Mario Bunge's Worldview and its Implications for

The Modernization of Arabic-Islamic Philosophy

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Abstract

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This study relates philosophy of science and philosophy of religion. It compares a system of western thought and its implications for contemporary Arab-Islamic philosophy. The basis for this approach lies in the concept of worldview as rooted in the process of systematization of available human knowledge in a harmonious way. Actually, many secularists attack the religious outlook but fail to provide a coherent and systematic worldview of their own. Mario Bunge (b. 1919) overcomes such a deficiency and offers a coherent modern worldview. The philosophy of Taha ‘Abd al-Rahman (born 1945), which attempts to modernize Arab-Islamic philosophy, is taken as the religious counterpart to Bunge’s modern worldview.

Since the late 1950s, Mario Augusto Bunge, a widely read and influential Argentinean-Canadian philosopher of science, has become a leading figure of what might be called the scientific humanist project. This project aims at rethinking Kant’s combining of reason and experience, and this is why Bunge calls his new orientation ratio-empiricism. His philosophical endeavours culminate in a system of philosophy epitomized in the monumental nine-part *Treatise on Basic Philosophy* (1974-1989). Bunge’s numerous works necessitate the study of the dynamics of worldview-construction and its relation to what he calls ‘systemism.’ Bunge’s worldview is a synthesis of ontological materialism, epistemological realism, and what he calls ethical ‘agathonism.’ This synthesis forms a harmonious system that meets the requirements for a coherent worldview; it is the background of comparison for what Taha calls the ‘spirit of modernity.’

This study refers to Bunge’s unified worldview (chapter 1) and articulates its overall dynamics (chapters 2 to 4). Chapter 5 on Taha and his ‘spirit of modernity’ attempts to show that the modernization of Arabic-Islamic philosophy cannot achieve philosophical sovereignty without the contributions of systematic philosophy. The comparative merit of this study is significant for Bunge’s system, as it reveals its incompleteness: the rational, natural, and social sciences are studied in detail, while a great deal of the human sciences is not considered. But it is also significant for the Islamic outlook, as it presents a systematic response to the unified religious view and thus encourages religious persons in general, and Islamic philosophers in particular, to respond genuinely to Bunge’s challenge.

Résumé

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Cette étude relève de la philosophie des sciences et de la philosophie de la religion. Elle compare le système de pensée occidental à la philosophie musulmane contemporaine, en tenant compte de la signification des conséquences de celui-là pour celle-ci. La méthode employée repose sur le concept de «vision du monde» en tant que systématisation harmonieuse des connaissances humaines disponibles. De nos jours, beaucoup de laïques attaquent les points de vue religieux; mais ils échouent à développer une vision du monde cohérente et systématique sur laquelle ils s’appuieraient. La pensée de Mario Bunge, un philosophe des sciences argentino-canadien né en 1919, ne contient pas de telles déficiences et offre une vision du monde moderne et cohérente. Dans cette étude, la philosophie de Taha ‘Abd al-Rahman, penseur né en 1945 et qui travaille à moderniser la philosophie arabo-musulmane, est considérée comme l’équivalent religieux de la vision du monde de Bunge.

Depuis la fin des années cinquante, Mario Augusto Bunge est le chef de file de ce qui peut être appelé le «projet scientifique humaniste». Le but est de repenser la combinaison kantienne de la raison et de l’expérience. C’est parce qu’il poursuit cette fin que Mario Bunge considère son entreprise comme ratio-empirique. Elle aboutit à un système philosophique incarné par son monumental *Treatise on basic philosophy* (1974-1989) qui comporte neuf volumes. Les œuvres nombreuses de Bunge obligent à étudier la dynamique en cause dans la «construction-de-vision-du-monde» et sa relation avec ce qu’il nomme le «systémisme». La vision du monde de Bunge est la synthèse d’un matérialisme ontologique, d’un réalisme épistémologique, et d’un «agathonisme» éthique. Elle forme un système harmonieux qui rencontre l’exigence de cohérence imposée aux visions du monde. Cette synthèse sert de point de comparaison avec ce que Taha ‘Abd al-Rahman nomme «l’esprit de la modernité».

Le chapitre 1 réfère à la vision du monde de Bunge, et sa dynamique est esquissée dans les chapitres 2 à 4. Le chapitre 5 portant sur Taha ‘Abd al-Rahman et son «esprit de la modernité» montre que la philosophie arabo-musulmane ne pourra atteindre sa souveraineté philosophique sans la contribution de la philosophie systématique. Cette étude comparative révèle d’une part l’inachèvement de la pensée de Bunge, puisqu’elle étudie dans le détail les sciences rationnelle, naturelle et sociale, mais oublie de considérer certaines sciences humaines pourtant d’importance majeure. D’autre part, elle montre que la vision du monde de Bunge a pour avantage d’offrir une réponse systématique aux visions religieuses unifiées, tout en encourageant les penseurs religieux en général et les philosophes en particulier à lui répondre de manière originale et authentique.

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Ahmad Zahaadden Obiedat

Contents

Abbreviations

ChR	M. Bunge, Chasing Reality: Strife over Realism, 2006.
EaC	M. Bunge, Emergence and Convergence, 2003.
EGR	M. Bunge, Ethics: the Good and the Right, 1989.
EtW	M. Bunge, Epistemology and Methodology I: Exploring the World, 1983.
ExJ	M. Bunge, Philosophy of Science II: From Explanation to Justification, 1998.
FP	M. Bunge, Foundations of Physics, 1967.
GGS	J. Diamond, Guns, Germs, and Steel: The Fates of Human Societies, 1999.
IFF	P. Watson, Ideas: A History of Thought and Invention from Fire to Freud, 2005.
MaM	M. Bunge, Matter and Mind: A Philosophical Inquiry, 2010.
PhR	N. Rescher, Philosophical Reasoning, 2001.
PiC	M. Bunge, Philosophy in Crisis: The Need for Reconstruction, 2001.
PoP	M. Bunge, Philosophy of Physics, 1973.
PST	M. Bunge, Philosophy of Science I: From Problem to Theory, 1998.
RAH	Taha ‘Abd al-Rahman, Ruh al-Hadathah, 2006.
SHoP	Ronald Wright, A Short History of Progress, 2004.
SoM	P. Weingartner & Georg Dorn, Studies on Mario Bunge’s Treatise, 1990.
SSuD	M. Bunge, Social Sciences under Debate: A Philosophical Perspective, 1998.
TLP	L. Wittgenstein, Tractatus Logico-Philosophicus, 2001.
UtW	M. Bunge, Epistemology and Methodology II: Understanding the World, 1983.
WiGH	P. K. Crossley, What is Global History?, 2008.

* See also Bibliography. Other abbreviations are indicated in Siegfried M. Schwertner, *International Glossary of Abbreviations for Theology and Related Subjects* (Berlin & New York: Walter de Gruyter, 1992), xli + 488 p.

Introduction

This study is based on the premise that worldview construction is a basic aspect of an active and inspiring human culture. According to Wilhelm Dilthey (1833-1911), worldviews are "more broadly based attempts at acquiring a unified perspective on life."[1] For Dilthey, "[w]hen a worldview has been raised to a level at which it is grasped and grounded conceptually and thus claims universal validity, we call it metaphysics."[2] This study articulates the worldview proposed by Mario Bunge, whose works, according to Andreas Pickel of Trent University, "constitute perhaps the most comprehensive and systematic philosophy of the twentieth century."[3]

In order to articulate Bunge's worldview, chapter one sets the stage by a brief introduction to the life and works of Mario Bunge, and then offers an exploration of the nature and history of the concept of 'systemization' as an essential goal of worldview construction. Chapters two, three, and four bring forward an investigation of Bunge's worldview by consecutively introducing his harmonious systematization of ontology, epistemology, and ethics.

Chapter five of this study focuses on the modernization of Arab-Islamic philosophy, a modernization linked to new changes in human knowledge and social life. It argues that the modernization of Arab-Islamic philosophy cannot achieve its legitimate goal of philosophical sovereignty without learning from the essential contribution of systematic philosophy. Taha 'Abd al-Rahman's work provides a good summary of

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[1] Rudolf Makkreel, "Wilhelm Dilthey", *The Stanford Encyclopedia of Philosophy* (Fall 2008 Edition), Edward N. Zalta (ed.), URL = http://plato.stanford.edu/archives/fall2008/entries/dilthey/

[2] In Ramon J. Betanzos' translation. Wilhelm Dilthey, *Introduction to the Human Sciences: An Attempt to Lay a Foundation for the Study of Society and History* (Detroit, MI: Wayne State University Press, 1989), 29.

[3] A. Pickel, "Mario Bunge's Philosophy of Social Science: A Review Essay," *Society* 38/4 (May/June 2001), 71.

contemporary Islamic revival *without* the demagogical religious tone sometimes attached to it, and he indirectly summarizes most of the Islamic thinkers' objections to modernity. This is why Taha's line of thinking can be compared to al-Ghazali's attack on Hellenistic-Islamic philosophy in his famous work on the 'destruction of philosophy,'[4] although he does not enjoy the kind of counter attack offered by Ibn Rushd's work on 'the destruction of the destruction of philosophy.'[5] The comparison between Bunge's and Taha's worldviews has its significance also for Bunge's system as it reveals the incompleteness of it: whereas rational, natural, and social sciences are studied in detail, a great deal of 'anthropological philosophy' as worked out in the human sciences is left out. Such comparative study is significant for the religious point of view as it presents a response to the unified religious outlook and therefore encourages religious thinkers to respond genuinely to Bunge's challenge. In this study, Bunge's worldview emerges in the context of the religious worldview seen in Christianity and Islam and draws, in part, on the Aristotelian tradition. Therefore, the religious worldviews of Eastern religions are beyond the scope of this study.

[4] Michael E. Marmura translated al-Ghazali's work as *The Incoherence of the Philosophers* (Provo: Brigham Young University, 2002).
[5] Simon Van Den Bergh translated Ibn Rushd's (or Averroes) work as *The Incoherence of the Incoherence.* Cambridge: Gibb Memorial Trust, 2008.

Chapter One

Mario Bunge and the Meaning of 'Systemism'

1.1 A Worldview Constructor

Since the late 1950s, Mario Augusto Bunge, a widely read and critically important philosopher of science, became a leading figure of what might be called the 'scientific humanist' project. This project aims to rethink Kant's combining of *reason* and *experience*; hence, Bunge calls his orientation ratio-empiricism. Scientific humanism is rational on the basis of rigorous *consistency* and imagination-based *theorization*; it is experiential through reliance on *testing* and the *essentiality of matter* and *social life.*

Mario Bunge was born in Argentina in 1919. His father, a medical doctor and political activist, envisioned his education in a way that would make him a Renaissance person. German, English, and French were among the languages he learned in his childhood, along with his native Spanish. Through reading and by accompanying his father to political and intellectual debates, he was introduced to a wide variety of ideologies, literatures, and philosophies in his youth (SoM 677). Despite this variety, Bunge was attracted to theoretical physics as his first academic specialization. In 1943, he "started to work on problems of nuclear and atomic physics under the guidance of Guido Beck (1903–1988), an Austrian refugee and a student of Heisenberg."[6] In 1952, at the age of thirty-three, he earned a PhD degree in physico-mathematical sciences at the *Universidad Nacional de La Plata*. He received his full professorship in theoretical physics at the *Universidad of Buenos Aires* (1956-58) and then in philosophy at the same university (1957-63). He continued to work in Argentina until 1963, at which point he

[6] Michael R. Matthews, "Mario Bunge: Physicist and Philosopher," *Science & Education* 12 (Dordrecht, Kluwer Academic Publishers, 2003), 434. Available online at: http://www.springerlink.com/content/t465u58024062867/fulltext.pdf

felt too politically uncomfortable to remain. During the next years, Bunge spent six months as a postdoctoral researcher under David Bohm in Brazil, followed by various posts as a visiting professor in the United States and in Germany, until he received a full professorship in 1966 at McGill University in Montreal. The peak of his career was in Canada as Frothingham Professor of Logic and Metaphysics at McGill. In 2009, at the age of ninety, he retired from McGill as Emeritus Professor.

Physics is only one chapter in Bunge's encyclopaedic scholarly life. When he was a teenager his first intellectual loves were Hegel and psychoanalysis. However, reading Bertrand Russell cured him of his love of psychoanalysis, and studying mathematical logic corrected his erstwhile inclination to Hegel and Marx (SoM 677). This new philosophical orientation, Bunge says, "pushed me into physics, […] and I continued to read philosophy on the side" (SoM 677). His early philosophical interest is most evident in the monumental nine-part *Treatise on Basic Philosophy*. This ambitious project made it possible for him to produce works that cover most aspects of contemporary philosophy, such as *Philosophy of Science*,[7] *Philosophy of Physics* (1973), *Foundations of Biophilosophy* (with Martin Mahner - 1997), *Philosophy of Psychology* (with Ruben Ardila - 1987), *The Mind-Body-Problem* (1980), *Finding Philosophy in Social Science* (1996), *Political Philosophy* (2008), *Ethics: the Good and the Right* (1989), *Philosophy in Crisis* (2001), and his *Philosophical Dictionary* (2003).

These contributions to knowledge brought Bunge the Prince of Asturias prize in Communications and the Humanities in 1982, as well as sixteen honorary doctorates and

[7] This title is an updated and revised edition of *Scientific Research,* in two volumes (Heidelberg- New York: Springer-Verlag, 1967) and currently appears under the following titles: *Philosophy of Science: From Problem to Theory*, Vol. 1 (New Brunswick, NJ: Transaction Publishers, 1998) and *Philosophy of Science: From Explanation to Justification,* Vol. 2 (New Brunswick, NJ: Transaction Publishers, 1998).

four honorary professorships to date.[8] Bunge has published in fields ranging from physics to philosophy, linguistics to logic, biology to psychology, and sociology to political science. A famous disciple of Karl Raimund Popper, Joseph Agassi, whom the ten-volume *Routledge History of Philosophy* entrusted to write the chapter on "philosophy of science,"[9] made the following statement in 1969 in a book review of Bunge's *Scientific Research*: "Bunge, apart from being a physicist himself, shows he has read more, and more diversely, than almost anyone alive."[10]

The unifying thread of Bunge's scholarship, Michael R. Matthews says, "is the constant and vigorous advancement of the Enlightenment Project, and criticism of cultural and academic movements that deny or devalue the core planks of the project."[11] He systematically criticizes major philosophical doctrines like empiricism, pragmatism, intuitionism, phenomenology, Marxism, hermeneutics, and logical positivism. Bunge himself admits that his philosophical orientation comes from a system of viewpoints, including materialism, scepticism, realism, scientism, systemism, and humanism (PiC 12). A brief sketch of Bunge's synthesized philosophical doctrine can be found in his *Social Science Under Debate* (1998), where he calls for "objective and relevant fact-finding, rigorous theorizing, empirical testing, as well as morally sensitive and socially responsible [philosophy]" (SSuD xi). The first point (objective and relevant fact-finding) refers to his lifetime advocacy for a naturalist ontology that strives to explore reality as

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[8] For further information see Professor Bunge's webpage: www.mcgill.ca/philosophy/faculty/bunge/ (accessed: May 11th, 2011) and the interscientia biographies: http://www.uottawa.ca/publications/interscientia/biographies/bunge.html

[9] J. Agassi, "The philosophy of science today," in Stuart G. Shanker (ed.), *Routledge History of Philosophy*, Volume 9, *Philosophy of Science, Logic and Mathematics in the Twentieth Century* (NY: Routledge, 1996), 235-265.

[10] J. Agassi, *The Gentle Art of Philosophical Polemics: Selected Reviews and Comments* (La Salle, Ill.: Open Court Publ. Co., 1988), 447.

[11] M. R. Matthews, "Mario Bunge: Physicist and Philosopher," *Science & Education* 12 (Dordrecht: Kluwer Academic Publishers, 2003), 431.

objectively as possible. This position came as a result of his critique of the subjectivism and "phenomenalism" of Berkeley, Hume and Kant, which denies the ability to know reality in itself (ChR 43-51). In particular, Bunge adopts the Aristotelian view that the "external world exists independently of our sense experience and ideation and that it can be known, if only in part."[12] The second point (rigorous theorizing) refers to the continuation of the heritage of analytical philosophy as summarized in both linguistic clarity and mathematically precise reasoning. The third point (empirical testing) builds on the cumulative and progressive findings of natural science and technology, in which measured testing along with compatibility with the factual-formal general body of knowledge are criteria for the acceptance of new hypotheses. The fourth point (moral sensitivity) reflects Bunge's argument for the existence of cross-cultural basic values and his universalistic stance on mutual human duties and rights. Finally, socially responsible philosophy reveals his repugnance for conservative and neo-liberal politics. This short presentation of Bunge's philosophical orientation is necessary to understand the general horizon of his scientific humanism. The way Bunge describes the major aspects of his epistemology can be applied to all of his works: "We shall pick up the rich *legacy* of epistemological problems and hints […]. We shall enrich it with some of the *problems* and findings of contemporary scientific, technological and humanist research, topping it with new *hypotheses* compatible with the science of the day […]. We shall elaborate and *systemize* the whole with the help of a few modest tools such as the concepts of set and function. [….]. Finally, we shall try to put epistemological principles to the *test*: we shall

[12] Andreas Pickel, "Systems and Mechanisms: A Symposium on Mario Bunge's Philosophy of Social Sciences," In *Philosophy of Social Sciences* 34/2 (June 2004), 171.

check whether they account for the actual conduct inquiry or whether they might help improve it" (EtW xv – emphasis mine).

Bunge's *Treatise on Basic Philosophy,* his major achievement, is a synthesis of contemporary philosophy in a single system compatible with the advancement of modern human knowledge both scientifically and philosophically (see bibliography). It encompasses what he considers to be "the nucleus of contemporary philosophy," namely, *semantics* (theories of meaning and truth), *ontology* (general theories of the world), *epistemology* (theories of knowledge), and *ethics* (theories of value and right action) (EGR v). This study focuses on Bunge's ontology, epistemology, and ethics, since they build up the basis of his philosophy. Most other philosophical worldviews are also made out of this triad (more on this, # 1.3). Bunge wrote extensively on two other topics that will not be covered here, namely, logical semantics and social sciences. The reason for this exclusion is that Bunge's writings on semantics are highly technical, using mathematical logic, and do not substantially add to an understanding of his worldview. As to his works on social science, they are an application of his ontology, epistemology, and ethics and thus will not be the focus here. Before introducing Bunge's system of ontology, epistemology, and ethics, the preliminary task is to understand what a *system* is.

1.2 Systematic Worldview as the Task of Philosophy

The difficulty in explaining Bunge's system, beyond mere description, is the one any student of philosophy would face while coming to grips with any grand philosophical theory. The work of German-American philosopher Nicholas Rescher (b. 1928) aids in the analysis of Bunge's systemism. First of all, Rescher has an amazing knowledge of the

philosophical literature of a vast number of philosophical schools. Recognition of this vast philosophical knowledge made it possible for him to serve as the President of the American Philosophical Association, of the American Catholic Philosophy Association, of the American G. W. Leibniz Society, of the C. S. Peirce Society, and of the American Metaphysical Society. He is also the founder of the *American Philosophical Quarterly* and was its Editor in Chief for a few decades.[13] Although Rescher did not offer a comprehensive system like Bunge's, the majority of his works are dedicated to the analysis and architecture of philosophical systems. This is particularly the case in his two widely acclaimed works: *The Strife of Systems: An Essay on the Grounds and Implications of Philosophical Diversity* (1985) and *Philosophical Reasoning: A Study in the Methodology of Philosophizing* (2001). Rescher's work is also helpful in elucidating Bunge's notion of system because these scholars are familiar with one another's contributions to philosophy. For example, Bunge comments on Rescher's *Complexity: A Philosophical Overview* by saying that "Rescher is the most learned, productive, and clear of all contemporary philosophers. It is impossible not to learn something from every one of his nearly one hundred books."[14] Bunge repeats this admiration twelve years later in the dedication of *Matter and Mind*, writing, "I dedicate this book to Nicholas Rescher, the most learned, lucid and fair of us" (MaM v). Rescher, in response, has commented on many of Bunge's works; for instance, he wrote about Bunge's *Emergence and Convergence*: "Mario Bunge has over the years established himself as the prime exponent

[13] Nicholas Rescher, *Autobiography* (Frankfurt: Ontos, 2007), 262.
[14] On the back cover of the cited book (New Brunswick, N.J.: Transaction Publishers, 1998). Bunge is not the only one having this high appraisal of Rescher's work. George R. Lucas, a specialist of Whitehead, considers Rescher as "one of the nation's most literate, prolific, and respected philosophers" (On the back cover of N. Rescher, *Process Metaphysics: an Introduction to Process Philosophy* [Albany, NY: SUNY Press, 1996].

of a scientifically informed philosophy of man, society, and nature. His characteristic mode of approach seeks to integrate science into a seamless whole with the traditional philosophical concerns. […*Emergence and Convergence*] forms part of this larger project and offers us some vintage Bunge."[15] Rescher also admires Bunge's ability to combine social sciences, i.e., psychology, economics, politics, law, culturology, and sociology, in one grand synthesis. So he commends Bunge's *Social Science under Debate* by saying that Bunge's work "covers a vast domain with a firm grasp of the big issues. Its great advantage lies in treating all this material from a unified perspective."[16]

This section presents Rescher's analysis of the 'system' idea in order to have a better view of Bunge's thought. For Rescher, philosophy is the greatest manifestation of human existence, while systematization is the best method for philosophy. Philosophy is at the summit of human activities, and system building is the best approach to this endeavor.

Philosophers have identified human cognitive power with certain faculties. These identifications could be seen in Aristotle's reasoning, Hegel's consciousness, Bergson's intuition, Dewey's experience, or Heidegger's speech. Rescher identifies the variety, complexity, and openness of the human mind with the variety of philosophy itself. For instance, one can say: I think, thus I philosophize, or, as he puts it, "philosophizing is [itself] cognitive engineering" (PhR 160). As a result, philosophy becomes more than the well-known doctrines in the history of philosophy; it rather becomes the very source of our success and fitness as living beings in the first place. It is "not by hard shells or sharp claws or keen teeth that we carved out our niche in evolution's scheme of things" (PhR

[15] Toronto: University of Toronto Press, 2003; see the back cover of the hard cover edition.
[16] Toronto: University of Toronto Press, 1996; see the back cover of the soft cover edition.

7), but by our distinctive cognitive power and by our instinct to wonder and find answers. This opens philosophy to a space that is wider than conventional theoretical topics of philosophy, such as logic, truth, or being. Philosophy becomes synonymous with the gist of all human cognitive powers, which lead to the sum of physical fitness. This vision is anchored in human bio-psychological instincts, which are not different from our need for water and air. Indeed, "we have questions and we want (*nay*, need) answers" (PhR 7). In other words, "not by hard shells or sharp claws […] we carved out our niche" (PhR 7), but by our urgent need to find answers and solve problems.

Prometheus' fire was not stolen from the gods in the times of the Greeks. This symbolic monumental event happened much earlier: the Promethean moment might go back 1.4 million years when our human ancestors asked: What is the best stone to use for hunting?[17] How can we obtain that fire that will scare beasts away and light the darkness? Of no less significance are questions that appeared later, such as: How can we breed these obedient mammals and keep them at our disposal for their meat, wool, and milk? These critical prehistoric questions led to the emergence of great and novel answers such as stone tools, control of fire, and domestication of animals, all of which were preconditions for the rise of sedentary human communities and thus civilization (GGS 92). These prehistoric questions are as essential as the more complex contemporary counterparts: How can we live together with cultural disagreement and value conflict? Is there knowledge revealed by a divine being that must have priority over laws enacted by people? How can we use energy and technology without depleting our nonrenewable sources and destroying our only available niche?

