non-reason

• The Pacifying Process (at the Level of Society)

- if freer from the dominance of pillage (as in savagery) in the civilizing process, then less free from the pacifying process (be it in the form of external control or self-control)
- if freer from self-control in the pacifying process, then less free from the temptation of expansionist oppression and rebellious mindset in external control
- if freer from external control in the pacifying process, then less free from the gruesome psychological self-torture and conformism in self-control

• The Stewardizing Process (at the Level of Nature)

- if freer from the dominance of nature (as in the state of nature) in the civilizing process, then less free from the stewardizing process (be it in the form of the stewardship of creation or the covenant with nature)
- if freer from the stewardship of creation in the stewardizing process, then less free from material underdevelopment, relatively speaking, and spiritual exclusion in the covenant with nature
- if freer from the covenant with nature in the stewardizing process, then less free from ecological degradation and spiritual disconnection from nature in the stewardship of creation

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Table 4.36. No Freedom Without Unfreedom in the Civilizing Processes (Part II)

• **The Subliming Process (at the Level of the Mind)**

- if freer from the dominance of spontaneity (as in the wild state of the mind) in the civilizing process, then less free from the subliming process, be it in the form of (cyclical-centric) self-refinement or (linear-centric) self-discipline
- if freer from (cyclical-centric) self-refinement in the subliming process, then less free from the (linear-centric) self-regimen (as a form of neurosis)
- if freer from (linear-centric) self-discipline in the subliming process, then less free from the (cyclical-centric) self-torture (equally as a form of neurosis)

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Sources: From *BCIV*. See also *FHC*, *FCD*, *FPHC*, *BDPD*, and *BCPC*.

Table 4.37. No Equality Without Inequality in the Civilizing Processes (Part I)

• The Rationalizing Process (at the Level of Culture)

- if more equal for the role of rationalization in the rationalizing process (of civilizational making), then less equal for that of mythicization (as in barbarism)
- if more equal for the principle of transcendence in (linear-centric) rationalizing process, then less equal for the principle of immanence
- if more equal for the principle of immanence in (cyclical-centric) rationalizing process, then less equal for the principle of transcendence

• The Pacifying Process (at the Level of Society)

- if more equal for pacification in civilizational making, then less equal for the institution of pillaging and others (as in savagery)
- if more equal for external control, relatively speaking, in pacifying process, then less equal for self-control
- if more equal for self-control, relatively speaking, in pacifying process, then less equal for external-control

• The Stewardizing Process (at the Level of Nature)

- if more equal for stewardship in the stewardizing process (of civilizational making), then less equal for reverent (submissive) existence (as in barbarism)
- if more equal for the stewardship of creation in (linear-centric) stewardizing process, then less equal for the (cyclical-centric) covenant with nature for harmonious co-existence
- if more equal for the (cyclical-centric) covenant with nature in the stewardizing process, then less equal for the (linear-centric) stewardship of nature for domination

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Table 4.37. No Equality Without Inequality in the Civilizing Processes (Part II)

• **The Subliming Process (at the Level of the Mind)**

- if more equal for the role of reason in the subliming process, then less equal for that of unreason (as in the natural state of wildness)
- if more equal for the primacy of reason in (linear-centric) subliming process, then less equal for other faculties (e.g., intuition, existential feelings, and analogous thinking) in cyclical-centric one
- if more equal for the exercise of other faculties (e.g., intuition, existential feelings, and analogous thinking) in cyclical-centric subliming process, then less equal for the role of reason in linear-centric counterpart

Notes: The examples in each category are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they mutually exclusive. And some can be easily reclassified else-where. As generalities, they allow exceptions.

Sources: From *BCIV*. See also *FHC*, *FCD*, *FPHC*, *BDPD*, and *BCPC*.