[17] Interestingly, the Cambridge archeologist and historian of ideas, Peter Watson, suggests that the 'hand-axe' is the very first idea that occurred to humans, and we have material proof for its existence some 1.4 million years ago (IFF 23 & 25).

These and other big questions haunt our contemporary mind and thus demand answers. Answering these questions is not a theoretical luxury. To the contrary, I seek to live, thus I philosophize or "we must philosophize; it is a situational imperative for a rational creature" (PhR 6). "There is no alternative to philosophizing as long as we remain in the province of reason" (PhR 10). Bunge also has a similar stance when he says, "Don't try to ignore philosophy: Those who ignore philosophy only succeed in reinventing it" (UtW 270).

Between question, answer, and the rise of new questions our identity takes shape as "*Homo quaerens*", Rescher suggests (PhR 7). Therefore, the bigger, more complex, and more cumulative our questions become, the higher their relevance is and the stronger our need to identify with them. Bunge agrees with Rescher and thinks that knowledge "advances not only through theoretical and empirical research but also through elucidation, analysis, and systemization of their own presuppositions, generic constructs, and methods – a typically *philosophical task*" (SSuD xiii – emphasis mine).

In this line, philosophy, according to Bunge, "is the study of the most fundamental and cross-disciplinary concepts and principles" (MaM 260). Similarly, according to Rescher, philosophy is defined as "the venture in rational inquiry whose mission is to provide tenable answers to our 'big questions' regarding human being, the world, and our place within its scheme of things" (PhR 3). The grand scale of these questions addresses three particular aspects (PhR 5): informative (what is the case?), practical (how to do or achieve it?), and evaluative (what to aim for?). The concerns with the most general 'whatness'; 'howness,' and 'whence' do not make philosophy's questions detached from everyday concern. Rather, philosophy is the most practical of

matters (PhR 8): a manifestation of human existence, its vitality and evolution in the flux of history. In particular, the "mission of philosophy is to ask, and to answer in a rational and disciplined way, all those great questions about life in this world" (PhR 4). In this case, philosophy is neither an open-ended Socratic questioning with no assured and substantial answers,[18] nor does it furnish ideological answers based on one dogmatic principle that cannot be falsified or improved.[19] In order to overcome the problems of *open-ended questions* and *closed answers*, philosophy has to be practical in its concerns and truthful in its answers. Even if someone embraces an entirely skeptical epistemology, the need for water, food, and elimination of waste remains. Philosophy has to be responsible for what it says. Hence, when social philosophy proposes that economic growth is not the sole indicator of happiness, or when philosophy of science suggests that mathematical language is superior to natural language in rigor, there has to be an evaluation of the validity of these claims. This is why, Rescher asserts, "philosophizing is thus a matter of truth estimation in the light of experience regarding these larger issues that define the domain" (PhR 3). Experience has falsified many dominant philosophies of the past. For instance, the theory of four elements put forward by Empedocles of Acragas (IFF 131) was completely disproven and replaced by modern chemistry and the mapping of the periodic table of the elements by the Russian scientist Mendeleev in 1869; these four elements were replaced by 118 elements to be naturally found on earth alone. Also, the theory of the four humors that constitute the human body put forward by Galen (IFF 214) was outdated with the inception of modern medicine and replaced by biochemistry.

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[18] Leszek Kolakowski, *Why Is There Something Rather Than Nothing? 23 Questions from Great Philosophers* (London: Basic Books, 2007), 3.
[19] N. Rescher, *Interpreting Philosophy: The Elements of Philosophical Hermeneutics* (Frankfurt-Main: Ontos Verlag, 2007), 165-166.

All of these new findings are now the given of today's scientifically informed philosophies. These new findings are subject to correction in the light of newer findings. As Bunge puts it, "after all, the scientific knowledge of facts is *always partial, indirect, uncertain and corrigible*" (PST 26 – emphasis mine).

Rescher attributes the following three features to philosophy: philosophy is the task of questioning and answering; questioning and answering targets the biggest questions that subsume most if not all of the smaller questions; answering is a matter of truth-estimation in the light of experience. These three aspects of the act of philosophizing in a plethora of minds and through many generations generate vast and complex literatures, which become the repository of our routinely proven answers; we rely on these literatures for our old and new challenges. These literatures are the basis of our worldview. We do not routinely question the need for living in a society because we learned through experience that living outside a society does not satisfy our complex needs and wants, not to mention the element of boredom in living alone. Routinely proven answers, on the one hand, and old or new but unanswered questions, on the other, map out the landscape of the known and the unknown. This is why philosophy "tries to do for our cognitive landscape what the Roman engineers did for the roads of their world" (PhR 104). In the philosophical landscape we find psychological security in the face of the frightening darkness of the unknown and actual security in the face of available answers.

A philosophical worldview is the sum-total of all the answers to our biggest questions in the light of experience. A home is not merely a mailing address, but it is cognitively that capacity to "create an edifice of thought able to provide us with an

intellectual home that affords a habitable thought shelter in a complicated and challenging world. As a venture in providing rationally cogent answers to our questions about large-scale issues regarding belief, evaluation, and action, philosophy is a sector of the cognitive enterprise at large" (PhR 4). The engine of philosophy turns with the aid of two powers: the power of the human need for questioning and answering, and the power of the light of experience; the first helps us in posing questions based on our psychological, social, or theoretical needs, while the second provides us with the experiential guide within the spectrum of true and false.

If a philosophical worldview is qualified by the light of experience, what does experience mean? The physically neutral experience, the subjectively psychological, the socially conventional, or the logically constructed activity? The variety of experiences in various domains and times puts a question mark on the efficiency of our philosophical edifice. Why "pursue such a venture in the face of the all too evident possibility of error?" (PhR 9) When faced with thirst or hunger for answers in the midst of the desert of ignorance we would drink and eat whatever is available, even if it might lead to death. This is why "philosophizing involves an act of faith: When we draw on our experience to answer our questions we have to proceed in the tentative hope that the best we can do is good enough, at any rate for our immediate purpose" (PhR 9). Such hope has a scientific terminology in Bunge's following words: "the quest for final certainty characteristic of nonscience is replaced in science by the quest for *approximate but perfectible* objective truth" (ExJ 350 – emphasis mine).

Otto Neurath (1882-1945), the Vienna Circle philosopher and economist, summarizes the imperfection and risk of positing experience as the basis of a

philosophical worldview in the following allegory: "We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials." [20] Given this predicament of our experience, we are not looking for "the uniquely correct answer but the least problematic, most defensible position" (PhR 143). Neurath's allegory on the incompleteness of human experience adds a fourth element to Rescher's characterization of philosophy: experience, factual or fictional, is conditioned by situational and cognitive feasibility, and thus involves a degree of risk and gamble. This addition modifies the characterization of a philosophical worldview. The viability condition (or 'feasibility' in Bunge's terminology) brings a restriction to the correspondence theory of knowledge proposed by Aristotle and championed again by the positivists, the Vienna circle, and Bertrand Russell. This restriction is the pragmatist theory of knowledge proposed by William James, Charles Sanders Peirce, and John Dewey. We need to be truthful and accurate, yet these goals are conditioned by the viability of our conditions as researchers. This is why Rescher finds the pragmatist theory of knowledge complementary, not antithetical, to the correspondence theory of knowledge. Rescher provides further distinctions to the nature of the pragmatic movement. He says, "while Peirce's pragmatism is strictly cognitive and oriented to natural science, and James's is personalistic and psychological, Dewey's is communalistic and society-oriented."[21] Rescher's interpretation here is more on the side of Peirce's cognitive pragmatism.

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[20] Quine rephrases it this way: "Neurath has likened science to a boat which, if we are to rebuild it, we must rebuild plank by plank while staying afloat in it." (Willard Van Orman Quine, *Word and Object* [Cambridge, Mass: Harvard University Press, 1960], 2).

[21] N. Rescher, *Realistic Pragmatism: An Introduction to Pragmatic Philosophy* (Albany, NY: SUNY Press, 2000), 28.

Although questioning/answering and experience are philosophy's greatest resources, they prevent philosophy from being a stable and fixed worldview, an entity or a noun. Philosophy becomes instead a process best expressed as *philosophizing*. This unstable process explains the irritation of the medieval Muslim jurist, Ibn al-Qayyim al-Jawziyyah (1292-1350 CE), who wrote a critical chapter about his fellow Muslim philosophers entitled "You Almost Cannot Find Two Philosophers in Agreement on One Opinion."[22] Questions have many answers and experience varies dramatically. Kant realized that "every *answer* given on principles of experience begets a fresh *question*, which likewise requires *its* answer and thereby clearly shows that insufficiency of all physical modes of explanation to satisfy reason."[23] This is the power of abstract and fictional thinking, which can transcend our available answers from experience and imagine a variation, a similarity, an opposite, a precursor, and offspring, or perhaps even a totally different world. Thus, the more answers we get, the more insufficient they become by virtue of the questions that arise from these very answers, which threaten with incompleteness the whole endeavor of creating a philosophical worldview. "The difficulty in philosophy is not finding answers to questions; it is making up our minds in the full and precise detail about just what it is that we want to ask" (PhR 147). Again, the pragmatic theory of knowledge helps to sort out the many possible directions the correspondence theory of knowledge should take. Yes, we need answers, but once we get them, new questions arise. Bunge is well aware of this when he says, "The more we know the more and harder problems are we able to pose and solve. And the less helpful

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[22] Ibn al-Qayyim al-Jawziyyah, *Ighathat al-Lahfan min Masa'id al-Shaytan* (Amman: Dar Ibn al-Jawzi, 2000), 1016. A medieval Muslim philosopher would easily respond to this jurist by saying: You almost cannot find two of the jurists in agreement on one opinion.

[23] I. Kant, *Kant's Prolegomena to Any Future Metaphysics*, ed. Paul Carus (Chicago: The Open Court Publishing Company, 1912), 122. – Emphasis mine.

the existing body of knowledge proves to be to solve new problems, the more it invites its enrichment or replacement" (UtW 157).

Although knowledge has to be consistent, experience eventually runs into inconsistency (PhR 12). Still, philosophizing can overcome the infinite regress of questioning and answering and the eventual inconsistency brought about by experience through its essential method, namely, systematization. Philosophy, Rescher suggests, "requires that we transact our question-resolving business in a way that is harmonious with and does no damage to – our prephilosophical connections in matters of everyday life affairs and of scientific inquiries. Philosophy's mandate is to answer questions in a manner that achieves overall rational coherence so that the answer we give to some of our questions squares with those we give to others" (PhR 5). Consistency with new discoveries is the challenge of every philosophy. The discoveries of Newton, Marx, and Darwin, for example, have changed the rules by which the game of philosophy is played. After Newton we came to know that some of our mental imagination, i.e., mathematical reasoning, can capture a part of reality and predict its behavior in motion with more precision than any language ever could. Mathematics, in contrast with the view in medieval times, is now more than an application of accounting, engineering, or astronomy; it is rather a language of the mind that can narrate great facts about many things. Kant, in response to the Newtonian search for the laws of the universe, brought to philosophy the notion of searching the laws that govern the mind which are, in his opinion, space, time, and causality. As for Marx, philosophy took note of the influence of economic structure on the nature of society, politics, and culture itself. The worldview of social philosophy has been radically altered by thinking about wealth and human culture

as related to social classes and their problematic justification. Even more importantly, Darwin made it clear that we are an offspring of the animal kingdom. Yes, we are special, different, and cleverer, but we are still similar to all mammals in terms of body systems and they even share a degree of our emotional reactions. Darwin brought philosophy closer to animals and to the biological world, contrary to the unabridged distance previously believed to exist. In sum, no up-to-date philosophy can afford to ignore the new discoveries of physics, political economy, and evolutionary biology; in fact, they become part of the fabric of our current academia and modern culture. Philosophizing, thus, "does not in general ignore or suspend the cognitive materials obtained on the other fronts (e.g., science or everyday life experience). Rather, it tries to accomplish its cognitive work with maximal overall utilization of, and minimal overall disruption to, the relevant information that our other more familiar cognitive resources provide" (PhR 143).

Overcoming the infinite regression of questioning and answering and the eventual inconsistency brought about by experience needs new qualifications of the process of philosophy as a process seeking to achieve overall *systematization* of our *continuous* questioning and answering that squares with *viable* experience. Systematization promises to achieve the harmonious and overall rational coherence of our endless questioning and answering with the eventual inconsistency brought about by experience. After the correspondence theory of truth took the pragmatic turn, a second turn came in the form of the coherentist theory of truth.[24] Coherentism is championed by the German rationalist Leibniz (1646-1716), the less known British idealist philosopher Harold Henry Joachim (1868-1938) in his *The Nature of Truth* (1906), and his American student and philosopher

[24] Obviously, the 18th-century Leibniz came prior to the 20th-century William James and thus the pragmatic turn came much later than the coherentist turn. Yet, the presentation here is not chronological, but takes the order of the themes.

Brand Blanchard (1892–1987) in his massive *The Nature of Thought* (1939). Bunge embraces aspects of coherentism when he says, "systemicity is favorable to testability: the more numerous the relations a construct holds the better scrutable it is" (FP 75). Here, philosophizing is under the requirements of the three theories of knowledge - correspondence, pragmatic, and coherentist - which are respectively concerned with external truth, cognitive and practical viability of research, and internal harmony of findings. This triad is close to Bunge's philosophy when he defines his epistemological stance as "a sort of synthesis of rationalism (the coherence requirement), empiricism (positive evidence), and critical rationalism (negative evidence)" (UtW 70). This raises the question as to how the coherentist turn, evident in systemization, can overcome the eventual inconsistency brought about by experience.

Philosophy does not face the simple logical tasks of revealing fallacies or reaching inferences about particular propositions. It is also not about verification of hypothesis that experiments handle. Philosophy is neither on a par nor in rivalry with science and arts, as Gilles Deleuze sees its main task.[25] Philosophy is never about a single fact or procedure, but about collections. This is where systematization, when seeking to achieve harmonious and overall rational coherence, resorts to 'aporetics.' According to Rescher's definition of the Greek word '*aporia'* it is "a group of contentions that are individually plausible but collectively inconsistent" (PhR 93). "In chess, we cannot play rooks independently of what we do with bishops; in medicine, we cannot treat one organ independently of the implications for others; in political economy, we cannot design

[25] Deleuze and Guattari present a Continental version of Rescher's 'philosophy of philosophy:' they highlight that "concept, precept, and effect" are respectively the focus of "philosophy, science, and art" (G. Deleuze & F. Guattari, *What is Philosophy*? [New York: Columbia University Press, 1996], 117-201). However, this view, unlike Rescher's, does not give philosophy the upper hand in making a worldview.

policies for one sector without concerning ourselves with their impact upon the rest" (PhR 160-161). Why should philosophy be any different? On the contrary, philosophy proper is the leading path that helps other disciplines harmonize their domains.

Rescher gives an example of an *aporetic* cluster from Greek philosophies (PhR 94). This example is composed of a group of four contentions about the nature of the world, which forms the scientific and conceptual worldview of that philosophical era: 1) reality is one (real existence is homogenous); 2) matter is real (self-subsistent); 3) form is real (self-subsistent); 4) matter and form are distinct (heterogeneous). There is a clear tension in this group of propositions, as they are individually plausible but collectively inconsistent. Propositions two and four entail that reality is heterogeneous, which contradicts homogeneity stated in proposition 1. From a rational point of view, this group cannot be kept as an aggregate, and one or more propositions have to be eliminated for the sake of harmony. The following possible eliminative solutions were in fact actualized in the history of Greek philosophy (PhR 94):

- to reason from 2 and 4 above is to deny the homogeneity of 1, which is Anaxagoras' *pluralism* or Aristotle's *dualism* of form/matter;
- to reason from 1, 3, and 4 is to deny the materialism of 2, which is Plato's *idealism*;
- to reason from 1, 2, and 4 is to deny the formalism of 3, which is the *materialism* of the Atomists.
- to reason from 1 and 3 is to deny the distinctiveness of matter and form of 4, which is Pythagoras' *dual-aspect* theory.

These four paths are eliminative solutions in order to systemize the available experiential and conceptual knowledge of the Greeks stated in each of them. Systemization is a matter neither of pure speculation nor of accurate logical deduction; rather, it is a combination of speculation and deduction. Unlike the skeptic, who might throw up his hands in the air and leave the *aporetic* scene altogether, the practitioner of systemization (i.e., the philosopher) attempts to salvage whatever is rationally and experientially valuable in a difficult situation of inconsistency (PhR 96). Such *aporetic* clusters and the various attempts to resolve them with systematization is at the very core of the philosophical scene that prevailed from pre-Socratic times to the present.

Contentions dominate the universe of ideas filled with various experiences and divergent points of view. In this context, *aporetic* clusters structure the landscape of philosophy by showing that various positions are interlocked in mutual relationship, particularly with faraway positions albeit implicit, inferential, or not obviously related. This leads to a significant point resulting from how claims are interlocked in a mutual relationship, that all *affirmations imply indirect negations*. This is because every "claim conflicts not only with its own denial but also with whatever complex or combinations of claims has this denial as an inferential" (PhR 99). Thus, if one presumably claims that third-world countries are sad societies due to poverty, corruption, and diseases, one conversely, and not strictly logically, asserts that first-world countries are happy societies. Yet the systematic mind, which knows well that affirmations imply indirect negations, would recognize that first-world countries also suffer from stressful lifestyle, loneliness, and psychological alienation. The idea that all affirmations imply indirect negations has a great effect on systemizing *aporetic* clusters. For example, earthquakes,

hurricanes, famines, and epidemics seem completely normal facts of nature and they continue to exist while the great majority of religious people still hold their belief in God. In contrast, for many philosophers this cannot hold. The wisdom and mercy inferred from God's existence cannot coexist with hubris, evil, and the suffering of innocents in this world. This is why atheism, at least according to those who give the problem of evil a central position, is justified for the reason that an *evil creation* and a *good creator* are mutually exclusive concepts. Ludwig Feuerbach (1804-1872) is distressed by this evil when he says that "we learn this from the little care which nature takes of single individuals. Thousands of them are sacrificed without hesitation or repentance in the plenty of nature […] Not one half of the human race reach the second year of their age, but die almost without having known that they ever lived".[26] Let us spell out the *aporetic* clusters concerning the problem of 'evil creation' and a 'good creator':

1. Every contingent has a cause.
2. The world also shows a degree of uniformity where causes are interrelated.
3. The cause of all causes and of the uniformity in the world might be an intelligent mastermind.
4. Yet, the world is full of evil and suffering.

5.1. God exists and has his wise just ways. (for the theist)
5.2. Only nature exists and it has its rational but impersonal ways. (for the atheist)

The theist preserves 1, 2, and 3, while he has to deny or modify 4. Denying 4 would be sheer blindness. Consequently, the learned theist resorts to modifying 4 by explaining that suffering does not emanate from evil, but rather exists either as a just divine punishment for the sinful or a test for the pious, for whom a reward is waiting in this life or the one to come. The scientific atheist who takes a naturalist stance preserves 1, 2, and 4, while denying 3 or modifying it. Denial of causality and uniformity of 3 would only be

[26] L. Feuerbach, *The Essence of Religion: God the Image of Man: Man's Dependence upon Nature the Last and Only Source of Religion*. Trans. Alexander Loos, (London: Progressive Publishing Company, 1890), 64.

accepted by a total skeptic who would doubt that continuous breathing is a fact of human life; but for the rationalist atheist the causality and uniformity of 3 has to be accepted with some modification. For the atheist, elimination of 3 needs a possible modification of 1, by which every cause is preceded by another and so forth until an infinite past which leads either to the eternity of the world or to the infinity of the cause of all causes. Thus, we would not have the possibility of a first cause that would then be seen as God. The uniformity and impressive degree of order of nature in 2 is modified to be an impersonal natural lawfulness, not the product of a personal creator. Thus, for the scientific atheist, there is a natural lawfulness that is cruel to human beings, but rational understanding of this very lawfulness is merciful or good in itself, whereby humans can fight or at least avoid earthquakes, hurricanes, famines, and epidemics with the power of reason. For both the theist and the atheist, systemization is this hardworking spider that weaves its web of contentions, perfecting its knots and hardening their connections for the sake of an overall harmonious web.

Philosophizing resorts to rebuilding "a solid and secure edifice out of the ill-assorted contents placed at our disposal by our initial restrictions" (PhR 144). What humans need is this cognitive shelter, i.e. a worldview, in the face of the ocean of contentions that are individually plausible and collectively inconsistent. Elimination of the all too evident contentions is a dangerous strategy even when these contentions resist harmony. We cannot abandon solid facts and inescapable rational presumptions and we have to save the phenomena. The philosopher instead opts to modify these contentions through the creation of *distinctions*. Making distinctions is "the prime instrument for removing *aporetic* inconsistency in philosophy" (PhR 116). A distinction is not a mere

elimination or negation, but an amendment of the untenable thesis into something positive that can work in a harmonious way (PhR 117). Divine reward and punishment explain for the theist the phenomenon of *evil,* while the infinity of the world's beginning with its innate lawfulness saves the phenomenon of *causality and uniformity* for the atheist. In both cases, raw facts are the same, yet a distinction is what creates the great doctrinal difference. The moment the philosophical mind spots the obstacles of *aporetic* inconsistency and recognizes the need to resolve it, is the moment a philosophical concept is created. "Distinctions are the doors through which philosophy moves on to new questions and problems. They bring new concepts and new theses to the fore" (PhR 120). Distinctions are thus one of these birth moments of conceptual novelty; they are the reason why systemization is a never-ending process. A distinction "represents a Hegelian ascent – rising above the level of antagonistic positions to that of a 'higher' conception" (PhR 120). This is why it is usual for Bunge to initiate the debate by a statement of the following sort: "to motivate the definitions and hypotheses that will be proposed later on we shall start by drawing some *distinctions*."[27]

A critical reader might object that both the theistic modification of the problem of evil and the atheistic modification of the world's uniformity are neither descriptive nor based on direct factual analysis; rather, they are interpretations of the given facts in the light of other facts for the sake of coherence and harmony. This objection is a compliment rather than a criticism: it shows that the very nature of philosophical systemization is not a first-order discourse but rather a second-order one, controlling the input of other discourses. Systemization through distinctions of "philosophical problems relates to matters of interpretation which the scientific facts pose rather than resolve"

[27] M. Bunge, *Philosophy of Psychology* (New York: Springer Verlag, 1987), 234 – emphasis mine.

(PhR 36). The famous logician Frank Ramsey illuminates this point by saying, "In such cases it is a heuristic maxim that the truth lies not in one of the two disputed views but in some third possibility which has not yet been thought of, which we can only discover by rejecting something assumed as obvious by both the disputants" (PhR 121). Will the atheist-theist debate ever end? Inferring from Rescher's stance, this might happen only when harmony-oriented interpretations of various facts cease to exist. The process of interpretive distinction is what explains the continuity of philosophical doctrinal rivalry throughout history without a final triumph of one over the other. Second-order discourse, i.e., philosophical systemization, has a larger maneuvering space. To be sure, 20thcentury analytic philosophy could not replace hermeneutical philosophy for the same reason that neither 19thcentury idealistic philosophy could refute positivist philosophy, nor 18thcentury rationalist philosophy could defeat empirical philosophy. There is no solution for *aporetic* clusters, such that a given fact in our cluster might have more weight to pull other facts to its side. "In philosophy as in politics there are only individual positions, not collective ones – the community as a whole is too diversified, too balkanized for doctrinal coherence. We can say what philosophers teach, but not what philosophy teaches" (PhR 41). The astonishing fact about philosophical systemization is that "the continual introduction of the new ideas that arise in the wake of new distinctions means that the ground of philosophy is always shifting beneath our feet" (PhR 125).

The method of philosophizing as presented by Rescher suggests that a philosophical worldview can be reached mainly by an overall *systematization* of our *continuous* questioning and answering that squares with *viable* experience through interpretive *distinctions*. Bunge is a good case study to flesh out this general definition.

Yet, we need to briefly understand the context that led to the emergence of his system in order to situate the place of Bunge's system in the general history of contemporary philosophy.

1.3. Bunge and System Building

Rescher's analysis might give us the feeling that systematization is progressing and flourishing in current philosophy as an all too obvious ideal. Unfortunately, constructing comprehensive philosophical systems is not the occupation of current philosophies, particularly after World War II. Prevailing analytic and logical positivist philosophies in English speaking countries took on the task of analyzing and verifying concepts rather than synthesizing them and constructing grand theories about the world. Analytic philosophy believed in the "*end of philosophical theorizing*. Accordingly, no characteristics of a substantive mission remain for philosophy as such."[28] According to analytic philosophers, the task of philosophy is analysis, not synthesis. Even the illuminating and rich heritage of hermeneutics in Continental Europe engages in the process of interpreting and reinterpreting narratives; it does not seem, at least in the writings of Hans-Georg Gadamer and Paul Ricoeur, interested in building a system in the traditional sense.[29] This antagonism to systems might paradoxically be one of the few things that unify current Atlantic and Continental philosophies.

It is in this context of suspicion regarding the validity of systemization that Bunge stands out as a philosopher who seeks to bring contemporary philosophy back to its original task of system building or worldview construction. This context helps to clarify

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[28] N. Rescher, "The Rise and Fall of Analytic Philosophy," in N. Rescher, *Minding Matter and Other Essays in Philosophical Inquiry* (Baltimore, MD: Rowman & Littlefield, 2001), 27.

[29] "Schleiermacher, Droysen, and Dilthey did not manage to develop a unified conception of hermeneutics or publish it in systematic form" (Jean Grondin, *Introduction to Philosophical Hermeneutics*. Trans. Joel Weinsheimer [New Haven, CT: Yale University Press, 1997], 91).

that Bunge, although a proponent of symbolic logic and a prominent defender of science, cannot be classified in the analytic-positivist camp. In his overall systemism, Bunge is closer to the Idealist Lotze and the rationalist Brand Blanchard than he is to his fellow logician, Quine, or fellow philosopher of science, Popper. Bunge believes that "philosophy is spineless without ontology, […] acephalous without epistemology, and deaf without ethics" (MaM xi). An initial overview of Bunge's systematic worldview presented in the next three chapters can be provided as follows (PiC 14-15):

1. *Ontological*: whatever exists is either natural or man-made. Put negatively: there are no supernatural or innately inaccessible phenomena in the real world.

2. *Epistemological*: it is possible and desirable to find out the partial but perfectible truths of the world and ourselves with the sole help of experience and testing, reason and imagination, criticism and creativity. Put negatively: radical skepticism is unproductive and lacks ground while epistemological relativism is false and noxious.

3.1. *Axiological*: although different human groups may care for different values, there are many basic universal values such as wellbeing, honesty, loyalty, solidarity, fairness, security, peace, and knowledge that are worth working or even fighting for. Put negatively: radical axiological relativism and nihilism are false and harmful.

3.2. *Moral*: we should seek salvation in this world through work and thought rather than prayer or war, and we should enjoy living and try to help others live, instead of damning them.

Chapter Two

Ontology: Scientific Metaphysics

According to Rescher, metaphysics is the investigation of world, existence, or being "at the highest level of generality."[30] In the introduction to his metaphysics, published as *Prolegomena* in 1656, (new edition 1968) J. Clauberg (1622-1665) treats metaphysics as a science that deals in – a more general and abstract way – with the intelligible objects proceeding from Aristotle's physical objects.[31] Thus, metaphysics does not exclude physics; rather, it builds upon physics as a second-order reflection. In Aristotelian cosmology, for instance, the relation between observed planetary movements and unobserved first cause is a physics-metaphysics relation.

When Rudolf Hermann Lotze (1817-1881) in his *System of Philosophy* talks about ontology as "a doctrine of the being and relations of all reality,"[32] he uses a term whose first occurrence in German goes back to the Reformed Marburg philosopher Rudolph Goclenius (1547-1628) in his *Lexicon philosophicum* (1613).[33] The term is reiterated in the work of one of Goclenius' disciples, the Reformed theologian Johann Heinrich Altstedt (1588-1638) in his *Encyclopaedia* (1630).[34] The Oxford English Dictionary defines ontology as "The science or study of being" and determines the first occurrence in English of 'ontology' to be 1663, in G. Harvey *Archelogia Philosophica Nova* I. 18: "Metaphysics […] is called also the first Philosophy, from its nearest approximation to Philosophy, its most proper Denomination is Ontology, or a Discourse

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[30] N. Rescher, *Metaphysics: The Key Issues From A Realistic Perspective* (New York: Prometheus Books, 2006), 13.
[31] J. Clausberg, *Opera omnia philosophica I*, 281.
[32] *Lotze's System of Philosophy. Part 2. Metaphysic.* Trans. Bernard Bosanquet (Oxford: Oxford University Press, 1884), 20.
[33] New edition: Hildesheim 1964, article *Abstractio*, 16.
[34] New edition: 1990, article *Ontologia*.

of Being."[35] Ontology underlies both epistemology and ethics, i.e. knowing and acting*;* ontology, epistemology, and ethics are inseparable – so much so that for the German philosopher of culture, Peter Sloterdijk (b. 1947), "There is no ethics possible as long as logic remains ignored and ontology unclear."[36]

If we disregard the context that led to the replacement of the term 'metaphysics' by 'ontology,' we would be justified in equating the usage of the two terms. According to Bunge, the primary questions in both fields are identical, namely, what exists? and what is the nature of its existence? This is a question of fundamental importance, for if we determine what *exists*, we would be in a better position to know it, which has wide and deep implications for the composition of *knowledge* in general. Also, based on the existence or nonexistence of things and our knowledge of them, we would determine how to act upon them, which in turn would help in determining the range between good and bad and right and wrong, i.e., *ethics* and *morality*. Therefore, since inquiry into the nature of *being* helps in determining *knowing* and *acting*, we may say that question regarding what exists and the nature of its existence' is *the* fundamental question. This explains the importance of *ontology* in philosophy, as it underlies both *epistemology* and *ethics*. In other words, the triad of *being, knowing,* and *acting* or the domains of ontology, epistemology and ethics are fundamentally inseparable.

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[35] Entry on ontology at http://www.oed.com/. See also K. Kramer, article "Ontologie", in *Historisches Wörterbuch der Philosophie* (Darmstadt: Wissenschaftliche Buchgesellschaft ,1984), 1189-1198.

[36] Quoted in Maurice Boutin, "The Current State of the Individual: A Meditation on 'The Falling Man,' a Photo Taken by Richard Drew," *Toronto Journal of Theology* 23/2 (2007), 173-182; p. 179. - See P. Sloterdijk, *Nicht gerettet: Versuche nach Heidegger.* Francfurt-Main: Suhrkamp, 2001, 234; see also the conclusion of P. Sloterdijk, *Die Sonne und der Tod: Dialogische Untersuchungen.* Francfurt-Main: Suhrkamp, 2003: "Ce qui manque [aujourd'hui], c'est un art de penser qui serve à nous orienter dans le monde de la complexité. Ce qui manque, c'est une logique qui serait assez puissante et mobile pour prendre à bras le corps la complexité, l'indétermination et l'immersion. Quand on cherche cette logique, il faut changer sa liste de lectures."

The classical debate on ontology may be summarized in the following question: *Is existence a product of mental imagination, bodily senses and/or the real existence of the outside world?* We are told by many authoritative historians of philosophy that Immanuel Kant succeeded in resolving the conflict between the rationalists and empiricists regarding ontology through his critical rationalist synthesis.[37] The gist of the Kantian resolution is that it splits the share between the rationalist and empiricist camps whereby the senses provide *qualia*, i.e., sense input, and reason recognizes it and modifies or moulds it by its three categories of space, time, and causality, which in turn are understood through his twelve categories.[38] Thus, neither the faculty of senses nor that of reason dominates knowledge; both have their mutual restrictions and functions. The problem with this resolution is its inability to respond to the classical question: 'what does exist?' The Kantian response was rather responding to the question: 'how is knowledge formulated?' Kant was aware of the shortcomings of his resolution and declared that we cannot know things in themselves, *noumenan*, but only as they appear to us, *phenomenan*. This is why, as Bunge points out, Kant thought that "The world is the sum of appearances" (ChR 6), and suggested that we have to restrict our inquiry to the first two parts of the tripartite question: 'is existence a product of the *mind*, *senses*, or the *outside world*?' Hence, the third subject, i.e., 'the outside world' or 'things' in themselves, is said to be the inaccessible *noumenan*, or at best left for further

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[37] Frederick Copleston, *A History of Philosophy: Modern Philosophy from the French Enlightenment to Kant* (NY: Image Book, 1993), 428.

[38] These twelve categories are: 1) *Quantity* of Judgment: universal, particular, and singular; 2) *Quality* of Judgment: affirmative, negative, and infinite; 3) *Relation* of Judgment: categorical, hypothetical, and disjunctive; and 4) *Modality* of Judgment: problematic, assertoric, and apodeictic. These categories are Kant's modification of the standard Aristotelian ones, which are: 1) Categories of *Quantity*: unity, plurality, and totality; 2) Categories of *Quality*: reality, negation, and limitation; 3) Categories of *Relation*: substance and accident, cause and effect, and reciprocity between agent and patient; and 4) Categories of *Modality*: possibility—impossibility, existence—nonexistence, and necessity—contingency. Immanuel Kant, *Critique of Pure Reason*. Trans. J. M. D. Meiklejohn (London: Henry G. Bohn, 1855), 58.

investigations. Bunge considers this resolution of the rationalist and empiricist debate barren as it separated the inseparable triad, *being, knowing,* and *acting*, by dropping *being* out of the triad.

Bunge's contribution to ontology is found in his works *The Furniture of the World* (1977) and *A World of Systems* (1979), the third and fourth volumes of his *Treatise on Basic Philosophy*. This is why the title of the two joint volumes is *Structure of Reality*. After these years, Bunge sharpened his thoughts in *Chasing Reality: Strife over Realism* (2006). The goal of this chapter is to understand Bunge's recent contribution to ontology, which is enriched by the most recent discoveries in natural science and technology. This investigation has direct implications for the religious worldview and its ontology.

2.1 Rethinking Current Ontological Assumptions

In order to approach the threefold question — *is existence a product of mental imagination, bodily senses, or the outside world?* — Bunge directs each part of the question to its relevant domain. Therefore, mental imagination is about *fiction*, bodily senses are about *appearances*, and existence is the domain of *facts*. In this case, ontology investigates the interaction between the triad of *facts*, *appearances*, and *fictions* (ChR xxi). Facts are things in themselves or *reality*, appearances are based on senses, *qualia*, or *phenomena*, and fiction, when organized and disciplined, is the activity of the mind known as *theory*. Ontology then attempts through *appearances* and *fictions* to reach *facts*; that is, ontology understands *reality* through *phenomena* and *theory*.

Let us start with appearances. In the contemporary context, with its abundance of televisions and computers, an increasing number of people are dependent on screens (ChR xi). The tacit principle commonly shared by all screen-dependent viewers is that

there is something factual behind the images projected on screens. For example, people watching military bombardments on televised news would support or condemn them because they are certain that these bombardments are taking place and killing some militants or innocent individuals (unless the images have been doctored). In addition, students, who search library catalogues online from their homes, are certain that when they go to the library their search will guide them to the actual books on the shelves, unless there is some cataloguing or shelving mistake. Only those who watch fictitious news bulletins or fictitious drama are sure of the nonexistence of these events behind the screens they watch. A significant number of philosophers suggest that existence is perceived through senses or language in a way that is analogous to the manner in which the external world is viewed through television screens. However, others do not subscribe to this point of view. Screens, to some, are no more elusive than sensation. If senses do not access the *noumenon*, then screens also would not. The highly revered British literary critic Christopher Norris gives us a shocking example: on the 29th of March 1991, shortly after the cessation of hostilities in the Gulf War, French philosopher Jean Baudrillard published a work entitled "The Gulf War Has Not Taken Place," in which Baudrillard argued that "the true belligerents are those who thrive on the ideology of the truth of this war." Christopher Norris wrote an entire book refuting Baudrillard's allegation of the nonexistence of the Gulf War and its philosophical presumption that television screens have no external referents.[39]

A great number of philosophers object to relying on senses as a means of access to things in themselves. Various examples include "that observation is unnecessary

[39] Christopher Norris, *Uncritical Theory: Postmodernism, Intellectuals and the Gulf War* (Amherst, MA: University of Massachusetts Press, 1992), 192, referring to (Jean Baudrillard, *La guerre du Golfe n'a pas eu lieu* [Paros: Galilee, 1991]).

(Plato, Leibniz, Hegel); that there is nothing behind phenomena (Berkeley, Hume, Kant, Renouvier); that no hypothesis should ever be formed (Bacon, Comte, Mach); that guesses need not be checked (Bergson, Husserl, Goodman)" (ChR 4). All of these philosophers, Bunge says, could be called *phenomenalists* (ChR 38) as they rely exclusively on the *phenomenal* side of the Kantian ontological distinction between *phenomenon* and *noumenon*. Phenomenon refers to how things *appear* to the human mind, while *noumenon* refers to how things *are* in themselves regardless of the manner of their appearance to human sensation or cognition. For Bunge, the original intuition of this phenomenal-noumenal distinction is not originally Kantian, but can in fact be credited to Berkeley (1685 – 1753) (ChR 43). In the footsteps of Plato, Bunge's critique of the phenomenal-noumenal distinction appears in the following examples.

The phenomenalist philosopher, like the second-hand car dealer, assures us that what we *get* is what we *see* (ChR 85). This is why the second-hand car dealer insists that the interior quality of the car is measured by its glistening exterior. Similarly, according to the phenomenalist philosopher, the access to *being* is nothing but access to *phenomena* and appearances, just like watching a cosmological TV screen emitting appearances, where the actors behind the screen are *noumenally* inaccessible. Therefore, a consequence of the phenomenal stance is that what someone sees as a rabbit could be seen as a duck by someone else (ChR 53). The inaccessibility of *noumenon* is not restricted to values or cultural differences, for instance the beauty or ugliness, the goodness or evilness of the rabbit, which is the case of cultural or value relevance. Rather, the inaccessibility of the *noumenon* might be the very 'rabbitness' of the rabbit that could be 'duckness.' This ambiguity cannot be resolved, according to

phenomenalists, because nature *noumenally* contains neither animal: both are only *phenomena* or appearances in the cosmological TV screen of the mind (ChR 53). Consequently, once upon a time in the African wilderness, Bunge tells us, the phenomenalist arguments convinced a young gazelle to adhere to phenomenalism and refuse to acknowledge the external existence of lions in the African savanna (ChR 34) simply because lions *noumenally* do not exist. Of course, none of the herd adopted the phenomenalist stance of the gazelle, and sadly thereafter, the gazelle was first among the gazelles to cease to exist, while the lions continued to thrive. However, the lion that devoured the gazelle had another view: before eating the gazelle, the lion argued that actors behind the cosmological TV screen of their sensation are *noumenally* accessible through grounded imagination and verification. A lion can imagine the *existence* of gazelles if it sees a faraway movement behind the bushes or smells a gazelle's traces in the darkness of the night. The lion, through the long evolutionary journey of its species, connects these indirect senses, i.e., bush-movement or smells, with the possible existence of gazelles. Hence, the lion adopts a different stance ontologically. *Phenomenon*, 'lionly' speaking, is part of the *noumenon*, which means that "appearances are real, but skin deep" (ChR 81).

The philosophical tales proposed by Bunge present a new stance in contemporary ontology. *Phenomenon*, in opposition to the rationalist stance, is not invented by the mind, but also, unlike the empirical view of *noumenon,* is not equated with immediate and accurate sensation. *Phenomena* do exist and have their function, but only as a part of the *noumena*, i.e., of the human nervous system evident in sight, hearing, taste, smell, and touch. "The world is free of qualia, i.e., colorless, soundless, insipid, and inodorous"

(ChR xi). Qualia are just our tools to access the world, but the world is not qualia. Although qualia are the very fabric of human perception and can be mentally constructed, as in dreams and hallucinations, they still have relevance in the outside world. However ostensibly wild and unreal, the components of dreams and hallucinations could be relevant to some real events that occurred in the past. Therefore, if I was the first ever to dream of a unicorn, it is because I already conceived of a horse on the one hand and of a bull or deer with a horn on the other. Thus, my imagination or dreams engaged in mixing the already preconceived entities. By studying this relation between qualia and the outside source of sensation, we may determine what is partially made by our subjective inside and what is partially made by the objective outside. This is not naive realism that equates immediate senses or observable phenomena with reality; on the contrary, although we are immersed in reality, our knowledge of it is neither immediate nor observable (ChR xiii). This new stance is called by Bunge 'hylorealism,' which is neither naive realism nor unfounded phenomenalism. The following section presents the arguments for hylorealism.

2.2 Bunge's Four Proofs

Following Bunge's advice, "Do not talk about philosophy, do philosophy instead,"[40] let us tackle the essence of ontology. Plato's allegory of the cave might help situate Bunge's 'hylorealism'. As humans, we live in the cave of our mind or consciousness. Within this cave, there exist very small and opaque holes emitting various glimpses of light with different durations, strengths, and qualities, which cause many reflections on the inner walls of the cave. Although these reflections hint at images and colors of the outside, the outside is never perceived immediately, completely, accurately,

[40] M. Bunge, *The Furniture of the World*, 1977, xiii.

or transparently. The only things that enter the cave are the shadows of the outside, reflected through these holes over the internal walls of the cave. The task is to figure out what is out there with the help of these little holes.

In this allegory, the cave is the skull containing the brain, the holes are the senses, and the imagination is the ability to use fiction to interpret and complete the obscure reports furnished by the senses. We may access parts of reality, but we may know it neither directly nor completely. Consequently, on one occasion we may see 'four legs' out of these holes and then strive to figure out whether this thing is an elephant or a horse, or just four creatures with one leg each, or something else. This revised allegory of the cave reveals the quandary of ontology between the inside and the outside, between what truly exists and what is only imaginatively constructed.

Although taken for granted by common sense, the external existence of the world is not easy to prove. Berkeley and many idealists think that it is impossible to provide such a proof. This is why René Descartes finds it more reasonable to prove the existence of the conscious self in order to prove the existence of the world as seen in his *Cogito*: "I think therefore I am." This is why many find it impossible to escape the dilemma posed by a Chinese sage: "I do not know whether it was Chou dreaming that he was a butterfly or the butterfly dreaming it was Chou."[41] We may reformulate this dilemma as follows: I thought I was immersed in reality with the capability of imagining unreality; what if I am immersed in unreality at the very moment where I imagine this alleged reality?

This expanded version of the dilemma is an ontological challenge: there is a total absence of a criterion for judging whether reality creates imagination or imagination creates reality. This expanded version seems to be an ultimate argument for

[41] John M. Koller, *Oriental Philosophies* (New York: Scribner, 1985), 296.

phenomenalism. But in fact, phenomenalism does not hold; rather, the *phenomenon* is part of the *noumenon* and thus "appearances are real, but skin deep" (ChR 81). According to Bunge, the evidence for existence of the external world solves Chou's paradox in the expanded phenomenalist version and is found in the occurrence of four things, namely, error, prediction, control, and discovery.[42]

2.2.1 Error

Error is the most important proof of the evidence of external reality against the claim of the absolute imaginary power of the mind. Error reveals that the infinite imagination of the external world by conjecture, hypothesis, or theorizing can be sharply demarcated by what a particular setting of reality does not allow. This very existence of error is a reality-check mechanism, since it provides a criterion by which imagination can be falsified when it adopts an inapplicable fiction. This leads us to the difference between two possibilities: rational and actual. The imagination of actual possibilities is not limitless. True, rational possibility, which is under the imaginative power of the mind, can construct the world in every possible way, provided there are no logical contradictions; but actual possibility cannot. It is imaginatively, i.e., rationally, possible for me to carry the sun; but it is actually impossible to do such a thing. Actual possibility is limited by error. Based on the occurrence of error, Karl R. Popper developed his philosophy of science on the primacy of 'falsification,' which is derived from the existence of error.

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[42] An earlier and highly interesting account of the evidence for reality is found in Bunge's response to Berkeley's *Dialogues Between Hylas and Philonous* in his "New Dialogues Between Hylas and Philonous" (*Philosophy and Phenomenological Research* 15/2 [Dec. 1954], 192-199); reprinted in M. Bunge, *Scientific Materialism* (Dordrecht: Reidel, 1981), 99. The older version is available online at: http://www.jstor.org/stable/pdfplus/2103573.pdf

Although we live in the cave of our imagination that is dependent on the small and obscure holes of our sensation, this does not reduce the external world to inaccessible shadows. On the contrary, the world can be accessed. Also in the allegory of the cave, external reality has a certain nature and behavior, and imagination is not omnipotent. Otherwise, the gazelle in Bunge's tale would have defeated the lions by imagining them as maggots that could be eaten, or Chou's paradox would hold: I thought I was Chou who had a dream of being a butterfly. But in fact, I am a butterfly landing on Chou's nose at this very moment. We might invert Descartes' statement and say: I err, therefore I detect existence. As Bunge suggests, Augustine, twelve centuries before Descartes' Cogito, proposed this proof of error when he wrote: "If I err, I am. For he that has no being cannot err, and *therefore my error proves my being*. Which being so, how can I err in believing in my being?" (UtW 121)

2.2.2 Prediction

Error is negative evidence, but external reality has also positive or affirmative evidence. Figuring out the causes and mechanisms that produce various phenomena in a consistent and repeatable manner enables *prediction* of these phenomena. For example, knowing the pattern of the human genome, we would expect that every pregnant woman would deliver within a range of actual possibilities between healthy or unhealthy human beings, and not that she would give birth to an octopus or a blue whale. The reason for this actual impossibility is that the human genome pattern assures us of a particular sequence of protein formation and cell division that would grow to be a particular biological being. In the case of humans, this would range between healthy and unhealthy, complete and malformed humans, and the genome code for making a blue whale is not

there even by taking into account the possibilities of mutation. The delivery of a foreign species is out of the question, and imagination cannot change what is predictable according to the law of nature.

Chou, al-Ghazali, and Hume oppose the power of causal prediction because they see causality as a habit of the mind. They may give the example that the mind is accustomed to perceive that the sun revolves around the earth, but then Copernicus got into the other habit of perceiving that the earth revolves around the sun. Both cases are plausible in their view of habitual causality, and they may add that prediction, just like causality, is no more than a habit of the mind. However, the mind may come to a rational conclusion, and still be subject to error. An inaccurate prediction can lead to bad consequences. For example, ancient people conducted human sacrifice in hopes of bringing rain, without considering the many instances when human sacrifice did not bring about rain. Thus, human sacrifice as a way to cause rain is a case where inaccurate prediction, even when habitual, cannot change reality. Al-Ghazali's and Hume's rejection of scientific causality is flawed; this is why they would not dare jump from a high mountain, even if they imaginatively challenged the habitual convention that human mass obeys gravity. They know that such a jump would cause their death. The moral: do not listen to what phenomenalist philosophers *say*, but look at what they *do*.