Table 4.38. Five Theses on Post-Civilization

- Post-civilization no longer treats civilization as good and barbarity as evil (relatively speaking), nor does it nostalgically regard barbarity as good and civilization as evil (relatively speaking again). Civilization is as evil and good as barbarity.
- Post-civilization also no longer accepts the dichotomy between civilization and barbarity. Civilization cannot exist without barbarity. It is no longer necessary to preserve civilization, any more than it is imperative to destroy barbarity. To go beyond civilization and barbarity is to acknowledge the co-existence of both, although the degree of scaling one over the other varies from case to case—but is not to be extreme in largely favoring one over the other, *on average* (subject to the constraints of existential dialectics).
- Post-civilization is thus subject to the constraints of existential dialectics. There is no freedom without unfreedom, and no equality without inequality, for instance. There will be no utopia; even should there be one, there would be dystopia embedded within it.
- Post-civilization will eventually replace civilization (as a form of life settlement), to be dominated by post-capitalist and post-democratic lifeforms here on earth and in deep space (besides other alien lifeforms that we have never known), unto the post-human age in multiverses. Those few post-humans who keep civilization will live in a “post-human civilization,” while the rest (the majority), who choose post-civilization, will evolve towards the state of “post-human post-civilization.” One therefore should not confuse “post-human civilization” with “post-human post-civilization,” as the two are not the same.
- Post-civilization will confront psychosis as a primary problem in the culture of virtuality unto the post-human age, just as civilization has neurosis as a primary one of its own (although both neurosis and psychosis are major problems in both).

Notes: The comparison in each category is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Sources: From *BCIV*. See also *FHC*, *FCD*, *FPHC*, *BDPD*, and *BCPC*.

Table 4.39. Barbarity, Civilization, and Post-Civilization

• **The Rationalizing Process (at the Level of Culture)**

—*Barbarity*

- More mythicizing than rationalizing, relatively speaking

—*Civilization*

- More rationalizing than mythicizing, relatively speaking

—*Post-Civilization*

- Beyond the dichotomy, subject to existential dialectics

• **The Pacifying Process (at the Level of Society)**

—*Barbarity*

- More pillaging than pacifying, relatively speaking

—*Civilization*

- More pacifying than pillaging, relatively speaking

—*Post-Civilization*

- Beyond the dichotomy, subject to existential dialectics

• **The Stewardizing Process (at the Level of Nature)**

—*Barbarity*

- More revering than stewardizing, relatively speaking

—*Civilization*

- More stewardizing than revering, relatively speaking

—*Post-Civilization*

- Beyond the dichotomy, subject to existential dialectics

• **The Subliming Process (at the Level of the Mind)**

—*Barbarity*

- More impulsing than subliming, relatively speaking

—*Civilization*

- More subliming than impulsing, relatively speaking

—*Post-Civilization*

- Beyond the dichotomy, subject to existential dialectics

Notes: The comparison in each category is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Sources: From *BCIV*. See also *FHC*, *FCD*, *FPHC*, *BDDP*, and *BCPC*.

**Table 4.40. Types of Super Civilization in the Cosmos
(Part I)**

• **Type I**

—a civilization which gains control of and uses the total energy output “falling on its planet from its sun for interstellar communication” (or, in general, space colonization). For N. Kardashev, who proposed the first three types, human civilization is currently Type Zero (Type O), which is below even Type I, since its present energy consumption for all purposes, let alone for interstellar communication, is still 10,000 times less.

• **Type II**

—a civilization which gains control of and uses directly the total energy output of its sun for interstellar communication (or, in general, space colonization).

• **Type III**

—a civilization which gains control of and uses the total energy output of its galaxy for interstellar communication (or, in general, space colonization).

• **Type IV**

—a civilization which gains control of and uses the total energy output of its cluster of galaxies for interstellar communication (or, in general, space colonization).

• **Type V**

—a civilization which gains control of and uses the total energy output of its supercluster of galaxies for interstellar communication (or, in general, space colonization).

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**Table 4.40. Types of Super Civilization in the Cosmos
(Part II)**

• **Type...n**

- So continues the series in what I call the cyclical progression of hegemony in the cosmos and beyond.

Notes: The Russian astrophysicist Nikolai Kardashev proposed the first three types of super civilization in terms of total energy out-put for interstellar communication. (CSM 1979) I extend his argument further to propose Type IV, Type V, Type VI, and Type...n, in the context of my claim about the cyclical progression of he-gemony in the cosmos and beyond.

Sources: From *Table 9.4* of *FCD*. See *FHC*, *FCD*, and *FPHC* for more info.