2.2.3 Control

What holds for error and prediction holds also for control. Control entails also the capability of altering external reality based on its own laws (ChR xii, 135). Consequently, exploring what is there behind the shadows of phenomena, we may not only predict how a thing will behave but also control it by changing its very nature. Thus, by studying the

genome of grapes, we may detect the genes responsible for producing seeds and, by controlling them, grow seedless grapes. Here, the study of reality can enable humans to alter the nature of external reality in a way that is unpredictable and in such a way that could not be achieved by imagination.

2.2.4 Discovery

Discovery is the last factor for evidence of the external world, according to Bunge (ChR 45). For millennia, the total planets were six, without counting the earth. Was the discovery of other parts of the solar system due to someone's imagination, or to the 'episteme' of the era, as Michel Foucault might suggest? [43] How do we know that these planets existed prior to being perceived by a human mind?

If there is a particular nature of the external world that confronts some imaginative possibility with error (# 2.3.1), then we would say that the nature of a planet's formation does not allow its sudden existence. Disapproving this would lead to ridiculous conclusions, for instance, with regard to the existence of foreign cultures and civilizations. Did the indigenous people in the Americas exist only when a Spaniard discovered them? The evolution of cultures and empires, like that of the Inca in South America, requires a particular pattern for them to evolve, starting from a hunter-gatherer life style. Indigenous people in the Americas existed long before Spaniards discovered them: archeologists now talk about three waves of migration from Asia some 30000 to 130000 years ago.[44] This also applies to planets that existed millions of years prior to their discovery. One might say that these are inferential evidences. This is true, but surface samples from the moon or from Mars, for example, confirm the premise that

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[43] M. Foucault, *The Order of Things: An Archaeology of the Human Sciences* (NY: Vintage, 1994), 60 and 83.
[44] Pamela Kyle Crossley, *What is Global History?* (Malden, MA: Polity, 2008), 77.

planetary formation requires an astronomical number of years. New planets in the solar system did not exist because we discovered them; rather, discovery helps to correct and widen imagination.

These four evidences for the existence of external reality are significant for ontology. Error refers to correct or normal behavior of nature, prediction signifies the lawfulness of nature in the future, control suggests the possibility of not only understanding nature theoretically but also of changing it, and finally discovery confirms that our knowledge of the external world is always incomplete and demanding further struggle to explore more of the external world. Thus, error, prediction, control, and discovery add up to provide evidence for the existence of the external world and the possibility of learning, discovering, and changing it. The external world is not comprised of inaccessible shadows of sensation, provided we manage to imagine, properly hypothesize, and test the nature of the thing at hand and demarcate our proposals with reference to error, prediction, control, and discovery. These four evidences demonstrate the ability to know *noumenon*, which Kant denies. *Noumena* have predictable behavior in time once we figure them out, alterable nature once we have the means to change it, and pre-existing reality once we have the means to discover it.

2.3 Bunge's Systemization of the World I: The Micro Structure of Reality

Ontology attempts, through the interaction between *appearances* and *fictions,* to reach *facts*; or, put differently, ontology understands *reality* through the interaction between *phenomena* and *theory* (# 2.1). Phenomena are parts of *noumenan*, "appearances are real, but skin deep" (ChR 81). Phenomenon, sensation, or *qualia* are not things in themselves but part of a relationship between sense perception and external reality – in

particular, in the nervous system. Although fiction is not fact, paradoxically, we need fiction, particularly mathematical ideas and highly idealized models, to describe, explain, and predict facts (ChR 8). Fiction formed by theoretical power is also part of what is performed by the brain and based on its laws. The central nervous system reacts to external material stimuli because it is also material (EtW 34). Ideas do not proliferate by themselves; they need brains that gather information, critique, reflect, and invent them. How are we to analyze all this?

Ludwig Wittgenstein states in his *Tractatus Logico-Philosophicus*: "The world is the totality of *facts*, not of things" (TLP 5). He later defines facts as "a combination of objects (entities, *things*)" (TLP 2.1) and adds: "It is essential to a *thing* that it can be a constituent part of an atomic *fact*" (TLP 2.11). Bunge notes possible circularity here: "So, a fact is a combination of things, but in turn a thing is a part of fact" (ChR, 20). Contrary to Wittgenstein's assertion, the world for Bunge is not "the totality of facts" (TLP 5), but *the totality of things and their relations* (ChR 20). This, of course, refers to a task that might never be completed; and yet, determining the components of such totality is the starting step. If the world is the totality of things and their relations, what is a thing and how can we distinguish it from a fact or from an idea?

For Bunge, ancient Greek and Indian atomists, medieval nominalists and the enlightenment materialists held that "the world is constituted by things" (ChR 9). According to this line of thinking, being, existence, or reality is the totality of all things, including our ideas about these things. However, "no word is vaguer than thing" (ChR 10), as it is used equivocally in various ways. In order to characterize the 'thing,' Bunge starts with the notion of an object, which for him is the broadest term synonymous with

thing. An object can be concrete and material, for instance a car or a human population, or immaterial and abstract, such as a concept, a mental image, or a theory. The properties that characterize a material object are *substantive*, and those that characterize the immaterial are *formal* (ChR 10). Still, the substantive/formal dichotomy does not suffice to accurately define a thing. This dichotomy is the classical view proposed by Descartes in order to distinguish between things and ideas: the expression *res extensa* (extension) and its opposite *res cogitans* (thought). Yet, Cartesian *res extensa* applies only to one case of matter, i.e. solid bodies, not to electrons, electromagnetic fields, corporations, or bio-populations. None of these has a precise shape, position, or volume, and yet they are still material (ChR 10). This is why solidity is, despite what common sense may tell us, an exception in the universe rather than the norm. Thus, according to Bunge, Descartes' *res extensa* is not a universally extensive ontological characterization. Bunge finds a better alternative – partially based on Platonism – to the Cartesian substantive/formal dichotomy in order to characterize the thingness of the thing.

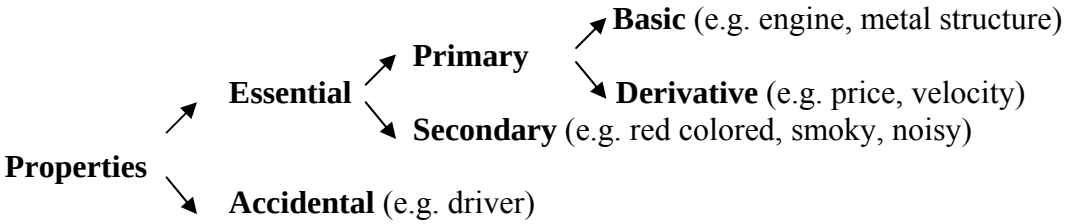
For Plato, whereas ideas are immutable (unchangeable) when considered in themselves, material objects are corruptible (changeable) (ChR 10). Bunge's agreement with Plato stops here, where evidence shows that the immutability of ideas is rather a derivative property of that particular matter called human brain. For example, there is no motion in itself, but rather a moving object. As Aristotle argues, "there are no properties without substrata. Every property is a feature, trait, or aspect of some object" (ChR 14). So, if someone holds an immutable idea of motion, it is due to its being a fixed image, abstraction, or memory of some moving objects. By applying this distinction so as to see the exceptional nature of idea in some material brain, we are allowed to observe that

Plato's view of the changeable/unchangeable dichotomy has been inverted: *material change* is universal, *immaterial immutability* (unchangeability) is exceptional. Physically speaking, changeability is the universal property *par excellence* shared by all things, whether physical or chemical, biological or social, natural or artificial, since all of them involve energy. Here, Bunge defines energy in terms of the capacity for change. Energy, thus, is a universally extensive and continuous cause of change. On the other hand, the immutability of concepts or theories is ephemeral and imagined. To be sure, an ancient Greek lay person was capable of understanding the abstraction of the political mechanism called democracy. Yet, the later Greek lay persons who did not practice or study democracy centuries after the failure of Greek democratic regimes were not capable of understanding its reference and imagining its abstraction. Thus, the idea of democracy ceased to exist according to these people, and is not immutable. 'Democracy' remained codified in Plato's *Republic* and other books; when these books were rediscovered in the Renaissance, they needed not just translation and deciphering, but also interpretive reconstruction (IFF 397). Scholars of Greek classics are still struggling to understand many Greek concepts of the past; this proves that the ideas conveyed by them did not live across time as self-existing uncorrupted ideas. Ideas are rather processes in a changing material brain that emerge as a reflection on the senses, memory, or some communication medium such as scrolls and books. A person's ideas are brain processes carried by particular neural assemblies performing a formal function among others. Thus, Bunge argues, Plato's claim for the autonomous or external existence of ideas outside brains is false (ChR 198). Ideas do not exist by themselves. The disappearance of Pharaonic Egyptians made us incapable of learning about their exact ideas or the way they

constructed them, and archeologists are still not certain about the meaning of the Incas' knotted calendar (IFF 452). Ideas are constructs; immutable for the brains that imagine them to be so, they cease to be when these brains die, although even after the death or state of sleep of brains that constructed them they may be transmitted by means of either audio, visual, or written communication. However, even this is on the condition that they be received by a brain that can understand them. An example would be the mathematical discovery of π, which is a universally fixed relation between any circle's circumference and its diameter: whenever a given circle's circumference is divided by its diameter the ratio always equals the same 'irrational number' whose value is close to 22/7. The *actual* π relation still holds after the death of the mathematician who discovered it, because it is actually a formal property of the ideal circle itself. Yet, the π idea needs a brain to comprehend such a formal property. If there is a layman who cannot comprehend the π idea while contemplating a circle, the π will cease to exist for him as an idea, although the objective formal relation may be rediscovered by a more observant mind. This analysis concerning the false immutability of ideas tells us that change is rather the universal quality. If so, then how can we characterize a particular thing?

The best model Bunge finds is the Aristotelian thing-property model. "The usual way of characterizing a particular thing is to list its salient properties" (ChR 15). Thus, a thing characterized by energy may essentially be large or small in relation to *size*, living or inanimate in relation to *biology*, complex or simple in relation to its *constituent* parts. We can continue indefinitely to count the properties of a thing based on the qualities/quantities we need to measure, but properties are not all on a par. They may be essential or accidental, basic or derivative, primary or secondary (ChR 12). Let us take a

car as an example of this thing-property model. A car's rigid structure is *essential*, but its driver is *accidental*. So, the driver may sell the car to another driver but cannot replace the metal structure. If he does, the car will not be the same. Also, the machinery of the car is *basic*, but its speed is *derivative*. Accordingly, the car's engine and gearbox are fixed in nature, but their performance while in operation varies based on the driver, the road conditions, and the weather. Finally, the metal structure is *primary*, but the car's smell, color, and sound are *secondary*. Bunge's dichotomy of properties is shown in the following diagram while taking the car as an example.



These *qualia*, evident in smell, color, and sound, exist only in our sensation as we process the chemical molecules of its smoke, its light waves' reflections, and sound waves' vibrations. Our sense organs are not powerful enough to capture these aspects as accurately and objectively as they are generated from their source; we merely perceive what our nose, ears, and eyes allow in a particular state of consciousness and attention. The importance of recognizing secondary properties is that it allows us to understand that there is more to perception than our senses allow.

In the context of Bunge's ontological realism, the relevance of the primary-secondary dichotomy of properties is significant since it demarcates *phenomenon* and *noumenon*. Not surprisingly, "Galileo and Descartes, two of the founders of modern science and philosophy, emphasized the difference between primary and secondary

properties, and proposed that science should focus on the former" (ChR 6), since only secondary properties are subject-dependent (ChR 13). This is unlike derivative properties, which are objective relations relative to the reference-frame, not to the observer. Relativity does not involve subjectivity (EGR 13); a relative aspect remains objective. Relativism and subjectivism should not be confused, since the relativist property is still an objective one. This is misunderstood within some contemporary trends that equate Einstein's theory of relativity with absolute subjectivity, i.e., the loss of objectivity. In fact, the theory of special relativity is just the opposite: it is an objective stance, but in a complex form, rather than a singly-determined objectivity. Hence, a property is relative to its reference frame, which does not mean that it is imprecise or observer-dependent. As a result, "my walking around the block is a single fact with as many projections as reference frames – by analogy with the [sic] shadows projected by a body on different surfaces by different light beams" (ChR 13).

This primary/secondary dichotomy of properties leads us to the nature of properties as a cluster, for every "property conjoins with some other properties" (ChR 12). For example, democracy works best with liberty, not at all with tyranny. The bottom line is that the only property that exits in every single thing is energy; it "is the universal property" *par excellence* (ChR 12); it "is as sufficient as 'being,' 'existence' and 'thing'" (ChR 12). This process of determining the nature of a thing by its properties reveals a great part of the task of experiencing the external world by exploration and testing. By studying properties, laws emerge, since "laws of nature […] are invariant relations among properties and their changes" (ChR 14). This means that invariant relations among properties are constant in time as long as those things do not undergo some qualitative

change. Primary properties, here, are independent of any particular human subjectivity. For instance, it is a property of water that its boiling point at standard atmospheric pressure is 100 °C. This instance is a complex property, conjoining the nature of the water molecule, atmospheric pressure, and a particular temperature.

The above two distinctions between the thing and its properties and between primary and secondary properties are for Bunge keys to overcoming the ontological chasm of *phenomenon* and *noumenon*. These distinctions allow speaking of things in themselves, *noumena*, or facts. Hence, a "fact is anything involving a thing" (ChR 9). More precisely: a fact is a thing in a certain state, or a change in such a state (ChR 17). Therefore, if we succeed in capturing a piece of information about energy change in a thing, and compare it with a subsequent change, we would be able to speak of *events*. This demarcation is very helpful in capturing causation, probability, or a mixture of both. Here, we can speculate about whether an increase in breastfeeding would increase a baby's weight or whether artificial baby milk is more effective.

Focusing on the changes in a state of a thing was of great interest to Descartes at the dawn of the scientific revolution, as he was the first to devise an important cognitive tool, namely the Cartesian coordinate system. This approach evolved into the *state-space* model devised to represent a thing with at least one of its properties. This allows us to capture states of things and changes that occur in them, i.e. events. A thing is represented by P1 axis and its properties are attributed or predicated in the P2 axis. This model facilitates the quantification of the qualities of a thing and its resulting patterns. This state-space model with only two axes is not restricted to capturing only one property per thing, or one relation between a property and another; it can also be used to devise any

number of relations regarding the same thing and it can be tailored to capture as many properties and relations as needed.

The above ontological distinctions of *thing-properties* and *state-changes* facilitate another chain of factual analysis, namely, *process-restrictions*. Here, multiple changes in a state of a thing, i.e., events, over a certain period of time constitute a *process* which is a trajectory of events in lawful state-space. The focus on the succession of events as continuous process constitutes an attempt to collect a sequence of states, which might appear as a clear pattern in the Cartesian diagram. Looking at processes in light of the state-space model helps us recognize the patterns that these processes are following and thus see the possibilities these processes are not allowing. This negative implication pertains to the notion of restriction. A sharp restriction in state-space composes a law. Good examples are the Newtonian laws of motion, which create a sharp restriction regarding what the earth's speed cannot be due to the relation between its mass, the sun's mass, and the gravitation of the surrounding moon and planets. A summary of the ontological distinctions might be negatively stated as follows:

- If there were no *restriction* in state-space, there would be no *laws.* Put differently, if there were no *trajectory* in a state-space model, there would be no *patterns*.
- If there were no *change* in a process, there would be no *events*.
- If there were no *events*, there would be no *changes*, and thus no *properties* to detect.
- If there were no *properties*, there would be no *things.*
- If there were *nothing*, there would be no *facts.*

- If there were no *facts*, there would be no *ideas*, because we cannot create brain reflection out of a void and because the first part of the Cartesian "I think, therefore I am," would not exist, since the act of thinking in the brain would not occur in the first place.
- If there were no *fact-idea* distinction, we would not distinguish *noumenon* from *phenomenon*.

Yet, contrary to the above chain of negative reasoning, there are things in certain states (*facts*), engaging in change (*events*), formulating trajectories in lawful state-space (*processes*), and demonstrating various levels of restrictions (*laws*). Thus, by exploring and theorizing properties we can access *noumenon* and distinguish it from our senses, *qualia* or *phenomenon*.

This materially complex approach to ontology has further consequences. The pairs -- thing/properties, change/processes, and state-space/restricting laws – neither demonstrate themselves as isolated facts nor as total randomness; rather they build up a system. Properties cluster to establish relations amongst themselves, constituting a structure. A human population, for example, is composed of individuals within the structures of families, professions, classes, racial groups, linguistic groups, and nationalities. In addition, these humans and their structures experience changes that activate a process within a particular environment known as a mechanism, i.e. a process characteristic of a system in which the components and the environment are involved interactively. In the case of a human population, various human groups are influenced by their different *environments*: 1) the *physical*, such as geology, amount of rain fall, and weather pattern; 2) *chemical*, for instance the quality of the air they breathe; and 3)

biological, such as the plants that grow around them or the animals and parasites that live in their domains. These individuals within their binding structures and various environments activate several mechanisms: 1) *economic*, for instance exploitation of natural resources, production of artifacts, exchange of goods and services; 2) *political*, for instance competition and cooperation over power and economics; 3) *cultural*, for instance education of the youth, communication of public information and marketing, consumption of arts and entertainment, and manufacturing of popular consent or dissent. Bunge's CESM model (SSuD 105-106), which analyzes reality in terms of *composition*, *environment, structure*, and *mechanism*, is a complex identification of how things interact with each other and build up a system.

Let us restate Bunge's preceding key ontological findings for further reflections, while italicising their key words. While providing an overview of Bunge's ontological project, they also present new ideas that introduce the next section:

1- A *thing* is composed of matter that is measured by energy or change.
2- Some of the *properties* of the world are *basic* (inherent in a thing), others are relational as in the case of *emergent* properties (they originate along with the system and disappear if and when it breaks down).
3- A *fact* is a thing in a certain state or an event.
4- An *event* is a change in the state of a thing, which in turn is the domain of *causation, probability,* or *a combination of the two*.
5- *Everything* is either a *system* or a component of *a system*; *this is why there is no independent thing* and no existence *outside the system*.
6- A *system* is a complex thing whose parts or components are held together by bonds, i.e., a structure, of some kind.
7- The proposed representation of a thing (including its properties, states, and changes) is the *state-space* model. This model facilitates the rigorous understanding and quantification of the qualities of a thing and its resulting *patterns*.
8- Multiple changes in a state of a thing, i.e., events, in a certain period of time constitute a *process,* which is the trajectory of events in lawful state-space.
9- A restriction in the pattern of the state-space is a *law*.
10- *Composition* of any system and the relations among its constituent parts constitute the *structure* of the system, which holds them together. The components within

the structure run a certain *mechanism* within a particular external *environment* that affects the system. The quadruple of composition, environment, structure, and mechanism is Bunge's *CESM model*.

11- A *mechanism* is a process characteristic of any system where the components and environment are involved interactively having particular relations, i.e., a structure.

12- Things-in-their-systems result in a particular hexagonal qualitative novelty of the world, i.e., physical, chemical, biological, social, cognitive, and technical.

13- *Reality* is the system of all systems, i.e., the collection of all things and their relations.

2.4 Bunge's Systemization of the World II: The Macro Structure of Reality

Bunge's scientific ontology spells out the micro nature of reality in terms of 1) things, their properties, and the emergence of systems; 2) states, their changes, and the emergence of mechanisms; and 3) trajectories, their restriction, and the emergence of laws. The above ontological terminology lists thirteen key abstract components of anything or event that exists in the world. The aggregation of these things and events results in the actual formation of the things of the world. This point is explained in terms of the macro structure of reality.

As noted above (# 2.3), unlike Wittgenstein who thinks that "The world is the totality of *facts*" (TLP 5), Bunge holds that the world is rather the *totality of things and their relations* (ChR 20). For him, the world is synonymous with reality and reality is synonymous with *matter*, since even ideas are maintained in existence by (material) neurological brain processes and initiated, stimulated, and fed by (material) sensation. Therefore, there is nothing immaterial in the world, and there is no means whatsoever to scrutinize the immaterial. That which is absolutely immaterial is inaccessible because it lacks any testable and measurable properties; hence, it is nonexistent. We may say that the immaterial is a nickname for nothing. All that we have are material media to access any existing thing, including our ideas. This ontological materialism has direct

implications concerning deities, angels, and unseen worlds in the religious worldview. These entities are declared immaterial and therefore not testable, indeed inscrutable. Evidence for the existence of the deity, for example, has been supported by massive theological literature summarized in the following five arguments: psychological, ontological, cosmological, teleological, and ethical.[45]

2.4.1 The Psychological Argument

Common amongst Muslim mystics, this argument takes one's cognizance of a Supreme Being and the inner speech instigated by that being as sufficient grounds to prove God. The problem with this attitude is that this inner speech is more present in human weakness and less evident in cases of strength; thus, it is rather circumstantial. A stronger point against this argument is that such a psychological attitude is culturally based: polytheistic, pagan, or atheistic societies are not conscious of that Supreme Being, they never hear that being in their inner speech even in a state of weakness, and they rather sense other beings and exhibit other emotional reactions. The claims of the psychological argument are insufficiently universal to lead convincingly to the affirmation of a universal and immaterial God.

2.4.2 The Ontological Argument

This argument takes another route, where we are asked to imagine a "being than which no greater can be conceived" (Anselm's formula). This is indeed possible; yet, all of these possible results are derived from the very definition of a postulated axiom, and the question is why such a postulation should be made in the first place. If there is no compelling reason, we could imagine for instance a 'being than which a greater can always be conceived,' i.e., infinity. Naturalism abides by logic and the power of its

[45] Mel Thompson, *Understand the Philosophy of Religion* (Blacklick, OH: McGraw-Hill, 2010), 88.

postulates; however, it seeks actual reasons to accept this or that from amongst the infinity of postulates. The ontological argument is imaginatively correct, and so are other forms of postulates; but it does not go beyond this.[46]

2.4.3 The Cosmological Argument

Unlike the psychological and the ontological arguments, the cosmological argument might garner a wider acceptance among philosophers. Starting from the overall importance of causality, it attempts to explain the emergence of the contingent cosmos by a necessary first cause called God. The problem with this argument is that there is no need to imagine any beginning for the world if we are not sure of it from an experimental point of view. Having a beginning or lacking it could be equally acceptable from a logical point of view where empirical evidence is missing. So logic does not help the cosmological argument as long as its proponents lack empirical evidence. Naturalism holds that an infinite first cause is a much safer claim.

2.4.4 The Teleological Argument

Unlike the cosmological argument, the teleological one does not start from a first cause, but rather the other way around, since the complexity and purposefulness of many phenomena make one think of these phenomena as a result of a wise and intelligent designer. Modern creationists, for instance, take the particular configuration of the earth conditions as purposefully made by God to make the evolution of human being possible. This is a stronger argument compared to the others, but it overlooks the absurdity, lack of design, and meaninglessness of many phenomena in the world. Absurdity and meaninglessness, such as the mass extinction of many species, do not lead to a wise

[46] Among the many publications on this topic, see for instance Marco M. Olivetti, ed. *L'argomento ontologico*. Padua (Italy): CEDAM Publ., 1990, 762 p.

designer. In addition, self-regulation of many bio-molecular cases and biological evolution provide strong enough reasons to think of the emergence of life and human consciousness with reference to natural causes with no designer. What purpose is there for disability, hunger, and misery? Evil is antithetical to wise purposefulness.[47]

2.4.5 The Ethical Argument

For the theistic religious worldview, the psychological, ontological, cosmological, and teleological arguments altogether do provide a strong case for the existence of the divine. However, baseless arguments do not add up in order to make a sound one. This is why one may think that the best of all arguments is rather the ethical one. If there were no God who provides punishment and reward in the world and the afterworld and who brings about social consensus through scriptures, then the whole society will fall into immorality. Why carry the burden of doing good if there is no afterworld reward? Why abstain from doing evil, if there is no punishment? As such, the ethical argument does lead to the existence of God. However, people can still do good without belief in God and God's scripture, reward, and punishment. This fact is unmistakable in the case of good deeds performed in atheistic, polytheistic, non-theistic, or pagan societies. Moreover, belief in God is not a guarantee for doing good, since many unethical acts are committed in the name of God. Thus, the ethical argument is not a compelling one.

The thinking that produced the five arguments for God's existence is

[47] The "Anthropic Cosmological Principle" argues that observations of the physical Universe must be compatible with the conscious life that observes it. See for instance, John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle* (NY: Oxford University Press, 1988).

subjective, idealistic, unempirical, and highly contested, and ontological materialism has a valid case against the claims of the immaterial entities postulated by the religious outlook. Yet, there is another way to discuss the existence of deity: if the existence of the laws of nature is inferred by their influence in the world and not directly sensed, then God can be perceived inferentially in ways similar to the laws of nature. Does this mean that the deity and the laws of nature have equal ontological status?

The naturalist rejects this equivalence. Let us take the following hypothetical cases exemplifying the responses of the materialist and the religious worldviews. When rain occurs, it can be, according to the materialist, due to a particular law or cause of nature, while according to some theological schools, due to the will of deity. Yet, when the sun rises, according to the materialist, it is due to another particular natural cause, while it is still due to the will of the same deity in the religious worldview. The materialist worldview assigns a cause whenever evident and does not confuse different and highly distant causes in one entity, but rather unifies the interrelation of causes in a grand system. On the contrary, the religious worldview tends not to distinguish between the various causes and confuses them in one entity, the deity, which is an unacceptable oversimplification. There is even more confusion when the religious worldview claims that this deity is conscious and endowed with several anthropomorphic attributes such as mercy, justice, and love. Here, the common element between natural ontology and religious ontology is that they both agree on the importance of causality and attempt to systemize its variety. However, religious ontology makes an inaccurate generalization by unifying all the causes of the world under one anthropomorphic being: God. This reasoning is unwarranted. The natural events of rain, sunrise, or abundant harvest do not

lead in direct lines of inference to God. The problem with the theistic argument lies in the unification of different causes added to an anthropomorphic claim, both of which are highly contested.[48] Ontological naturalism does not presume a first cause, God, since this very first cause is continuously pushed back by new discoveries to further series of causes.

Despite the fact that the world is all about matter, human study of matter is always incomplete, but perfectible through theorization, verification, and continuous exploration. And yet, Bunge's materialism is not just another traditional 'vulgar physicalism.' Rather, it is a materialism that adopts the notions of *emergence* and *system*. Emergent materialism as part of the systematic whole built up by Bunge is summarized in twelve premises stated in *Social Science under Debate: A Philosophical Perspective* (SSud xiii). These twelve premises shed light on Bunge's view of the macro structure of reality. Let us clarify their scope and interrelations.

The first premise states that *the real world contains only concrete (material) things* (SSud xiii). Bunge defines a material object as "one that can be in at least two different states" (PiC 67), which means that matter is characterized by change as the outcome of energy. More precisely, an object is material if it has at least two states at any given time. In symbolic terms, an object is material "if, for every reference frame *f*, and if S*f* is a state space for *x* relative to *f*, then S*f* contains at least two elements, otherwise, *x* is an immaterial object" (PiC 78). This is why Bunge thinks that "Plato got it right" in thinking that ideas or forms are changeless objects (ChR 10). In contrast with ideas, things do change, allowing us to demarcate the realm of *things* from *ideas* by using the criterion of change or mutability. Partially using this Platonic line of thinking, ideas are

[48] Michael Martin, *The Cambridge Companion to Atheism* (NY: Cambridge University Press, 2006), 36.

changeless forms because they are representations, abstractions, or reflections (accurate or not) of material properties communicated by sensation in the brain or by particular means of communication, for instance speech or texts. Being temporary representations or abstractions, ideas could capture the referent momentarily in an unchanging manner; hence, their seemingly lack of change. An example is the idea that 'the sun is golden.' The idea in this proposition does not change through time since it is a combination of a concept (sun) and a predicate (golden). Yet, although the propositional meaning, the idea, does not change, the linguistic meaning attributed to words can change due to sociolinguistics or other factors. But even if the idea does not change, the actual sun's color does change due to the rate of nuclear reactions it performs. Another example is the idea 'God is the first,' which, although it does not refer to any existent material entity, involves an analogy with material entities by the very construction of it. God, according to those who imagine him or her, resembles a first cause such as an igniting flame or light that causes the universe. This material resemblance is sometimes mixed further with anthropomorphic analogies such as an all-powerful father combined with an all-merciful mother. Again, what distinguishes the changeless content of ideas is their being temporary representations or abstractions (accurate or not) of some material properties. We have to note that although ideas are changeless, and thus immaterial, they can never exist without a material support, i.e. a cognitive means of communication such as a brain, book, tape, CD, or sound wave. In other words, since they are immaterial, ideas require some material medium for their operation. Bunge's line of thinking lies at the midpoint between idealism and vulgar materialism: ideas are not material, and hence have no

energy, but remain nevertheless an abstraction related to some material property and are always carried by some material support.

If a material object is the one that can be in at least two different states, it leads us to the second ontological premise: *everything is in flux in some respect or another* (SSud xiii). Thus, if all things in the world are *material* and by implication are in change or *flux*, this would result in the possibility of a certain formation of the world's fluctuating objects. The third premise holds: *all things and their changes fit patterns – natural or made* (SSud xiii). These patterns, in turn, form the basis of the world's matter. The fourth ontological premise clarifies these patterns by delineating the forms in which human knowledge is possible: "matter comes in six basic kinds: physical, chemical, biological, social, technical, and [cognitive]" (SSud xiii). Atoms and their elementary particle fields form the first kind, i.e. the physical, which, by forming relationships with other atoms, form the second kind, i.e. the chemical compounds. Thus, chemical systems are composed of physical systems adding new properties to physics. From the universe's great mass of physical and chemical systems, the earth is distinguished – as far as we know – by having the third kind, i.e., life or bio-matter. Unlike many traditional stances that define life in living beings in terms of the mystical immaterial spirit, Joshua Hoffman and Gary Rosenkrantz define life as a "natural kind of physical life that essentially involves a highly complex, self-regulating system of carbon-based macromolecules and water molecules." [49] More precisely, Bunge and Mahner see life, a living being, or a bio-system, as a material system whose *composition* includes nucleic acids as well as proteins (both structural and functional, in particular enzymatic, with the latter enabling the exploitation of habitat),

[49] Quoted in Robert Audi, ed. *The Cambridge Dictionary of Philosophy* (Cambridge: Cambridge University Press, 1999), 504.

whose *environment* includes some of the precursors of its components (and thus enables the system to self-assemble most, if not all, of its bio-molecules), and whose *structure* includes abilities to metabolize, and to maintain and repair itself (within certain bounds).[50]

This means that life emerged because of particular properties seen, among many others, in self-organization and self-reproduction mechanisms that enable the cell to deal differently with the second law of thermodynamics dominant at sub-biological levels.[51] This experimental investigation of life – evident in every single living being from the primitive forms of life (for instance bacteria) to the complex ones (for instance humans) – shows that life is a particular **'**emergentist' case resulting in nucleic acid and particular enzymes without the aid of any alleged immaterial spirit. Thus, biological systems are composed of chemical and physical systems *plus* new properties. The evolution of complex cellular entities or biological beings formed the first primitive living beings, bacteria, leading to the evolutionary ramification of the entire three living kingdoms: Archaea, Bacteria, and Eucarya (i.e., Protista, Fungi, Plantae, Animalia).[52] These living kingdoms form the fourth material kind, i.e., social. Organized individuals within the social kind, for instance ants or humans, are involved in modifying or altering reality resulting in the formation of the fifth material kind, i.e., technical, such as a bird nest or a city. Finally, out of these five living kingdoms, conscious individuals, i.e., humans, arise and engage in the construction and interpretation of symbolic systems as seen in visual

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[50] *Foundations of Biophilosophy* (Heidelberg: Springer Verlag, 1997), 141.
[51] A classical work on this issue is Erwin Schrödinger, *What is Life? With Mind and Matter and Autobiographical Sketches*. Cambridge: Cambridge University Press, 1972. See also François Jacob, *La logique du vivant*. Paris: Gallimard, 1976; translated in Arabic by 'Ali Harb as *Mantiq al-'Alam al-Hayy* Beirut: Markiz al-Inma' al-Qawmi, 1987.
[52] Robert M. Hazen & James Trefil, *Science Matters: Achieving Scientific Literacy* (New York: Anchor, 2009), 269-270.

and vocal symbols such as paintings, writing, or speech. This symbolic system forms the sixth kind of the world's matter, i.e. cognitive.[53]

The last four premises alluded to so far collectively say the following: *energy is a universal property causing everything to be in flux, which fits six kinds: physical, chemical, biological, social, technical, and cognitive*. It is worth noting that chemistry was not as mature as physics in the 19th century until it gained its solid basis with the completion of the atomic theory in the early 20th century and became related to physics. The same was also true of biology until the discovery of DNA structure in 1956, when biology became fully connected to chemistry. We are still awaiting the connection of physics, chemistry, biology, and psychology, since the cognitive mechanisms of the human brain are not yet fully understood. If Bunge's statement about the six kinds were formulated in the 19th century or prior to that, it would have been greatly contested by scientists themselves. Since Bunge's assertion is a very precise and detailed statement about the macro nature of the world, it will most probably be challenged by future discoveries about new world patterns or particular things that do not fit any known kind. Still, Bunge's materialist ontology entails positive assertions associated with resistance to falsification in the light of current knowledge. This fits with the task of the philosopher as suggested by Rescher, to provide answers to our biggest questions in the light of experience – "to create an edifice of thought able to provide us with an intellectual home that affords a habitable shelter" against ignorance and falsehood (PhR 4).

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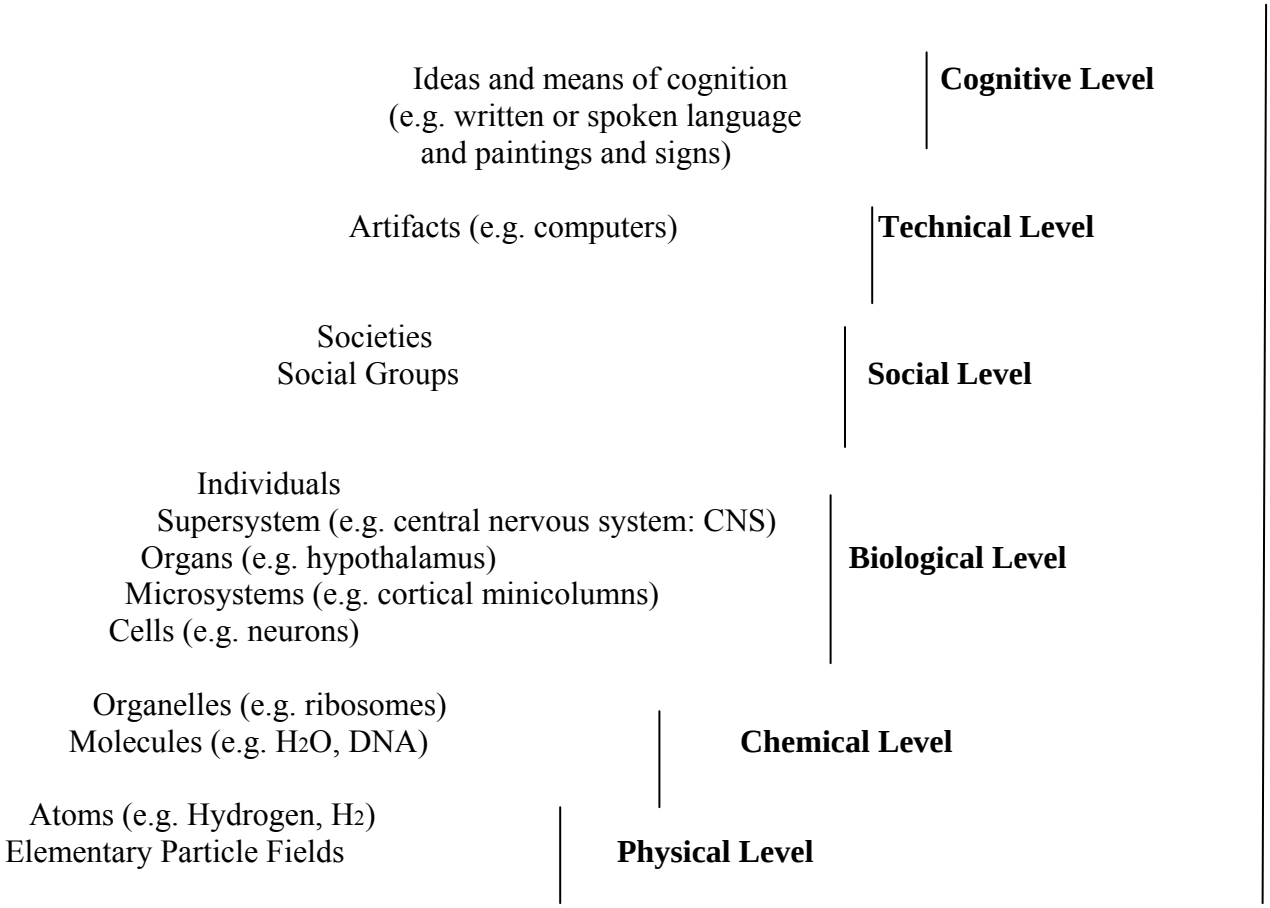
[53] This sixth material kind was overlooked by Bunge in earlier works such as *Scientific Materialism*. He realized its significance in 2000 (PiC 75) and called it "semiotic," although in light of experimental psychology, the term 'cognitive' might be more apt. Bunge's states the revision as such: "Minding animals, though not minds in themselves, may be made into a distinguished sublevel of the life level" (in Guttorm Fløistad, ed. *Philosophy of Latin America:* Volume 8 of *Contemporary Philosophy: A New Survey* [Dordrecht: Kluwer Academic Publishers, 2003], 255).

After this analysis, we come to the word 'reality,' which refers to the external world, the brain, and the communication between the first two through the senses. These three are exemplified by facts, fictions, and appearances. Reality is the totality of the fluctuating matter as seen fitting into six kinds. It is the system of all systems and includes all physical, chemical, biological, social, technical, and cognitive systems. The following figure refers to the six basic natural systems of the world's matter (PiC 87):

The System of All Systems: The World



These gradually emerging and interconnected hexagonal kinds of things in the world lead Bunge to recognize an ontological aspect in these material kinds as articulated in the fifth premise: *everything is either a system* (*a complex object whose parts or components are*

held together by bonds of some kind) *or a component of a system* (SSud xiii). In other words, the fifth premise is an abstraction of the fourth, concluding that the ontological nature of matter is systemic rather than constituting individually unconnected atoms or collectively random elements. Because of matter, the atom exists, and because of the interaction of atoms, the chemical system is formed. Systemic relations are the reason why we have physics and chemistry. Also, due to the assembly of chemical compounds, we have cell, organ, and body. Furthermore, due to familial relations that hold parents and children together and cultural relations that constitute a human group we have social groups of all kinds. If there were no systemic relations, biological and social levels would not come into existence. It is worth recognizing here that Bunge takes systemism to a deeper level than what Rescher suggests (see above # 1.2). Systemism is not only a coherentist method of understanding the continuously expanding contradictions of experience; according to Bunge, it is also an essential property of the things in the world. Systemism is rooted in the very materialism of things, a point that strongly ties materialism to rationalism, since systems are recognized primarily by reason. The deeper we go into matter, the more we need to theorize; and the more we need to understand rationalization, the more we utilize matter, for instance brain neurology. This suggests that the gap between mind and matter is narrowing.

As a result of the systemic nature of matter, the sixth premise states: *some of the properties of the world are emergent: they originate along with the system and disappear if and when it breaks down* (SSud xiii). Although the real world is the collection of material things, such a collection is not enough to explain why it functions in the manner that it does. In fact, there are relations, i.e. systemic properties that are not reducible to

their mere components. In other words, *emergent* properties are a result of the ties that relate things together in a system generating new properties. The concept of *emergence* is necessary to complete the explanatory power of the Aristotelian thing-property model, because it explains properties that are not attributed to an atomic thing. This view opposes not only *atomism* that gives the upper hand to the components of things, but also *holism* that ignores the agency of components in favor of aggregation. In Bunge's view, systemism compensates for the shortcomings of both the atomistic and the holistic views.[54] From the physical combination of two atoms of hydrogen and one atom of oxygen a chemical molecule, water or H2O, emerges with qualities that neither exist in hydrogen nor in oxygen alone: water is drinkable, hydrogen and oxygen are not. Based on a specific combination of chemical nucleic acids, a living cell (biological being) emerges with new qualitative properties. Chemical proteins do not live or die as such, but when they are functioning in the cell in a favorable environment, they participate in growth, proliferation, and death. And due to a certain combination of biological cells, complex individuals emerge. The emergence of more complex systems is the consequence not only of a mere aggregation of components, but of qualitative novelties that do not exist in the original components. Due to the ingenious organization of individuals, social entities emerge and engage in altering reality positively or negatively by forming technical entities and creating artificial things that do not exist naturally. Finally, the physical-chemical-biological constituents of the neurological brain are related with the social and technical kinds, which lead to the emergence of cognitive systems. Human knowledge, aesthetics, and ethics are cognitive fields created, recorded, and expanding through human culture.

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[54] M. Bunge, *A World of Systems* (Dordrecht: D. Reidel, 1979), 44.

Bunge mentions six kinds of reality, ending with the cognitive. Based on the technical system, we may foresee the emergence of a seventh system if robotics and artificial intelligence become sophisticated enough to react with the environment to sustain their own existence, proliferate, and develop self-reflective and decision-making capacities. If that happens, then 'artificial cognition' would emerge as the seventh material system.

This bottom-up ontological analysis of reality from atom to cognition, bundled into gradually more complex systems, leads to the converse top-down analysis, i.e. reduction. Bunge's seventh premise tackles this issue: *human societies and cognitive systems, although composed of physical and chemical parts, have irreducibly biological and social properties*.[55] This premise states that the realms of human beings and their thoughts are multiple rather than singular, systemic rather than made only of self-subsisting components. Hence, famine, for example, is a social problem with multiple components: it is physical with regard to climate change and chemical with regard to rain and soil quality; it is biological with regard to viral infections and social when the nobles abandon rural field management and enjoy the aristocratic urban life. The latter was one of the causes of the French revolution, according to Alexis de Tocqueville's *The Old Regime and the French Revolution*.[56] The various components of the physical, chemical, biological, social, technical, and cognitive systems can develop their dynamics in multiple directions, either bottom-up or top-down. As for bottom-up, a virus can cause a great social defeat; for example, the epidemic that struck the Incan empire weakened it to

[55] Bunge's original premise reads: "Although human beings are composed of physical and chemical parts, they have irreducibly biological and social properties" (SSuD xiii).
[56] See Raymond Boudon's foreword to Mario Bunge, *The Sociology-Philosophy Connection* (New Brunswick, NJ: Transaction, 1999), xiv.

such an extent that a small force of Spanish conquistadors was able to conquer and replace this rich and sophisticated culture.[57] Although the biological system in this instance is lower on the scale, it affects the social, which is higher on the scale. As for the top-down influence, social mismanagement can cause deforestation, which in turn can lead to the desertification of the biosphere and the disappearance, if not the extinction, of many living species. This was the case with soil salinity in ancient Sumeria (today southern Iraq), an event which is still evident after four millennia (SHoP 78). In this example, the social system is higher on the scale, but its actions affect the lower orders of geology and biology.

Human knowledge and social life, forming as they do a complex arrangement of emergent systems, are based on less emergentist subsystems – physical, chemical, and biological – but these constituents are not the sole factors. Physically suitable climate and biologically suitable plants do not necessarily cause agriculture to develop. Australia is a case of physically-chemically good land that did not produce agriculture since its early inhabitation by indigenous hunter-gatherer humans 40,000 years ago until the arrival of colonization (GGS 309). Agriculture needs more than physically and chemically good land; it needs also cognitive properties.

The emergence of qualitative novelties in fluctuating matter is a balanced recognition of bottom-up synthesis (emergence) and top-down analysis (reduction). This is why Bunge's eighth premise posits that *every complex system is composed of subsystems with properties that their individual components lack*.[58] The concept of system refers to several factors that affect components but are not identified with them.

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[57] Pamela Kyle Crossley, *What is Global History?* (Malden, MA: Polity, 2008), 70.

[58] Bunge's original premise reads: "Every society is a supersystem composed of subsystems with properties that their individual components lack" (SSuD xiii).

Economic recession, political revolution, or cultural decadence are examples of systemic social properties that are complex processes not reduced to mere constituents (for instance individual behaviors), but rather emerging within them. This is why no one in particular can be blamed for the 2008 world economic crisis, not even President George W. Bush. The reasons for this economic crisis, still controversial, could involve the combination of governmental deregulation since the 1970s, financial mismanagement, Ponzi strategies involving lending up to 32 times the value of real assets, public miscalculation, and overconsumption. The crisis cannot be reduced to only one of these components.[59]

Each succeeding kind of physical, chemical, biological, social, technical, and cognitive contains the previous ones. Hence, the sixth kind, cognitive, contains the previous five systems, since the brain is a biological-chemical-physical entity embodied in a social and technical environment. Similarly, the fourth, social, contains the previous three systems. This inclusion continues via reduction from the top-down until we reach the first elementary system, the physical one. Thus, the more complex the systems, the more numerous the composition of subsystems. The gradual complexity of reality's kinds is given by the composition of lower components into new systemic properties. Systematic relations amongst things result in new properties in the components of the system known as emergence (bottom-up composition), which leads to reduction (top-down decomposition). The above mentioned premises demonstrate Bunge's materialist and systemist stance on ontology; they do have consequences for knowing and acting, since being, knowing, and acting are inseparable.

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[59] Mario Bunge touches on this issue in "The Failed Theory behind the 2008 Economic Crisis." In *Raymond Boudon: A Life in Sociology - Essays in Honour of Raymond Boudon*, Edited by Mohamed Cherkaoui & Peter Hamilton, Volume 1. Oxford: Blackwell, 2009.

The epistemological implications of the above ontological analysis for the possibility of knowing are articulated in the ninth premise: *reality can be known, albeit partially and gradually, through experience and ideation* (SSud xiii). This stance consists in a ratio-empirical approach to reality that subjects reason to the experience of the external world. This approach simultaneously accounts for background knowledge, the contradictions of experience, and non-experiential knowledge obtained through the ideation of reason. Experiencing the external world is an issue of exploring more of the complexity of matter through discovering, measuring, and testing. This externalization does not exclude the objective study of human subjectivity. For example, in the case of mental illness, experiential-ideation attempts to understand the chemical disorders of brain hormones, neurological transmitters, and damage in brain tissues.