**Table 4.41. The Civilizational Project
from Pre-Modernity to After-Postmodernity
(Part I)**

	<i>Pre-Modern</i>	<i>Modern</i>	<i>Postmodern</i>	<i>After- Postmodern</i>
<i>Main narratives</i>	<ul style="list-style-type: none"> •Sacralness •Courtliness •Vitalism •Animism 	<ul style="list-style-type: none"> •Freedom •Equality •Fraternity 	<ul style="list-style-type: none"> •Multiplicity •Hybridization 	<ul style="list-style-type: none"> •Naked contingency •Cyclical progression of hegemony
<i>Main institutions</i>	<ul style="list-style-type: none"> •Monarchy •Aristocracy •Feudalism •Holy order •Primitivism 	<ul style="list-style-type: none"> •Capitalism •Liberalism •Socialism •Nazism •Fascism 	<ul style="list-style-type: none"> •Capitalism •Liberalism •Postmodern politics of difference 	<ul style="list-style-type: none"> •Post-Capitalism •Post-Democracy •Others
<i>Main technological and economic revolutions</i>	<ul style="list-style-type: none"> •Agricultural 	<ul style="list-style-type: none"> •Service •Industrial 	<ul style="list-style-type: none"> •Informational 	<ul style="list-style-type: none"> •Biological •Material •Energy •Space •Others

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**Table 4.41. The Civilizational Project
from Pre-Modernity to After-Postmodernity
(Part II)**

	<i>Pre-Modern</i>	<i>Modern</i>	<i>Postmodern</i>	<i>After-Postmodern</i>
<i>Main agents</i>	<ul style="list-style-type: none"> •Males •Upper strata •Mini-states 	<ul style="list-style-type: none"> •Males •Upper strata •Whites •Empires 	<ul style="list-style-type: none"> •Males •Upper strata •Whites •Others •Supra-states •IO's 	<ul style="list-style-type: none"> •Post-humans •Humans •Others
<i>Main impacts</i>	<ul style="list-style-type: none"> •Local 	<ul style="list-style-type: none"> •Inter-national 	<ul style="list-style-type: none"> •Global 	<ul style="list-style-type: none"> •Outer-space •Multiverse
<i>Main outcomes</i>	<ul style="list-style-type: none"> •Towards modernity •Rise of linear- & cyclical-centric civilizations 	<ul style="list-style-type: none"> •Towards post-modernity •Dominance of linear-centric civilization 	<ul style="list-style-type: none"> •Towards after-post-modernity •Linear-centric civilization in crisis 	<ul style="list-style-type: none"> •Towards human (& maybe post-human) extinction •Rise of post-civilization, especially in post-human forms of space-time

Notes: The examples in each category are solely illustrative (not exhaustive) nor necessarily mutually exclusive, and the comparison is relative (not absolute). As generalities, they allow exceptions.

Sources: From *Table 10.16* of *FCD*—and also from *BCIV* on post-civilization (and *FPHST*)

**Table 4.42. Civilizational Holism
(Part I)**

• **At the Micro-Physical Theoretical Level**

—Ex: Mastering of quantum mechanics, electromagnetism, and other fields for the understanding of a broad range of anomalous experiences and the application for artificial intelligence (*Sec.1.4.1 of FPHC*)

• **At the Chemical Theoretical Level**

—Ex: Unprecedented expansion of (and violence to) the mind through ever new forms of drugs (and virtual technologies, for that matter) (Ch.9 of *FCD*)

• **At the Biological Theoretical Level**

—Ex: Humans are not biologically equal, on the basis of race, gender, ethnicity, age, and whatnot. (*Sec.2.6 & Ch.10 of FCD; BNN*) And post-humans will experience the same fate, in an even more amazing way.