On the other side, ideation is the combination of imaginative power, which helps the individual to escape the constraints of experience, with the rational power of logical consistency and deduction. Ideation is also the source of imaginative power and creativity, including hypothesizing, theorizing, and re-theorizing, in order to reach non-experiential aspects of reality. Practitioners of physical science use the faculty of ideation to comprehend inscrutable subatomic levels, to calculate the unfathomable size of the expanding universe, or to estimate the chemical processes in stars that died several million years ago. This kind of experiential-ideation is unlike the mathematical ideation of the Maya civilization, which possessed an exact calendar for the Maya culture, going back a million years, but without proper verification of whether the Mayans even existed at that time (SHoP 96).

Experiential ideation is a combination of experience and reason, which employs the capacities of measuring and testing, by means of the former, with logical consistency and creative theorizing, by means of the latter. This does not mean that an infallible theory is ever established; ratio-empirical epistemology recognizes its partiality and fallibility as embodied in the tenth premise: *scientific research yields the deepest, most general, and most accurate (yet seldom definitive) knowledge* (SSud xiii). Bunge's stance lies between two positions: the first is the orientation towards truth of the logical positivists and the second is the skeptic phenomenalist position that rejects the possibility of reaching the *noumenon*. The latter is represented by Karl R. Popper, who thinks that finding truth through errors is the only possibility (more on this, # 3.3). What lies between achievable and unachievable truth is called by Bunge 'partial truth' which, for instance, affirms that humans are usually born with four limbs and yet acknowledges that this truth might be revised in light of further discoveries regarding what these extremities can be used for or whether one can reduce or multiply them by technology or genetic mutation. Bunge's partial truth means the possibility for both truth and change and embraces positive *meliorism*, which involves the perfecting processes of both ideation and experience. Every discovered layer of reality can reveal unknown layers, and every rational imagination, albeit creative and accurate, can be deemed insufficient at a second level of ratiocination. This is why discoveries provided by ratio-empiricism create new problems and additional questions for imagination and exploration. Philosophical analysis, "far from affording us a problem solving instrument, simply provides a magnifying glass that reveals the complexities in greater detail." In Bunge's ratio-empirical program also "traditional

issues were not dissolved or resolved but instead reemerged in more sophisticated, intricate, and subtle forms."[60]

As a completion of the triad of being, knowing, and acting, Bunge's eleventh premise is a corollary of the tenth premise and states that *the most responsible and effective valuations, moralizations, and actions are designed in the light of scientific findings* (SSud xiii). The maxim of humanist ethics is '*enjoy welfare and help to provide welfare*' (more on this, # 4). Knowing the good is neither provided by magical endeavor nor miraculous revelation; rather, it relies on the scientific understanding of bio-psycho-social needs and wants and requires the rational capability to devise strategies and tools for realizing them. Knowing the good also involves the constructive capability of reason to assist in balancing morality. Doing the right is neither an authoritative and superstitious endeavor, nor an anarchist chaos; rather, it is a fine balance between the rights of attaining basic needs and legitimate wants, and the duties derived from obtaining these rights up to a point where everyone would achieve his/her rights without jeopardizing anyone else's rights. Thus, Bunge's ethics can be summarized by the attempt to harmonize the desire for personal satisfaction with the imperative for social justice.

The twelfth and final premise emphasizes the overall relevance of philosophical reflection, as it states that "Science and technology advance not only through theoretical and empirical research but also through elucidation, analysis, and systemization of their own presuppositions, generic constructs, and methods – a typically *philosophical task*" (SSuD xiii). This is an acknowledgment of the role of ideal rationality in the

[60] N. Rescher, *Minding Matter and Other Essays in Philosophical Inquiry* (NY: Rowman & Littlefield Publishers, 2001), 33. – More on this below, # 3.3.

conceptualization of matter and the theorization of its alleged basis and conjectured patterns. There remains a distance between the objective truth and the approximated truth reached by human experiential ideation. Whatever the facts of being, the truths of knowing, and the variety of good, there will still be the need for debate, investigation, systemization; that is, there will still be the need for systematic philosophy. Elaborating being, knowing, and acting is a philosophical task in the first place. This triad is articulated in those twelve premises that precisely clarify Bunge's unification of philosophy based on materialist ontology, realist epistemology, and humanist ethics.

2.5 Concluding Remarks

Bryan Magee attributes to Kant that it a scandal that no one had successfully proven the existence of the external world.[61] For Bunge, error, prediction, control, and discovery all provide evidence for the existence of the external world, provided that we properly explore, imagine, and test the nature of the things or relations at hand. The micro nature of reality is seen in terms of things, their properties, and the emergence of property clusters; of processes, i.e. states of things, their changes, and the emergence of mechanisms; and of trajectories, their restrictions, and the emergence of laws. This organization leads to a new picture of what the world looks like beyond the variety of phenomena. Bunge's macrocosmic worldview of reality shows that things are in constant flux, forming gradually enlarging patterns, namely the following six basic systems: physical, chemical, biological, social, technical, and cognitive. The evolution of complexity leads to the emergence of the qualitative novelty of bottom-up evolution, which can also be partially reducible through top-down decomposition. Although truth

[61] Bryan Magee, *The Great Philosophers: An Introduction To Western Philosophy* (Oxford: Oxford University Press, 2001), 261.

about this reality is best accessed by experience and ideation, findings are seldom definitive.

Although Bunge's conceptualizations are fashioned in terms of a scientific materialism, they are metaphysical (e.g., flux, pattern, process, mechanism, system, emergence, reduction) and cannot be accessed by the senses. This scientific metaphysics, however, is to the liking of neither the logical positivists who disapprove of metaphysics and system-building, nor the Kantian tradition. Bunge's approach remains faithful to the classical empirical-rational debate and updates it with the help of the logic and scientific findings of the day. As Bertrand Russell points out, "A philosophy which is to have any value should be built upon a wide and firm foundation of knowledge that is not *specifically philosophical*. Such knowledge is the soil from which the tree of philosophy derives its vigor. Philosophy which does not draw nourishment from this soil will soon wither and cease to grow."[62]

Bunge's approach might be seen as a *supernatural* one – not in the derogatory sense of seeing magic or the divine in the world, but rather in seeing the world through an up-to-date scientific lens and thoroughly 'coherentist' rationality. The more we try to encompass the world's matter and its interrelations, the more theories and rationalization we need. Bunge sees materialism and idealism as mutually dependent, and therefore he seeks to modify both. We might doubt that things are best characterized by their properties; more advanced and complex experience might reveal that this archaic Aristotelian model is outdated, just as Democritus' atomic model collapsed. We might be skeptical of the validity of energy as the basis of everything that exists. We certainly have not surveyed and tested the infinity of all things in order to support the absolute inductive

[62] B. Russell, *My Philosophical Development* (London: Routledge, 1995), 170 – emphasis mine.

judgment that *everything is in flux*. We might carry this speculative critique on to the conception of *emergence*. Yet, Bunge's ontology is very vulnerable to falsification; it is possible that counter examples to, or discrepancies in, his ontology may be found. Simply put, whatever partial truth Bunge reveals, it hides, in some aspect, a partial falsity. There is no shame in the vulnerability of partial truth as it is the full price paid for truthfulness.

The merit of Bunge's ontology does not consist in laying down a scientific dogma. Bunge's success lies rather in his ability to engage philosophers and scientists again in a fruitful debate about metaphysics analogous to that which existed in the times of René Descartes or David Hume. Of even greater merit is Bunge's ability to link ontological theorizing with epistemology and ethics. Whereas Bunge promises cooperative discussion in scientific, logical, historical, psychological, and idealistic issues, his motto still holds: *do not talk about philosophy, do philosophy instead!* In other words, do not be indoctrinated; rather, be critical and systemize even an up-to-date and coherent worldview.

Chapter Three

Epistemology: The Perfectibility and Unity of Human Knowledge

The massive explosion of book printing, specialized journals, and newspapers since the 18th century; the proliferation of elementary and secondary education since the spread of 19th century mass education in the West, and in many parts of the world after the Second World War; the expansion of higher education as a requirement for professional employment; the growing fusion between capitalistic investment and research labs particularly in pharmacology, engineering, and electronics; the reliance of armies on intelligence and strategic research institutes, added to the governmental surveillance of citizens' data and the increasing coverage of media correspondents everywhere in the world; the popular and specialized search for space; animal, plant, and paleontological discoveries; and - last but not least - the flood of information and communication in the internet age: all these exponentially increasing phenomena show that modern *Homo sapiens* lives on knowledge more than ever before. Bees collect pollen to make honey, ants gather seeds for the winter, and *Homo sapiens* is increasingly becoming *Homo quaerens*.

3.1 Approaching the Epistemological Problem

The significance of contemporary epistemology lies in the attempt to comprehend an ocean of knowledge, whether contradictory or overly precise, harmful or useful, illusory or established. This overall concern for knowledge is the context of Bunge's work on epistemology. It also explains why Bunge calls his two volumes on epistemology *Principles of Inquiry*. If metaphysics is the "science of being *qua* being,"[63]

[63] N. Rescher, *Metaphysics: The Key Issues From A Realistic Perspective* (NY: Prometheus Books, 2006), 13.

then epistemology is the "inquiry into inquiry" (UtW xiv). Yet, while the knowledge industry is thriving, "the science and philosophy of knowledge are still in the bud," according to Bunge (EtW xiii). He does not see epistemology strictly confined to 18th and 19th century concerns; rather, epistemology in the wider sense is "the merger of philosophy, psychology, and sociology" (EtW xiv).

Classical epistemology from the 17th to the 19th centuries has posed, according to Bunge, the following major questions (EtW 1): How and what can we know? To what extent do the subject and the object influence our knowledge separately or mutually? What is truth, how does it range between probability and certainty, and how can we reach it? What is the demarcation between *a priori* and external knowledge? How is knowledge embedded in language and what is the ontological status of concepts and universals? What is the relation between knowledge and action?

Contemporary epistemology, however, has transformed past inquiries into deeper and more complex questions. What is rationality and how do its mechanisms of classification, explanation, justification, and coherence work? What is the role of the formal sciences (e.g., mathematics and logic) in factual knowledge? What is the role of belief and plausible reasoning in the orientation of our thinking? What are the basic sciences and the applied ones, i.e., technology? How does the social and cultural domain influence cognitive activities? What are the characteristics of learning communities and what are their constraints? (EtW 3).

A comparison of the above two lists of questions reveals that classical epistemology wondered about the nature of knowledge itself and the knowing subject, and then sought to establish a general theory of knowledge that ushers in all the branches

of knowledge. On the other hand, contemporary epistemology, as Bunge sees it, avoids the misconception 'knowledge itself,' because knowledge is not a static entity but rather a social process conducted by individual brains. Such an epistemology focuses on the 'learning community' rather than the isolated knowing 'self,' which implies that epistemology is in fact rooted in several branches of actual knowledge (EtW 3). This is why one of epistemology's primary questions is "*who* […] *can know what, and how?*" (EtW 21) 'Who can know' is the responsibility of psychology, 'know what' is the responsibility of the history of ideas, and 'how' is the concern of methodology, philosophy of science, and sociology of knowledge, all of which together compose epistemology. In other words, the "immaterial and isolated (and male and adult) knowing subject of traditional epistemology must be replaced with the inquiring brain, or team of brains, embedded in the society" (EtW 16).

This integral approach expands the borders of classical epistemology, which is not the case with either Kantian epistemology or the positivist and analytic camps whence a great number of epistemologists come. For example, Kantian epistemologists are not interested in current advances in neuropsychology in which many of the brain's faculties have been mapped out. This disinterest in neuropsychology applies to the logical positivists as well. The latter are also not interested in the social aspects that direct the researcher or contain research within so-called commonly agreed limits. In short, for Bunge, there is more to epistemology than what has been traditionally ascribed to it. Epistemology should tackle all facets of knowledge, whether in ordinary life, science, or the humanities. In addition, a successful exposition of epistemology is not only descriptive, but must also be prescriptive in order to guide the researcher and facilitate

discoveries in the realm of either facts or ideas. The better "we know how we can get to know, the better we can improve (or block) the learning process, particularly in science, technology, and the humanities" (EtW 14). As the study of grammar improves writing and the study of logic refines thinking, the study of epistemology, Bunge posits, enhances inquiry (EtW 14).

According to Bunge, ancient philosophy contributed little to the question of method. This lacuna, he says, is visible for instance in "Plato's injunction to shun opinion (*doxa*) and seek only certain knowledge (episteme), in Aristotle's practice of defining everything, [and] Hippocrates' recommendation to abstain from super-naturalistic explanation" (EtW 4). Epistemology had to await the rationalist-empiricist debate in the 17th and 18th centuries in order to emerge as a full-fledged discipline.

Epistemology suffered a fate similar to ontology (see above, # 2.1) due to the preponderance of Kantian thought: "Kant attempted to join Leibniz's rationalism with Hume's empiricism. But I submit that he chose the wrong halves of each: Leibniz's *apriorism* and Hume's phenomenalism. Worse yet, he glued them with intuitionism" (ExJ 408). Bunge, instead, combines the *verifiability* of material evidence not of phenomena as developed in phenomenalism with the *universality of logic and the creativity of imagination* not apriorism as developed in 17thand 18thcentury rationalism, in order to work out a productive ratio-empirical system. For him, "Kant had managed to put together the negative aspects of empiricism and rationalism by holding that we can have no experience without certain *a priori* intuitions, that things conform to human thought rather than the other way around" (EtW 197). Bunge's ratio-empiricism, while investigating the variety of the material world with the aid of theorizing, generates

inquiry and new knowledge, whereas Kant's rational *apriorism* with its belief in the chasm between *noumenon* and *phenomenon* blocks inquiry altogether. This is why many of the most novel achievements in knowledge, such as Darwin's theory of evolution, Marx's value surplus analysis, Russell's logic, and Einstein's physics, developed without the guidance of Kantian epistemology.

The Kantian ontological chasm between *noumenon* and *phenomenon* (see above, # 2.1) has direct consequences on a philosopher's stance on the path of inquiry and epistemology in general: "Author A believes in *logic*, B only in *intuition*; C swears by *induction* and D by *deduction*; E by *experience* and F by *theory*; author G is *gradualist* and H a *catastrophist* with regard to the evolution of knowledge in society; thinker J ignores *society* altogether and K places knowledge in *society*" (EtW 15). Since each position proffers its own plausible examples, no position is entirely wrong; and yet, no position is entirely compelling because none present a system that accommodates the many competing and conflicting features of inquiry. There is no point in emphasizing one aspect of inquiry over other equally functioning and fruitful ones. Insisting on a particular method rather than seeking all that produces knowledge is a form of "methodolatry" (EtW 15), not epistemology. In order to settle this problematic debate, we have to ask the question: what is knowledge?

3.2 The Nature of Knowledge

What Bunge calls 'systemism' aptly positions him to discuss modern epistemology because he has settled crucial questions concerning ontology (see above, # 2). Kantian epistemology was based on problematic ontological premises whose conclusions have been carried over to epistemology, for instance, in the statement

regarding *not knowing things in themselves*. Any separation between 'knowledge' and the 'world' as the final goal of knowledge does a great disservice to epistemology; it amounts to separating a sculpture from its stone. True, sculptural works do not exist on their own without the ideas and skills of their maker. Yet, this very maker is not the sole factor; sculptural works need carving tools that do not exist only in the mind of their maker. The way a farmer knows about the importance of environment (water, temperature, light, fertilization) for his crops is the way an epistemologist should relate the world to his ideas.

The world as understood by science substantiates naturalist ontology, which is the basis of Bunge's realist epistemology. Bunge's argument leads to the conclusion that epistemology is nothing but a branch of ontology, because "cognition is only a special kind of the biological process, and therefore it is an object of the study of the ontology of organisms" (EtW 12). Thus, rather than speaking of knowledge in itself, we should say that "All cognitive activities, from sniffing and exploring to theorizing and forecasting are biological functions" that occur in the context of social and environmental conditions (EtW 6). Just as Newtonian physics motivated Kantian epistemology and outdated the Cartesian one, it is plausible that Donald Hebb's neuroscience would render Kantian epistemology outdated. The rationale for this is that "Every cognitive act is a process in some nervous system, whether human or not. To put it negatively: There is no knowledge in itself" (EtW 23). Just as we cannot speak for instance of motion divorced from a moving object, we cannot speak of knowledge in and of itself. Rather, Bunge suggests, we should speak of knowledge of a particular person or of a social group. In this vein, we can describe the knowledge of a human being at a given time as "the set of all the items it

has learned up until that time— i.e., the collection of changes in its plastic neural supersystem" (EtW 42).

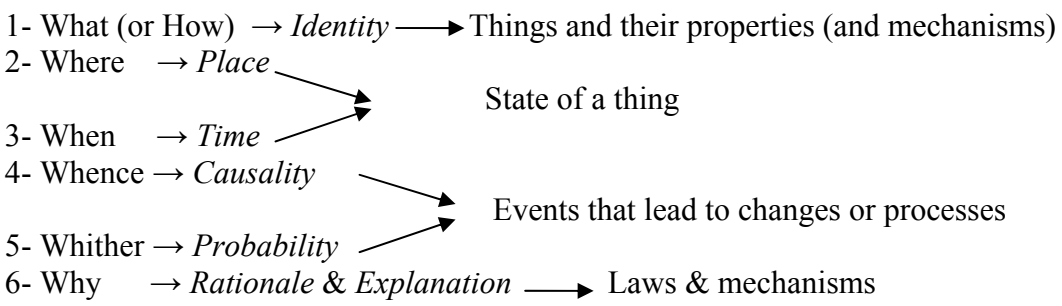
This approach to knowledge is in line with Bunge's attack on detached idealism. For if there is no knowledge in itself, then there are also no true propositions in themselves. "Propositions are not born with truth values but are assigned truth values on the strength of tests" (UtW 116). There is no floating truth called 'the sun rises up from the east;' rather, there is an activity in someone's brain conceiving that the 'the sun rises up from the east.' According to this view, "truth and falsity are primarily properties of perceptions and conceptions" (UtW 120). If there is no knowledge in itself, then there is also no truth in itself. One's vision or proposition can be true or false, but without real referents, truth cannot stand on its own. Truth indicates the correspondence of a proposition with its reference. (see below, # 3.3)

Such criticism of 'knowledge in itself' and 'truth in itself' is directed not only at Continental traditions of epistemology, but also at Anglophone epistemologies which commonly describe knowledge in terms of belief. Although problematic, there is a merit for such a word choice because human knowledge is rarely certain and is constantly in change and conflict. Therefore, why should knowledge not be called belief? And yet, if all knowledge is relative to the state of the subject's belief, how can we express knowledge of formal certainties (for instance: 1+1= 2) or of factual certainties (for instance: living things experience death)? The concept of belief does not accommodate past instances, nor does it refer to the act of doubt where one is neither in belief nor in disbelief. In short, the concept of belief cannot incorporate the many dimensions of knowledge. Hence, Bunge suggests the following: instead "of defining knowledge as

justified belief, a rational person will define justified belief in terms of knowledge," which can be stated this way (EtW 89):

1. *s believes p* which is defined as *s knows p* & *s* gives assent to *p*;
2. *s* is *justified in believing p* which is defined as *s* knows *p*, and *p* is *approximately true* or has a model;
3. *s* is *justified in doubting p* which is defined as *s* knows *p* and *s* knows of *no grounding* to assign *p* a definite truth value or a model;
4. *s* is *justified in disbelieving p* which is defined as *s* knows *p* and *s* knows that *p* has been *refuted* or has no models.

This fourfold qualification pertains to belief based on factual and theoretical grounding, and their opposite based on no grounding or on grounding that has been refuted. Grounding shifts the attention from the psychological attitude of belief to its validation. Knowledge is not mere belief; it is rather "knowledge of facts, i.e., items in the real world, such as states of things and changes in things" (UtW 258). Bunge equally admits the knowledge of formal properties, which can be seen also as 'formal facts.'[64] Epistemology is about *exploring and understanding*. These processes refer to acts of reason that seek to answer coherently the "six Ws […] what (or how), where, when, whence, whither, and why" (UtW 58). These six Ws are directed towards topics in the following order:



[64] Dr. Michael Kary kindly brought this point to my attention.

Understanding, a central concern of epistemology, is a mapping out of reality: it characterizes things, their states and processes within time-space, while providing reasons for their causes and explanations for the mechanism of their overall behavior. The interrogative aspects of these six Ws, which themselves constitute the general task of epistemology, cohere with Bunge's outline of ontology. Since knowledge is "knowledge of facts" (UtW 258), epistemology is the widest understanding of reality. Yet, if knowledge is about facts (formal or factual), then how accurate can knowledge of these facts be? In other words, how truthful is our knowledge? This question shifts epistemological discourse from the concept of belief to the concept of truth. The next section articulates Bunge's epistemological responses to the question of truth.

3.3 Bunge's Views on the Validation of Truth Claims

If epistemology is the *science of exploring and understanding*, then how can its truth claims be validated? This question has implications for the validity of the entire history of human traditions, as Bunge notes: "For thousands of years physicians have prescribed cures, judges passed sentences, and religionists pronounced dogmas, without sufficient evidence and sometimes with no evidence at all" (UtW 69). A coherent worldview has to achieve an epistemological progress in order to get better legitimacy. Bunge differentiates six of the major epistemological doctrines that attempt to provide a truth criterion; he maps out his agreement and disagreement particularly with unanimism, pragmatism, rationalism, empiricism, critical rationalism, and critical realism.

The first epistemological doctrine claims that truth is attained by the consensus of experts; thus, it is called unanimism. This claim has a grain of truth because most of the facts of knowledge involve consensus at some point in order to be accepted and

popularized by an academic community. The merit of unanimism consists in facilitating the formation of a learned society, and also communication. Yet, history shows that scientific discoveries are in many instances an overturning of the reigning consensus. Therefore, consensus is not sufficient as a truth criterion. Bunge captures the insufficiency of consensus in scientific discovery by suggesting that a "specialist may be trusted to spot wrong solutions, but spotting wrong problems takes more than professional competence, particularly when an entire army of knights has been tilting at windmills for some time" (EtW 284).

The second epistemological doctrine, pragmatism, claims that the truth of a claim relies on the prospect of its success and actual usefulness. Pragmatists like William James, Charles Sanders Peirce, or John Dewey were right in recognizing the importance of practice over against detached contemplation, and success over against mere theoretical ideals. Yet, not all contemplation (for instance, an imagined number or some theoretical mathematical topic) is subject to practice in the first place. Moreover, some hypotheses might not have favorable conditions for their success during a period of time in which the right ideas and techniques that would make them feasible are lacking. Like success, usefulness also has its shortcomings: if usefulness were the criterion for truth, then, as Bunge points out, "lies may be just as useful for life as truths" (EtW 7). Usefulness has to do with motivating behavior, but it is not a truth criterion. Besides, if truths are determined by what lives the longest, then "the persistence of superstition" would be the strongest of truths (EtW 8). In short, pragmatism does not provide a sufficient criterion for truth.

The third epistemological doctrine claims that truth is attained by the coherence of the entire body of knowledge, which can be attained only through reason; thus, it is called rationalism. Yet, such a claim is problematic, since mentally ill patients may eventually construct a highly consistent world of dreams no one else inhabits (see UtW 69). Another example might be given by the theological theories of each of the three monotheisms. Many Jewish, Christian, and Muslim theologies enjoy a high degree of internal consistency; yet, their theological theories are mutually exclusive, and thus we do not know who is right and who is wrong without external criteria. Hence, coherence is not enough, and ideas should cohere not only amongst themselves but also with the facts of the world.

The fourth epistemological doctrine claims that truth is reached by positive evidence; thus, it is called positivism or empiricism in a more general sense. Needless to say, no one, including the adherents of the previously mentioned three epistemological doctrines, would claim that their statements are totally free of any positive evidence and comply with inexistent, illusory facts. Yet, let us examine the reactions of the unanimist, the pragmatist, the rationalist, and the empiricist when someone poses the question, 'is there a new café nearby?' The unanimist would find it easy to respond, 'it is two blocks away,' because there is a consensus on the matter in the neighborhood. If there is no such consensus, the unanimist will not find an answer or would deny the existence of a new café. The pragmatist might give the same answer either because helping a stranger is useful or helping the café owner would benefit the revenues paid to the city. If there is no usefulness, the pragmatist might respond, 'we do not have a new café in this neighborhood,' while assuming that unnecessary traffic might make the neighborhood

noisy. The rationalist might have a hard time answering this question if he has no previous knowledge of cafés. Hence, he cannot certainly infer the existence of a new café from the existence of a commercial mall in the neighborhood or something of that sort. Answering this particular question might be rather the privilege of the empiricist who would go with the person who asked the question to verify that a café actually exists 'two blocks away.' This advantage of the empiricist relies on sense perception; but it is also his very disadvantage because concentrating on a sense-data method does not by itself provide the ability to pose questions, work out hypotheses, or construct theories. The reason for this inability is that questions cannot be found amongst sense data. An open window next to a sleeping person in a freezing climate does not say more than the information included in the sentence. The question 'whether this open window next to a sleeping person in a freezing climate will make him more comfortable or sick' is not included in the sense data, but rather is rooted in our pragmatic concerns as biological beings and in our knowing that a freezing climate can make us sick. Senses provide answers, not questions. The mind is greatly motivated by a handful of instinctive concerns for survival, and the educated mind is also inhibited by formal and factual problems in the midst of social and environmental conditions (EtW 104). The human mind is not just a sort of 'blank slate' on which experience writes; it also influences experience through its own concerns. Bunge articulates his indictment against empiricism because of its sole reliance on sense data, and he identifies the following shortcomings (EtW 47):

1. Appearance, unlike reality, is poorly structured, but is in need for the rationalization of theories.
2. All sense data signals are embedded in noise, so they need, for example, a trained ear to hear a particular voice out of the noise.

3. Perception and memory are highly selective and unreliable: whereas at times they discard details, at other times they pass over essentials. This is why testimonies on a crime scene, even if numerous, hardly agree on details.
4. Motivation is often lacking for testing claims and, at other times, testing is inhabited by laziness, fear, or bias.
5. We learn most easily those items that happen to be consistent with our belief system and tend to ignore those which are dissonant, as is the case with unfavorable evidence for our pet beliefs.
6. Learning new knowledge at a fast pace requires plenty of previous knowledge, such as languages, conceptual tools of mathematics and logic, and surveys of the historical debates. This condition is rarely available but for highly educated interdisciplinary scholars and in a late age.
7. We are seldom equipped with comprehensive and coherent theories helping us 'make sense' of experienced events; so we have nowhere to 'file' the latter. This is why globalization happened long before someone came to conceive and label it under the term 'globalization;' it was then that we started to recognize such a phenomenon and gather its aspects in one category.
8. Knowledge does not necessarily make us more receptive to new ideas: learning develops a 'set' (*Einstellung*) or habit that makes it difficult for the subject to face new problems or situations. This is why people rarely learn distant disciplines after they gain their degrees. Equally, it is very hard for indoctrinated and religious believers to change their beliefs after their indoctrination.
9. We may be insufficiently trained in formal tools such as argumentation, logic, scientific method, statistics, and experimental design. Some subtle parts of experience can never be captured without such complex and highly idealized tools.
10. We may need to appear in the right for social reasons, and may thus be driven to simulate that we have received the message, even though there was no message to be received.

This is but a short list of objections to the epistemological doctrine of empiricism. One objection, though, suffices to invalidate the reliance on sense data as the prime source of knowledge. This objection is based on the occurrence of discovery and prediction, both of which utilize theoretical sources as well as sense data to reach conclusion. In this regard, Bunge asks: "How is it possible to predict the existence of unheard-of properties, events, and even things? If every scientific statement were nothing but a datum or an empirical generalization, such predictions would be miraculous" (UtW 55). If discovery and prediction yield nothing but what sense data already provide, we would have neither

discovered nor predicted anything new. For Bunge, empiricists engaged in "data hunting and gathering" (Dic 218) easily forget that knowledge is more than sense data and that epistemology needs more than empiricism to guide inquiry.

In reaction to enslavement to sense data, the intuitionists try to highlight the creativity of the mind and the novelty it adds to raw information. Yet, intuitionists concentrate on the non-inferential element of creativity in a way that prevents reason from partaking in the benefits of theorizing. As Bunge points out, "intuitionists, such as Bergson and Husserl, cannot account for error because they claim to have instant access to full truths" (ChR 31). If one has an intuition, how does one know one is right or wrong? Intuitionists do not provide such a criterion for that. This is why Bunge criticizes Bergson and Husserl when they claim that "the highest, or perhaps even the sole, source of knowledge is the pristine, total, and instant intuitive apprehension of the whole, untainted by either experience or reason" (EaC 102). Instead, rationalism and empiricism should complement each other.

The fifth epistemological doctrine claims that one arrives at truth by negative evidence; it is called critical rationalism. This is championed by the Austro-British philosopher of science Karl Raimund Popper (1902–1994), who was "characterized by [Otto] Neurath as the [Vienna] Circle's official opposition."[65] Popper thinks, for instance, that although there is no way to prove a law statement such as 'the sun rises from the east,' one can still prove that it does not rise up from the west.[66] If we claim that the sun will rise up from the west tomorrow and if this is not the case, then our statement has been falsified. According to Popper, negative evidence is the only valid method to

[65] Donald Gillies, *Philosophy of Science in the Twentieth Century: Four Central Themes* (Boston, MA: Blackwell, 1993), 21.
[66] See Alan Francis Chalmers, *What Is This Thing Called Science?* (Indianapolis: Hackett, 1999), 59-73.

demonstrate the falsity of claims. There is no positive method whatsoever to demonstrate the truth of universal claims, because according to the Kantian phenomenalist stance of Popper, we cannot be certain of the existence of any scientific laws. Popper's falsification as the only path to validation is, according to Bunge, false. Laws can be adduced as positive evidence, and they do help us to formulate statements. If Popper claims that we might find a human being in the future who would not need food, the response is 'all animals that live by energy need energy by nature.' Another case of positive evidence for Bunge is prediction, which is "not that cheap, as shown by the predictive barrenness of pseudoscience" (UtW 70).

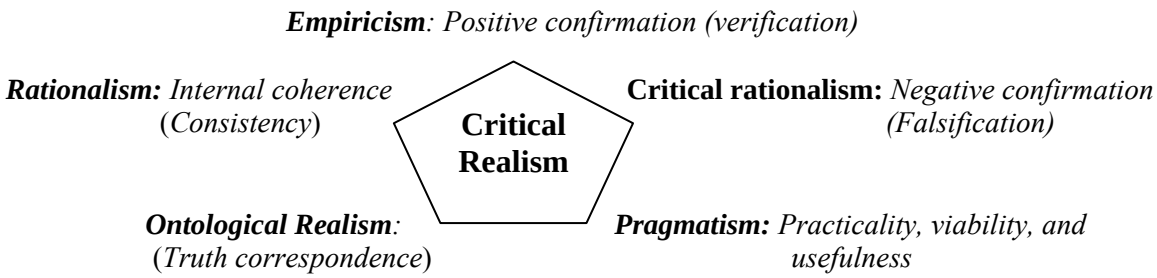
A summary of the presumed reasons for the validity of the five epistemological doctrines discussed above is as follows (UtW 70):

Unanimism: Consensus of experts
Pragmatism: Practice, success, and usefulness
Rationalism: Internal consistency and coherence
Empiricism: Positive evidence from sense-data
Critical rationalism: Lack of negative evidence (falsification)

As in the case of numerous witnesses, truth lies in getting a comprehensive picture and excluding exaggerated, selective, dogmatic, and contradictory testimonies. "Each worldview encourages the search for certain explanations while discouraging others" (UtW 12). Let us recall Rescher's reference to aporetic clusters (# 1.2) as "a group of contentions that are individually plausible but collectively inconsistent" (PhR 93). What we need here is a systemization of the components of the aporetic cluster Bunge identifies as critical realism. For him, "critical realism is a sort of synthesis of *rationalism* (the coherence requirement), *empiricism* (positive evidence), and *critical rationalism* (negative evidence), plus the realist thesis that the theories in science and

technology represent (poorly or accurately) parts or aspects of the real world" (UtW 69). In this age of instant communication of philosophical literatures and scientific findings, there is no justification for worshiping one particular method of truth validation; the various aspects of reality need several ways for providing us with more comprehensive knowledge. "One way of gaining knowledge is by making observations or measurements, another is by forming and checking conjectures, and a third is by ferreting it out of available knowledge, i.e., by inference" (EtW 228). Critical realism is a systematic epistemological stance that combines the fruits of all the past doctrines, while weeding out their overlapping contradictions. Bunge's critical realism also resolves many methodological problems such as the controversy between empirical inductivism and rationalist deductivism. In Bunge's view, "research is sparked off by problems, not by observation or by hypothesis. Observation poses problems or checks hypotheses, but it is neither the only source of problems nor the only way of testing hypotheses. All inquiry except the most trivial involves deduction mingled with plausible inference, and the latter includes induction but is not restricted to it" (EtW 229). Critical realism admits of the role of reason as the factor of *consistency* and as the actor of *creativity* in the case of conjecturing and hypothesizing. It also relies on empiricism for exploring the unknown and for verifying creative hypotheses. Critical realism admits of the role of pragmatic viability in setting the limits for any research and sees the role of usefulness or harm as motivator or inhibitor in research. It also abides by Popper's principle of falsification when it occurs, but not as the sole indicator of truth. In short, critical realism is the heart of active comprehensive inquiry that synthesizes the aporetic cluster of pragmatism,

rationalism, empiricism, and critical rationalism. This pentagonal synthesis might be expressed as follows:



The complexity of critical realism makes the process of evaluating truth claims long, and also fragile; such "multiplicity of value indicators renders evaluation delicate but makes for responsible evaluations" (UtW 154). Let us take the following imaginative example of the many steps a truth claim has to go through. A creative rationalist once hypothesized that 'medication x' should be relevant in curing cancer because it has the power to eliminate the cancerogenic proliferation of cells. An empiricist proved that this medication has indeed been found successful in curing cancer in the patients with whom he worked. Yet, the critical rationalist found that the generalization of the empiricist is proven false for a particular group of patients: the medication does not cure patients in younger age groups, but seems to work in cases of older patients. The pragmatist welcomes this medication but he demands that chemical reactions involved in the medication have to be simplified in order for the medical community to understand them. In addition, the pragmatist recognizes that since the US Food and Drug Administration has adopted tough requirements for medication to be legalized, he seeks to run trials of this medication in the hospitals of countries where the requirements are less strict. In this hypothetical case, the critical realist can be the embodiment of all the mentioned individuals when he works on several stages of his research. The problem here is that the

critical realist's inquiry does not end, since it is a continuous process of problems. For example, a new creative rationalist might suggest that cancer should not be cured by mostly harmful medications, but rather prevented by antioxidant food. The empiricist may find that the medication of the past did not completely cure the identified patients but only effected a remission for a period of ten years, after which the cancer relapsed. The falsificationist might discover that while medication x appeared to be working; many cancerogenic cells were not eliminated but only inhibited. The pragmatist may surmise that manufacturing this medication will be so expensive that only the wealthy will be able to afford it. Therefore, if health insurance companies will not accept this medication for the mass market, there is not enough incentive in continuing the research. In other words, the critical realist's attempt to deal with so many fragile elements makes the whole project of inquiry extremely unstable at some points. And yet, the critical realist believes that unearthing one level of reality is better than nothing. The inner complexity of critical realism lays bare unsystematic epistemologies, particularly in the case of denying the positive role of *hypothesizing*, which is the merger between rational creativity and empirical check. In this regard, Bunge says that "dogmatic rationalists, intuitionists and radical empiricists have no use for hypothesis: the former own indubitable *apriori* axioms, the intuitionists are endowed with a special direct *insight* (some of them even with what Husserl called *Wesensschau*, i.e. vision of essences), and the radical empiricists, more modest, are content with *perceptions* and images" (EtW 320-321).

Thus far, four out of five elements of critical realism as proposed by Bunge have been discussed. Ontological realism refers to the external existence of things in the world and demands reference to the concept of truth. Since, for Bunge, knowledge is made out

of mental *fiction* and material *facts*, he adopts the traditional Leibnizian position on truth and says: "As Leibniz argued, there are two kinds of truths: truths (and falsities) of reason, and truths (and falsities) of fact" (UtW 117). For example, 2+2= 4 is a truth of reason, while 'man is mortal' is a factual truth. Truths of reason have been handled relatively less controversially by mathematicians and logicians; however, factual truths are more controversial, so Bunge adopts "the fact-proposition correspondence" stance (UtW 120). Thus, 'my cat is on the mat' has to refer to 'my cat' which is 'on' that particular 'mat.' Any change in those three elements will doom the statement to be inaccurate or completely untruthful. The following cases do not truthfully correspond to the proposition, 'my cat is on the mat':

- His cat is on the mat.
- My cat is underneath the mat.
- My cat is on the couch.
- My dog is on the mat.
- There is neither a cat nor a mat in the room.

In other words, Bunge's corresponding stance on truth[67] identifies factual truth with adequate knowledge of fact. Hence, "proposition '*e* is the case' is true if, and only if, some animal has adequate knowledge of *e*" (UtW 120). Bunge further suggests the following characterization of this adequacy: "truth (total or partial) is a property of propositions that have passed certain tests" (UtW 115). This makes truth a complex concept integrating philosophy of language and science. In other words, truth is primarily a *semantic* concept that reflects how the knowing brain conceives of a fact based on its success in a relevant test. Bunge lists four requirements for testing a truthful proposition

[67] The correspondence theory of truth as *adaequatio rei et intellectus* (correspondence of thing and intellect) is attributed to Thomas Aquinas (1994 -85-1974).

successfully: "An empirical datum *e* constitutes empirical evidence for or against a proposition or proposal *p* […] if, and only if -

- *e* has been acquired with the help of *empirical* operations accessible to *public* scrutiny (rather than made up, conjectured, taken from authority, or obtained by allegedly paranormal means);
- *e* and *p* share *referents* (or predicates);
- *e* has been interpreted in the light of some *body of knowledge*;
- some regular association (law or rule) between the properties represented by predicates in *e* and in *p* is (rightly or wrongly) assumed to exist." (UtW 67)

In other words, for the proposition 'medication x cures a certain category of cancer patients' to be true, it has of course to refer to cancer patients and not patients suffering from any other type of disease. In addition, it has to be in line with what cancer is commonly understood to be in accordance with the medical convention. Although simple, propositions are sometimes part of complex theories that we have to retrieve altogether while discussing a simple claim. Therefore, 'what cancer is' and the controversy associated with defining 'cancer theory' is retrieved when we want to verify the simple claim 'medication x cures a certain category of cancer patients.' Although we test the correspondence with reality when we test the truth of statements, we are pushed back to theory by this very correspondence. The farther the demands of empiricism go, the more rationalism gets involved. Let us remember Rescher's position that every "claim conflicts not only with its own denial but also with whatever complex or combinations of claims has this denial as an inferential" (PhR 99). By embracing the integration of ratio-empiricism in the first place, Bunge involves theory in the very correspondence process.

In order to verify the simple claim 'water boils at 100 C°,' we at least need to know the following theories. Understanding water necessitates a good knowledge of chemistry; understanding temperature requires some knowledge of thermodynamics that in turn entails some knowledge of the wider physical theory; and understanding air pressure calls for some knowledge of atmospheric science as it influences the degree at which water boils. Thus, verification of the correspondence of the simple claim, 'water boils at 100 °C,' is anchored in many theories, which involve numerous abstract concepts. It is important to note that Bunge does not repeat the logical positivist correspondence requirement for truth, but still demands it as a partial, though not final, requirement. "Let us not pretend any longer that the truth relation holds between propositions and facts. Let us admit instead that propositions can match other propositions and facts other facts. And let us assume that the correspondence we are seeking is one between mental facts of a certain kind and further facts, whether mental or not" (UtW 119).

The four requirements of correspondence mentioned above deal with individual propositions and not with hypothetico-deductive systems. The reason for this is that "an entire theory is unthinkable for it contains infinitely many propositions. We can think only of a few statements (postulates, definitions or theorems) of any given theory" (UtW 121). Bunge admits that the "semantic truth conditions fail us here and we must resort to entirely different truth conditions, supplied by experimental physics and bearing on the testable consequences of the axiom in question" (UtW 121). A quarter of a century after the appearance of Bunge's book, *Understanding the World*, he admits that the problem of perfect correspondence is still unresolved: "Everyone uses the correspondence concept of truth, but nobody seems to know exactly what it is. Therefore, it behooves philosophers

to elucidate it through a theory proper, that is, a hypothetico-deductive system" (MaM 285). Bunge's stance on correspondence admits that total truth is not attainable, but only 'partial truth.' The reason is found in the many relative properties a thing might have along with the many theoretical elements that engage in the composition of any simple claim. [68]

3.4 Reduction and Integration: The Tree of Knowledge

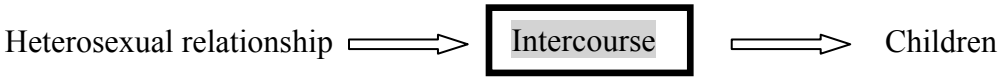
The synthesis of Bunge's critical realism includes positive evidence, lack of negative evidence, internal consistency, viability, and partial truth of correspondence. Its goal is to achieve the unity of knowledge and to explain some of the world's dynamics. As previously noted (# 3.2**)**, Bunge's epistemology is about exploring and understanding. Understanding characterizes things, their states and processes within time-space, while providing reasons for their causes and explanations for the mechanism of their overall behavior within their systems. A detailed characterization of understanding can be summed up from chapters of Bunge's *Understanding the World* in the following way: understanding is a systematic account aiming at the reduction and integration of things in the world and their relations, which leads to prediction and control based on an evaluation of truth indicators.

This means that explanation is the core of epistemological understanding. Bunge distinguishes three types of explanation, which he calls the black box, the grey box, and the translucid box (UtW 7-10). The following example might clarify why only the translucid box offers a satisfactory explanation for any phenomenon. Most children between the ages of 7 and 12 know that human reproduction happens only through

[68] Bunge's 'partial truth' depends on his views of the highly technical issue of semantics, which cannot be analyzed here. It has been criticized by many scholars, for example by David Miller, "Bunge's Theory of Partial Truth Is No Such Thing", *Philosophical Studies* 31/2 (1977), 147-150.

heterosexual couples. They can infer that their older sisters, their aunts, or female neighbors never had children until they got married or started a relationship with a man. Yet, the coming together of a male and female in the same room is not a sufficient explanation. It is rather a black box explanation: an event A happens; afterwards, an unknown mechanism occurs that leads to the outcome B, drawn in the following way:

Unlike these children, adults know that sexual intercourse is responsible for reproduction, not marriage as such or just living together. However, this better understanding still does not solve the problem that some couples do not succeed in having children even after intercourse. This could be seen as a grey box, because it brings us close to what happens in reality, yet without clarifying the picture and making it a translucid one. This can be illustrated by the following figure:



Even the best medical doctors and biologists were in the grey box until the discovery of the DNA mechanism by Crick and Watson in 1956. With the aid of this translucid box explanation, we came to know how the male and the female characters are fused together, with some modification, in order to generate the first cell of a baby. This is a satisfactory explanation as it goes to the depth of how reproduction happens. Bunge calls it a 'mechanismic' explanation (UtW 21).

Of course, someone's translucid box might be someone else's grey or even black box. This happens when an explanation provides the initial problem for more advanced

research. For example, we still do not know the exact behavior of every single molecule in the DNA formation process. We also do not know the quantum mechanics process within every single atom that composes every single molecule in real time. Reaching such a level of accuracy and complexity might then help eventually to predict the genes of the child even before birth.

Bunge is aware of the incompleteness of every proposed mechanismic explanation, whatever the level of complexity is. The reason is that "every explanation, if properly analyzed, will prove to be incomplete in failing to explain, with total accuracy, every feature of the object of explanation" (UtW 14). This pertains not only to a black box type of explanation, but also to the differentiation of equally detailed translucid explanations. Bunge's responds to this case: the "best of two roughly equally accurate and equally general accounts is the deeper, and the best of two equally deep accounts is the more accurate and general one" (UtW 24). He adds: "A theoretical account is the better, the wider its coverage of facts, the more accurate, and the deeper" its explanation (UtW 24).

Thus, there are three criteria for differentiating between various explanations: range, accuracy, and depth. Range refers to the coverage of *content*, accuracy refers to the differentiation between various *elements*, and depth refers to the exploration of *layers*. For example, sociology is more *comprehensive* than political science as it includes wider economic and psychological domains. In addition, scientific psychology is *deeper* than Freudian psychoanalysis as it goes to the neurological and endocrinal bases of behavior that were unknown in Freud's time. With regard to conceptualization of the meaning, logic is more *accurate* than syntax. The sentence 'he is dead and alive' does not violate

any syntactic rule. Yet, it is a contradictory sentence from a logical point of view. Logic has more tools than syntax for getting into the content of concepts.

A successful epistemology has to account for the relationship between the various things in the world. A random list of animals does not offer a biological understanding, whereas a tree of the animal kingdom that offers a deep ramification for most animals, alive or extinct, is a form of understanding. Let us recall Rescher's statement: "In chess, we cannot play rooks independently of what we do with bishops; in medicine, we cannot treat one organ independently of the implications for others; in political economy, we cannot design policies for one sector without concerning ourselves with their impact upon the rest" (PhR 160-161; see above, # 1.2).

According to Bunge, understanding as explanatory account is supposed to offer integration and reduction. Integration is the heavy burden of the world on human cognition. For centuries, intelligent minds were satisfied with seeing the human body disintegrate after death and turning into something inanimate, just like the soil it is buried in. If reduction and integration refer to explaining a whole in terms of its parts and vice versa, then this should provide us with some clues concerning the secret of life. Integration in this case seeks to integrate inanimate and living beings in a gradual scale by seeing the commonality in chemistry and the difference in DNA self-regulation, among many other things.