• **At the Psychological Theoretical Level**

—Ex: Human cognitive impartiality and emotional neutrality are quite limited. (*Secs.2.4-2.5 of FCD*)
—Ex: Rise of Floating Consciousness (Ch.10 of *FCD*; Chs.1 & 4 of *FPHC*) and Unfolding Unconsciousness (*FPHU*)

• **At the Organizational Theoretical Level**

—Ex: Administrative colonization of deep space, with less legal-formalism in some corners. (Chs.9-10 of *FCD*)

• **At the Institutional Theoretical Level**

—Ex: Both capitalism and democracy will not last, to be superseded by different versions of post-capitalism and post-democracy in after-postmodernity. (Ch.10 of *FCD*)

(continued on next page)

**Table 4.42. Civilizational Holism
(Part II)**

• **At the Structural Theoretical Level**

- Ex: Social stratification reappears in ever new forms, also with new causes and new players in the cyclical progression of hegemony. (Chs.8-10 of *FCD*)
- Ex: The world of hyper-empires, and the union of the unions (*BWT*)

• **At the Systemic Theoretical Level**

- Ex: Outerspace expansion: local → regional → global → solar → galactic → clustery → multiversal (Ch.9 of *FCD*)
- Ex: Demographic transition: human extinction, and the rise of post-humans (e.g., cyborgs, thinking machines, thinking robots, genetically altered superior beings, floating consciousness, hyper-spatial consciousness) (Ch.4 of *FPHC*; Ch.10 of *FCD*; & Ch.7 of *FHC*)
- Ex: New technological forces in material sciences, electronic and communication sciences, energy sciences, biosciences, manufacturing and engineering sciences, and space sciences (Ch.10 of *FCD* & Ch.7 of *FHC*)
- Ex: Systematic dominance towards nature for space colonization (Chs.9-10 of *FCD*; Chs.2 & 7 of *FHC*)

• **At the Cultural Theoretical Level**

- Ex: The post-human transcendence of freedom and equality (Ch.10 of *FCD*)
- Ex: Methodological Holism (Ch.1 of *FCD*; Ch.1 of *FPHC*; *Sec.2.1* & *Sec.2.5* of *BCPC*)
- Ex: The Evolution from Barbarity to Post-Civilization (*BCIV*)

• **At the Cosmological Theoretical Level**

- Ex: Mastering of dark matter and dark energy, and the exploration of multiverses (Ch.4 of *FPHC*; Ch.10 of *FCD*; & Ch.7 of *FHC*)
- Ex: Alternation of space-time (*FPHST*)
- Ex: The emergence of hyper-spatial consciousness (*FPHC*)

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**Table 4.42. Civilizational Holism
(Part III)**

• **At Other Levels**

—Ex: Historical: pre-modernity → modernity → postmodernity → after-postmodernity (human distinction, and the rise of post-humans, including floating consciousness, hyper-spatial consciousness, and unfolding unconsciousness) (Ch.7 of *FHC*; Ch.10 of *FCD*; *FPHC*; *FPHU*)

Notes: These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected. And the comparison is relative, not absolute.

Sources: From *Table 5.1* of *FPHC*—with details from *FHC*, *FCD*, and the rest of my books. Not every aspect in each category as discussed in all my books are presented here, since there are too many issues. For more info, also consult the table on theories on civilizational holism and, of course, the books themselves.

**Table 4.43. Theories on Civilizational Holism
(Part I)**

I. Theories in Relation to Nature

—*At the Macro-Physical (Cosmological) Theoretical Level*

- 46. Resettlement Theory of Geology (Peter Baofu)
(*FPHGEOL*)
- 45. Theory of Post-Cosmology (Peter Baofu)
(*BCOS*)
- 44. Theory of Hyper-Spatial Consciousness (Peter Baofu)
(Ch.4 of *FPHC*; *FPHG*)
- (• 42). Selective Theory of Geometry (Peter Baofu)
(*FPHG*)
- (• 41). Perspectival Theory of Space-Time (Peter Baofu)
(*FPHST*)
- (• 40). Dialectic Theory of Complexity (Peter Baofu)
(*FC*)
- (• 25). Theory of Floating Consciousness (Peter Baofu)
(Ch.10 of *FCD*; Chs.1 & 4 of *FPHC*)
- 43. Theory of the Geopower of Nature (Peter Baofu)
(Ch.4 of *ALD*)

—*At the Micro-Physical Theoretical Level*

- 42. Selective Theory of Geometry (Peter Baofu)
(*FPHG*)
- 41. Perspectival Theory of Space-Time (Peter Baofu)
(*FPHST*)
- 40. Dialectic Theory of Complexity (Peter Baofu)
(*FC*)

(continued on next page)

**Table 4.43. Theories on Civilizational Holism
(Part II)**

II. Theories in Relation to Culture

—*At the Cultural Theoretical Level*

- 39. Mediative-Variative Theory of Chess (Peter Baofu)
(*FPHCESS*)
- 38. Theory of Post-Ethics (Peter Baofu)
(*BEPE*)
- 37. Dualistic Theory of Mass Culture (Peter Baofu)
(Ch.2 of *FHC*)
- 36. Comparative Theory of Religion—also known as the
Comparative-Substitutive Theory of Religion (Peter Baofu)
(Ch.3 of *FHC*; Ch.9 of *FCD*; Ch.1 of *FPHK*; *FPHR*)
- 35. Theory of Post-Civilization (Peter Baofu)
(*BCIV*)
- 34. Theory of the Trinity of Modernity to Its After-Postmodern
Counterpart (Peter Baofu)
(*FHC*; Ch.10 of *FCD*)
- 33. Transformative Theory of Aesthetic Experience (Peter Baofu)
(*FAE*)
- (• 17). Theory of Post-Capitalism (Peter Baofu)
(Ch.10 of *FCD*; Chs.2 & 4 of *FPHC*; *BCPC*)
- (• 16). Theory of Post-Democracy (Peter Baofu)
(Ch.10 of *FCD*; Chs.3 & 4 of *FPHC*; *BDPD*)
- (• 5). Theory of Existential Dialectics,
or the Holistic Theory of Knowledge (Peter Baofu)
(*FHC*; *FCD*; *FPHC*; *BDPD*; *FC*; *FAE*; *ALD*; *FIA*; *FPHK*; etc.)
- (• 4). Contrastive Theory of Rationality (Peter Baofu)
(*FPHML*)
- (• 2). Theory of Methodological Holism (Peter Baofu)
(Ch.1 of *FCD*; Ch.1 of *FPHC*; *Sec.2.1* & *Sec.2.5* of *BCPC*;
FC; *FPHK*; etc.)

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**Table 4.43. Theories on Civilizational Holism
(Part III)**

III. Theories in Relation to the Mind

—*At the Biological Theoretical Level*

- 32. Theory of Contrastive Advantages (Peter Baofu)
(*Sec.2.6 & Ch.10 of FCD; BNN*)
- (• 25). Theory of Floating Consciousness (Peter Baofu)
(*Ch.10 of FCD; Chs.1 & 4 of FPHC*)

—*At the Psychological Theoretical Level*

- 31. Contrarian Theory of Personality (Peter Baofu)
(*FPHP*)
- 30. Theory of Virtual Sexuality (Peter Baofu)
(*FPHS*)
- 29. Expansive-Contractive Theory of Martial Arts (Peter Baofu)
(*FPHMA*)
- 28. Multilogical Theory of Learning (Peter Baofu)
(*FPHL*)
- 27. Comprehensive Theory of Creative Thinking (Peter Baofu)
(*FPHCT*)
- 26. Theory of Unfolding Unconsciousness—also known as the
Unfolding Theory of Anomalous Experience (Peter Baofu)
(*FPHU*)
- 25. Theory of Floating Consciousness (Peter Baofu)
(*Ch.10 of FCD; Chs.1 & 4 of FPHC*)
- 24. Theory of Cognitive Partiality (Peter Baofu)
(*Sec.2.4 of FCD; Sec.4.5.1.1 of BCPC*)
- 23. Theory of Emotional Non-Neutrality (Peter Baofu)
(*Sec.2.5 of FCD; Sec.4.5.2 of BCPC*)
- 22. Theory of Behavioral Alteration (Peter Baofu)
(*Sec.4.5.3 of BCPC*)

**Table 4.43. Theories on Civilizational Holism
(Part IV)**

IV. Theories in Relation to Society

—*At the Organizational Theoretical Level*

- 21. Theory of E-Civic Alienation (Peter Baofu)
(Ch.7 of *FCD*)
- 20. Combinational Theory of Organization (Peter Baofu)
(*FPHO*; Ch.6 of *ALD*)

—*At the Institutional Theoretical Level*

- 19. Heterodox of Theory of Education (Peter Baofu)
(*FPHEDU*)
- 18. Reconstruction of Theory of Law (Peter Baofu)
(*FPHLAW*)
- 17. Theory of Post-Capitalism (Peter Baofu)
(Ch.10 of *FCD*; Chs.2 & 4 of *FPHC*; *BCPC*)
- 16. Theory of Post-Democracy (Peter Baofu)
(Ch.10 of *FCD*; Chs.3 & 4 of *FPHC*; *BDPD*)
- 15. Dynamic Theory of Comparative Political Systems
(Peter Baofu) (*ALD*)

—*At the Systemic Theoretical Level*

- 14. Contingent Theory of Urban Planning (Peter Baofu)
(*FPHUP*)
- 13. Totalistic Theory of Communication (Peter Baofu)
(*FPHMM*; *FCD*; *FHC*)
- 12. Ambivalent Theory of Technology (Peter Baofu)
(*FPHE*; *FCD*; *FHC*)
- 11. Multifaceted Theory of War and Peace (Peter Baofu)
(Ch.9 of *FCD*; Ch.1 of *FPHK*)
- 10. Theory of Post-Humanity (Peter Baofu)
(Ch.7 of *FHC*; Chs.3, & 10 of *FCD*; Chs.1, 3 & 4 of *FPHC*;
and other books of mine)
- 9. Theory of the Cyclical Progression of System Integration
and Fragmentation (Peter Baofu)
(Chs.9-10 of *FCD*)
- 8. Synthetic Theory of Information Architecture (Peter Baofu)
(*FIA*)

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**Table 4.43. Theories on Civilizational Holism
(Part V)**

IV. Theories in Relation to Society (*cont'd*)

—*At the Structural Theoretical Level*

- 7. Theory of the Cyclical Progression of Hegemony
(Peter Baofu)
(Chs.9-10 of *FCD*; Chs.1, 3 & 4 of *FPHC*; *BDPD*)
- 6. Theory of the Cyclical Progression of Empire-Building
(Peter Baofu)
(*BWT*)

V. Meta-Theories (in Relation to Theories)

—*At the Ontological Meta-Theoretical Level*

- 5. Theory of Existential Dialectics,
or the Holistic Theory of Knowledge (Peter Baofu)
(*FHC*; *FCD*; *FPHC*; *BDPD*; *FC*; *FAE*; *ALD*; *FIA*; *FPHK*; etc.)
- 4. Contrastive Theory of Rationality (Peter Baofu)
(*FPHML*)

—*At the Methodological Meta-Theoretical Level*

- 3. Critical-Dialectic Theory of Formal Science (Peter Baofu)
(*FPHFS*)
- 2. Theory of Methodological Holism (Peter Baofu)
(Ch.1 of *FCD*; Ch.1of *FPHC*; *Sec.2.1* & *Sec.2.5* of *BCPC*; *FC*;
FPHK; etc.)

VI. Theories in Relation to the Rest

—*At Other Levels (Historical)*

- 1. Theory of the Evolution from Pre-Modernity to After-
Postmodernity (Peter Baofu)
(*FHC*; Ch.9-10 of *FCD*; *FPHC*)

Notes: All these theories are my constructions, as some of the main contributions of my grant project on civilization and its future. These examples are solely illustrative (not exhaustive), and some of the items can be reclassified somewhere else. Nor are they always mutually exclusive. Since they are generalities, exceptions are expected.

Sources: From my previous books.

Table 4.44. Three Great Future Transformations of Mind Games

• Virtual Games

- Ex: online chess
- Ex: virtual experience

• Novel Games

- Ex: new chess variants
- Ex: new chess engines

• Post-Human Mind Games

- Ex: the quest for broader/deeper mental benefits of chess playing
- Ex: games designed for the evolution of the mind into different body-less forms (e.g., “floating consciousness,” “hyper-spatial consciousness,” “unfolding unconsciousness”)

Notes: The examples in the categories are solely illustrative (not exhaustive), and the comparison is relative (not absolute), nor are they necessarily mutually exclusive. And some can be easily re-classified elsewhere. As generalities, they allow exceptions.

Sources: From *Sec. 4.16* of *FPHCHESS*. See text for more info. Also, consult *FCD* for strategy and tactics in warfare and *FPHO* for strategy and tactics in organization.

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