Conversely, reduction is one of the main tools to move down the line of evolution achieved through integration. The following provides a summary of the reductive program for the five major levels of reality, i.e., sociology, psychology, biology, chemistry, and physics (see above, # 2.4). The reduction of *social* phenomena by learning

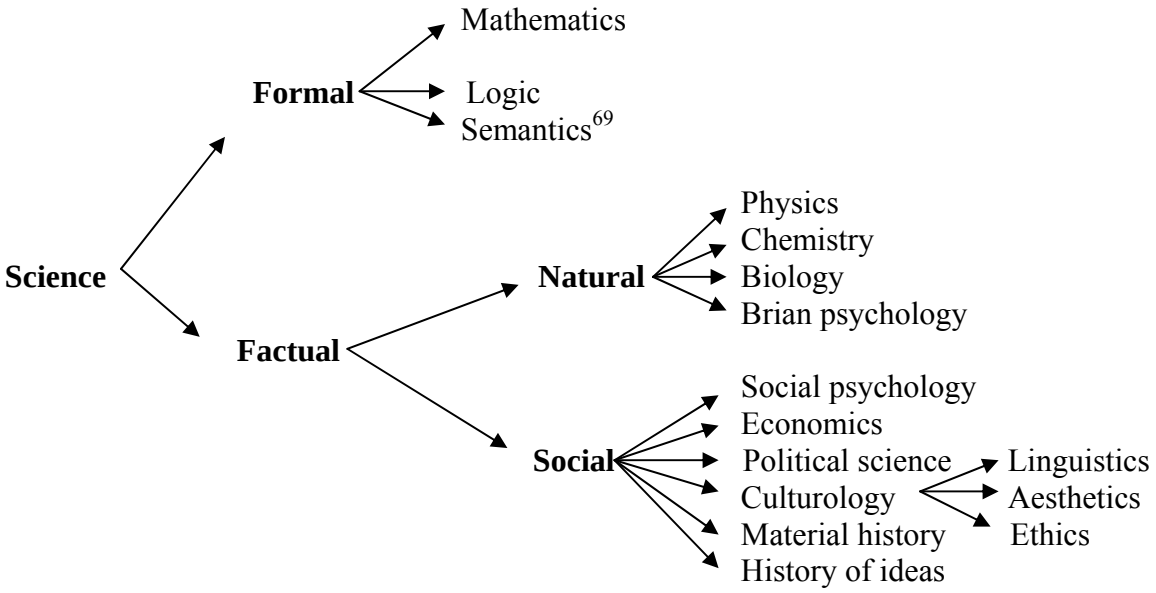
its origins in the individual's consciousness and behavior is rooted in *psychology*. The reduction of *psychology* by learning its origins in psychobiological needs and wants is rooted in biomatter or *life*. The reduction of *life*, by learning its origins in the cell, is rooted in *chemical compounds*. The reduction of *chemical* elements and compounds, by learning their origins, is rooted in *physics*. The reduction of *physics* by learning its origins in subatomic particles is rooted in *energy*. This reductive program is still far from completion. The way reduction achieves the integration of sociology, psychology, biology, chemistry, and physics is based on the premise that any compound thing can be explained by the dynamics of its components: a sentence can be reduced to its words and a word to its letters; a society can be reduced to its individuals and to the relations that hold them together; human individuals can be reduced to the biological systems that substantiate their behavior instinctively, such as health, and emotionally, such as love and trust. Although fruitful, the concept of reduction is derogatory rather than a sought-after goal of research in many current circles of philosophy. Sometimes, accusing a particular philosophical project as 'reductionist' is enough to belittle its achievements, and saying that a philosopher is a reductionist might be as bad as saying that s/he is an irrational philosopher. The reason for this might be the many failed reductionist projects. One failing reductionist project, according to Bunge, is the "computationist" one: based on the analogy between the computer and the human mind, it assumes that all brain activities are algorithms. The problem with computationism, Bunge points out, is that the brain is endowed with neural plasticity capable of changing response with reference to experience and engaging in creativity. Such neural plasticity is the wiring and rewiring of neural synapses which are not as fixed as they are in computers. In addition, the alleged

algorithms in the human brain have not been discovered. Still, the fanaticism or failure of some reductionist projects does not mean that no reductionist project could ever succeed (EaC 151-2).

For Bunge, a proper reduction "results in a deeper understanding, in all cases it unifies fields of inquiry" (UtW 31), because it involves explanation that enhances knowledge. Therefore, no one needs to fear reduction since "only bad science is the enemy of good philosophy, and bad philosophy the [alleged] rival of good science" (EtW 11). Reduction is not a threat to phenomena such as human consciousness or emotions, since "explanation dissolves mystery but need not remove marvel" or wonder (UtW 15). In this regard, Bunge maps out three contemporary attitudes concerning reduction. The first is *antireductionism*, for which phenomena are viewed as "unrelated compartments" or hardly communicating fields (UtW 41); this impedes research concerning the relations between distinctive fields. The opposite extreme is *ontological reductionism*, such as physicalism, which treats all phenomena as "different sectors of the same whole" (UtW 41); such a path is unproductive. Between antireductionism and ontological reductionism stands Bunge's *ontological emergentism*, for which reality is a telescopic system in which every higher level is composed of things that possess some emergent properties characterizing lower level things (UtW 41 & 173).

Whatever the number of failing political theories of the past may be, this should not prevent us from continuing to study, theorize, and make sense of politics. The same holds for reduction as an inescapable tool of unification. Reduction is "far from impoverishing," since the unification it achieves between the upper and lower levels of complexity serves to "enrich both the reducing and the reduced field of inquiry" (UtW

31). Therefore, one should not dissolve levels of existence in a single principle on the one hand, and one should not seek to disconnect interrelated parts of the world on the other hand. In Bunge's words: "Just as the variety of reality requires a multitude of disciplines, so the integration of the latter is necessitated by the unity of reality" (UtW 42). One of the fruits of Bunge's integration of the levels of reality through emergence is the potential mapping of current human knowledge. Consequently, this systematic epistemology should assist us in understanding the modern worldview in order to present a background for the comparison with modern Islamic philosophy (see below, # 5). This partial assistance resides in answering the big epistemic question, which confused many secular philosophers: i.e., *what is the current tree of knowledge: natural, formal, social, and human*? From the several instances where Bunge classifies the branches of knowledge (PST 27; EtW 190; EGR 190), the following unified tree of knowledge can be sketched:



Bunge equates justified human knowledge and science in the widest sense because all proper knowledge should be in harmony with, and rooted somehow in, nature. An

[69] Attention is paid by Bunge to this branch in the course of the evolution of his thought. See EtW 190.

integrated epistemology cannot settle with disciplinary contradictions or an unbridgeable chasm between human and natural sciences. Here, Bunge is in the footsteps of the Enlightenment project that dealt with knowledge in a unified manner. For instance, Bunge notices that Condorcet, "the founder of modern political science," declared in 1782 in a speech at the Académie Française that moral science "must follow the same methods, acquire an equally exact and precise language, [and] attain the same degree of certainty" (SSuD 10) as the natural sciences.

Bunge's tree of knowledge or total system of human knowledge is based on the classification of truth as factual and formal or fictional; the latter is the domain of logic, of mathematics, and of formal semantics. Factual knowledge studies natural or human facts, which are not products of pure imagination. Natural facts (atoms, compounds, cells, nervous systems) are studied by physics, chemistry, biology, and brain psychology. The latter discipline connects to the other grand branch of knowledge, i.e., social sciences, as we move to social psychology. This connection is seen initially in the fact that the human self has bio-needs explained in natural sciences and psycho-wants analyzed in social sciences, i.e., social psychology, economics, political science, culturology (subsuming linguistics, aesthetics, and ethics), material history, and history of ideas. Bunge sees social psychology as "the 'socionatural' (or biosocial) science that studies the impact of social relations on the individual, and the reaction of individual behaviour to society" (SSuD 41). In this regard, the self's bio-needs are universal and therefore cross-cultural, since they are rooted in the basic relevance of life and health, while the self's wants are culturally relative, since they are rooted in psycho-cultural aspects relevant to happiness.

Breathing, for instance, is a need rooted in human biology and hence universal, while enjoying raw seafood is cultural and may make some people happy and others unhappy.

Needs and wants not only bridge brain psychology (a part of natural sciences) with social psychology (a part of social sciences); it also helps in explaining the relation of social psychology with economics, since needs and wants are partially motivated and satisfied in the domain of economics. In turn, economics "is about people organized into economic systems - systems whose specific function is the production or trade of commodities" (SSuD 107). What cannot be satisfied through economics can be achieved through politics, for instance cooperation and competition with regard to the management of wealth. In this line, Bunge defines "politology" as "the scientific study of power relations in and among social systems" (SSuD 155). A clear demarcation between economics and politics does not take place in Bunge's epistemological tree of knowledge, perhaps because Bunge thinks that political and economic systems, like other related systems, may be distinguished, but not separated.[70] Accordingly, one may say – based on Bunge's reliance on the primacy of needs and wants of the self in the social domain – that whereas the satisfaction of needs and wants in the economic domain is achieved by already acceptable rules of peaceful exchange and production, conversely the satisfaction of needs and wants in the political domain is achieved by utilizing power, whether coercive, competitive, or cooperative over wealth. The demarcation between economics and politics might consist for Bunge in the explicit use of power in the political domain, and the implicit use of already existing power in the economic domain.

The initial point of analysis here is the brain psychology of needs/wants that bridges natural and social sciences with its implications for economics and politics up to

[70] I am grateful to Dr. Michael Kary for bringing this possibility to my attention.

ethics (more on this below, # 4). Individual needs and wants generate not just the wealth of economics and the power of politics, but also culture. Following the tree of knowledge sketched above, culture is rooted in brain processes documented in language, aesthetics, and ethics and materialized in architecture, arts, or laws.[71] Aesthetics includes artistic and literary forms of human creativity (aesthetics is the part of human knowledge Bunge tackles the least). The cumulative process of individual, economic, political, and cultural activities forms urban geography and archeology, and the bulk of everything material built by humans is studied in turn by material history. Conversely, all of the seemingly immaterial objects associated with individual, economic, political, and cultural activities of the past form the history of ideas, which includes religions, narratives, ideologies, and also all the failing attempts to understand reality, i.e., pseudosciences. Bunge attempted to apply his scientific worldview to ethics, a subject which will be addressed in the following chapter.

[71] "Culturology," as Bunge calls it, is "the sociological, economic, political, and historical study of cultural systems, or cultures in the narrow or sociological sense of the word" (SSuD 220). The analysis presented here takes culturology as part of sociology and not identical with it.

Chapter Four

Ethics: Knowing the Good and Doing the Right

Bunge's ethics is best understood in the light of secular humanism with its emphasis on the human self as a subject of reflection and action. An axiomatic expression, 'Know thyself', has remained a central tenet of western thought ever since Socrates. Originally, however, it did not mean know about your inwardness and psychological inner life. Rather, the famous oracle at Delphi, 'Know thyself,' means: know that you are a human being, not a god, and behave accordingly! Learn how to remain in your proper place and do not consider yourself a god![72]

Based on its emphasis on human knowledge and experience as the crux of the individual and socio-political order, modern humanism developed the notion of humanist ethics in response to the theist worldview.[73] Ethics, of course, is a significant component of most religions, and all forms of ethics might seem to be derived necessarily from religion, particularly on account of the domination of Christianity in the West. Contrary to this widely held opinion, contemporary humanist ethics is a fulfillment of the comprehensive humanist project that seeks to extend the debate with the religious worldview from the realm of epistemology and ontology to the domain of ethics. Humanism is not only an epistemological call for rationalism and empiricism (in contrast to dogmatic submission and convoluted thinking) and an ontological call to nature (in

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[72] This originally religious meaning has been emphasized by Jean-Pierre Vernant in "De l'homme de nature à l'homme de raison: L'homme grec, la parole et la raison," an interview by Jeannine Delaunay broadcast on February 18, 1988, by Radio-Canada FM (100,7). See also J. Defradas, "La sagesse delphique," chapter 3 of J. Defradas, *Les thèmes de la propagande delphique* (Paris: Klincksieck, 1954), 268-283; Michel Foucault, *L'herméneutique du sujet: Cours au Collège de France 1981-1982* (Paris: Gallimard & Seuil, 2001), 4-16 & 36; P. Courcelle, *Connais-toi toi-même, de Socrates à saint Bernard* (Paris: Études Augustiniennes, 1974), 3 volumes, and Edward D. Sherman, *Reforming the Self: Charles Taylor and the Ethics of Authenticity*. M.A. thesis in religious studies, McGill University, 2001, v + 98 p. (roneo).

[73] Paul Kurtz, *Forbidden Fruit: Ethics of Humanism* (New York: Prometheus Books, 1988), 17.

opposition to the supernatural); it is also a call for rationalist/naturalist ethics in contrast to some of the irrational/unnatural aspects of religious ethics.[74] A comprehensive scientific worldview is central to what humanist ethics strives to accomplish.

4.1 Scientific Humanism

In Bunge's words, scientific humanism may be spelled out in the following seven theses (see PiC 14-15): 1- *Cosmological* (or ontological): whatever exists is either natural or man-made. Put negatively: there is nothing supernatural in the real world. 2- *Anthropological*: individual differences among people are less important compared to the common features that make us all members of the same species. Put negatively: there are neither supermen nor master races. 3- *Axiological*: although different human groups may care for different goals, there are many basic universal goals such as wellbeing, honesty, loyalty, solidarity, fairness, security, peace, and knowledge that are worth working and even fighting for. Put negatively: radical axiological relativism is false and harmful. 4- *Epistemological*: it is possible and desirable to find out the truth about the world and ourselves with the sole help of experience, reason, imagination, criticism, and action. Put negatively: radical skepticism and epistemological relativism are false and noxious. 5- *Moral*: we should seek salvation in this world through work and thought rather than prayer or war, and we should enjoy living and try to help others live, instead of damning them. 6- *Social*: liberty, equality, solidarity, and expertise are the major assets for the management of common wealth and its achievement. 7- *Political*: while defending the freedom to practice or not to practice religion and political liberty, we should work for

[74] P. Kurtz, *Forbidden Fruit*, 16.

the establishment and/or maintenance of a secular state, as well as for a democratic social order free from inequalities and technical bungling.

In these theses, *cosmology* (or *ontology*) emphasizes human nature as a bio-psycho-social system (*anthropology*) and expands the derived equalities of the members of such a system. Although focused on nature, cosmology is still centered on human being. Additionally, *axiology* and *morality* are derived from an *epistemology* that provides the possibility to find out the truth about the world and ourselves and to guide us towards discovering basic universal goals and seeking salvation in this world. In other words, epistemology has a functional humanist role with regard to ethics. Finally, secular humanism reaches the peak of its goals *socially* and *politically* by forming a democracy that is the integration of liberty, equality, solidarity, and expertise in the management of common wealth. This gives scientific humanism its public program as a social movement, not only as an academic philosophy. Bunge's humanist ethics is neither an ideological justification of the 'will to power,' nor a dogmatic discourse about intuitions, conventions, creeds, and partisan vested interests. Bunge's ethics is scientific because its ontology is based on scientific findings and its action on current technological progress. It is humanist because it grounds its epistemology in ratio-empiricism and its relevance in human welfare. The next section presents the evolution of the naturalist basis for a humanist ethics.

4.2 Naturalist Interpretation – A Quick Survey

In late 2009, a human fossil called Ardi dating back 4.4 million years, was discovered in Ethiopia, and preliminary speculations date human origins to some 7

million years.[75] Within that period of time, the hominid evolved to bipedalism with its brain size showing a gradual increase in size compared to chimpanzees (IdFF 22). These speculations about human origins are corroborated by genetic evidence. "It is known that the basic mutation date in DNA is 0.71 per cent per million year. Working back from the present difference between chimpanzee and human DNA," the result is 7 million years (IFF 22). Despite this very long period of time, *Homo sapiens* and its civilization and culture are rather recent phenomena.

Current archeological research reveals that humanity started to move from the primitive hunter/gatherer lifestyle to the sedentary lifestyle just after the last ice age around eleven millennia ago (GGS 111). This move pertains to the foundation of nearly all civilizations. Domestication of wild plants and animals taking place in only a few regions offered an adequate amount of food surplus to sustain larger populations, which in turn allowed for the division of labor leading to the stratification of society (GGS 269) and to reliance on animals for transportation, plowing, and utilization of several products. Social stratification, in which a large percentage of the population is dedicated to sustain a smaller percentage of non-food-producing individuals, exempted some individuals from dedicating their time for hunting, herding, or working in the field and led to the emergence of a class of people enjoying more time to engage in cultural activities such as poetry, prayer, ritual, education, mathematics, or natural observation. The invention of writing, the emergence of complex cultures, and the use of basic technology (for instance home construction, pottery, or metallurgy) were all consequences of plant and animal domestication, food surplus, and social stratification (GGS 86).

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[75] This discovery was reported by Rex Dalton, "Oldest hominid skeleton revealed", in *Nature* (October 1st, 2009); see http://www.nature.com/news/2009/091001/full/news.2009.966.html

After the last ice age, few millennia passed before the crystallization of the basic elements of spiritual human culture around 3500 BC. According to Peter Watson, the following three components gradually spread to nearly all human communities: 1- a growing awareness of the natural rhythm of life and death and its hidden powerful force; 2- reference to some immaterial human properties (commonly called 'soul'); and 3- concerns for what is usually called 'afterlife' (IFF 66-67).

There is well-spread archeological evidence of the great Goddess and the Bull during the Megalithic era (IFF 66); the former symbolized the mystery of birth and the regeneration of nature every year with the return of the sun as the female principle, and the Bull symbolized the male principle and the idea of a sacred landscape located in human environment. Both indicate a time when the *biological rhythms* of humans and the *astronomical rhythms* of the world had been observed with a mysterious sense but not fully understood (IFF 66). The number of gods grew and multiplied to represent many observed forces of life, for example, the god of wind, the god of fire, or the goddess of fertility. These forces were seen as responsible for generating day and night. Hence, the sun and the moon acquired sacred status. The movement of the sun, its constant disappearance and return, and its role in shaping the seasons and making things grow, would have been both self-evident and yet mysterious to everyone (IFF 101). By night, the sheer multitude of stars, the strange behavior of the moon, its waxing and waning and its link with the tides and the female cycle, would have been possibly more mysterious (IFF 101). These rhythms, the very notion of periodicity, or what may be called the engine of the world, were the basis of primitive religions as expressions of a dominant

causality system managed by a powerful force identified as the Bull and the Goddess, and then as the God of the sky or simply as 'the One up there.'

Reference to some immaterial properties commonly called 'soul' was probably dependent upon the following altering states of brain consciousness:[76] dreams, drug-induced hallucinations, and trances convinced early humans that there is a 'spirit world' elsewhere (IFF 37). Some individuals under any of these states may leave their bodies, go on journeys, sometimes see dead relatives or loved ones, and feel that the dead are still alive somewhere (IFF 102). These states of consciousness, along with experiences of inner speech, suggested a disembodied or immaterial truth-telling, a universal state of consciousness called 'soul.' Many functions in religious ethics were attributed to the emotionally constructed concept of the soul, in harmony with the former concept of a powerful force controlling the world.[77] For example, there is a belief in Islam that the human soul originates in Allah, the 'One up there,' and will go back to him, and also that the soul can have an inner conversation with Allah and be inspired through contemplation.

The third idea to appear in the ancient world-view, the afterlife, has been inferred from a variety of distinct observations. The sun and the moon both routinely disappear and reappear, which signifies a rebirth; many trees lose their leaves each year and get new ones when spring comes (IFF 102). The same happens to many species of insects

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[76] This hypothesis was attributed to the British evolutionary anthropologist E.B. Taylor in his *Primitive Culture* (1871). For a concise introduction see Daniel L. Pals, *Eight Theories of Religion* (New York: Oxford University Press, 2006), 20.

[77] There are some exceptions to such a general statement: for instance, Robert Hueckstedt, Professor of Sanskrit at the University of Virginia, brought to my attention that even the soul is a mode of matter in Jainism.

which disappear in the winter and emerge out of nowhere in the spring. Such apparent post-mortem existence in the natural world culminated in the notion of afterlife. Death, according to early beliefs, does not necessarily end the existence of the abovementioned creatures; it is just a stage in their life, and humans also might go through a similar process.

Understanding these three ancient ideas – the rhythms of the world and its symbolic powerful force, the soul, and the afterlife – is necessary to conceive how ethical imagination is evolving throughout time under new experiences, conceptualizations, and social conditions. For example, the rhythms of the world were under the control of the 'One up there,' who is considered to possess omniscient knowledge and infinite power over the things of the world and their ways of existence. He is the supreme mover. The human being, as one of these created things, is believed to be under his control and therefore this supreme mover legislates and dictates values and norms. Cohering with the past perspective, the soul was that dimension in the human being capable of functioning as consciousness and of sensing right and wrong because of its relations with the 'One up there.' Finally, the life of the soul after the physical death of the body, i.e. afterlife, is the end stage for reward or punishment and gives meaning to this world, whereas a purely vanishing life seems purposeless and frightening. Although seemingly primitive and mythical to the contemporary scientific mind, the history of the human worldview is naturalistic *par excellence* in both its components and dynamics. It is naturalistic in that it seeks to understand and coexist with the nature of human beings and their environments regardless of the level of articulation it attains. A more naturalistic worldview updated through modern science and philosophy, it does not abandon the long lived human ethical

traditions but rather appropriates and enhances its overall structure. John Dewey notes that "If so much flexibility has obtained in the past regarding an unseen power, the way it affects human destiny, and the attitudes we are to take toward it, why should it be assumed that changes in conception and action have now come to an end?"[78] Being an ancient worldview, the rhythms of the world, the soul, and the afterlife, do have a modern update that deserves full discussion. This brief presentation of the evolutionary basis of religious imagination is pivotal for showing the general basis of ethics as derived from the understanding of nature and the role of human reason in it. The following section will explain Bunge's scientific humanist ethics.

4.3 Scientific Humanism and the Structure of Ethics

Bearing in mind the ontological worldview (# 2) and the humanist stance (# 4.1), Bunge's ethics is "a matter of life or death rather than a subject of academic interest," especially in the present age of nuclear armament when "for the first time this may be the last time" (EGR xiii). Bunge treats ethics with the utmost existential attitude a thinker may possess, and he rebukes the tendency of some analytical philosophers to limit themselves to analyzing ethical concepts and ethical language (EGR 2). He sees his endeavor as continuing the legacy of "Plato, Aristotle, Aquinas, Hobbes, Locke, Spinoza, Hume, Bentham, Mill, and Marx" who considered "ethics as having an intimate relation with social and political philosophy, hence, with collective action, in particular social reform" (EGR 2). Accordingly, he is fully aware of current ethical issues such as the "civil rights movement, the fight against poverty, and the environmentalist peace

[78] John Dewey, *A Common Faith* (New Haven, CT: Yale University Press, 1980), 6.

movement" (EGR 2-3); these social goals are part of his framework for an ethical theory (see below, # 4.5**)**.

Bunge is not indulging in slogans and academic discussions of doctrinal dualities such as absolutism/relativism, monism/pluralism, objectivism/subjectivism, emotivism/cognitivism, conservatism/reformism, religionism/secularism, or individualism/holism. Rather, he seeks to clarify ethics itself. For him, a theory of ethics is composed of three sub-theories: axiology, morality, and action theory: "Axiology is centrally concerned with the *good*, morality with the *right*, and action theory with actions that are both *efficient and right*" (EGR 5). Axiology examines and distinguishes between good and evil goals; morality examines and distinguishes between right and wrong norms as derived from the axiological goals; action theory helps in performing efficient actions that best suit the norms and the goals. For Bunge, ethics is *the study of values and the efficient application of norms*. Accordingly, every single ethical action entails three dimensions: a goal, a social code, and an application for the merger of both goal and social code. A goal is a psychological intention or cognitive objective seeking achievement. A social code is made out of norms that determine explicitly or implicitly the validity or invalidity of an action based on some goal in the social domain. A proper application of the goal in the relevant social code (norm) of a given situation often brings about modifications in the combination of goals and norms, i.e. efficiency. To be ethical in the scientific humanist context means to examine, construct, and abide by good aims, right norms, and efficient actions. Let us explain this in more detail.

4.4 Values in Scientific Humanism

According to Bunge, value theory is mainly concerned with the notions of 'good' and 'evil' prior to the investigation of moral norms regarding 'right' and 'wrong.' "Good is […] conceptually prior to the right," as he puts it, since a right action is the one promoting the good, whereas a wrong one promotes evil (EGR 2). Hence, the guidance of the good is necessary to do the right, and the misguidance of the evil, to do the wrong. The priority of good over right, however, is not enough to distinguish right from wrong, which is the specific task of morality. What is the nature, content, and structure of values?

4.4.1 Nature, Content, and Structure of Values

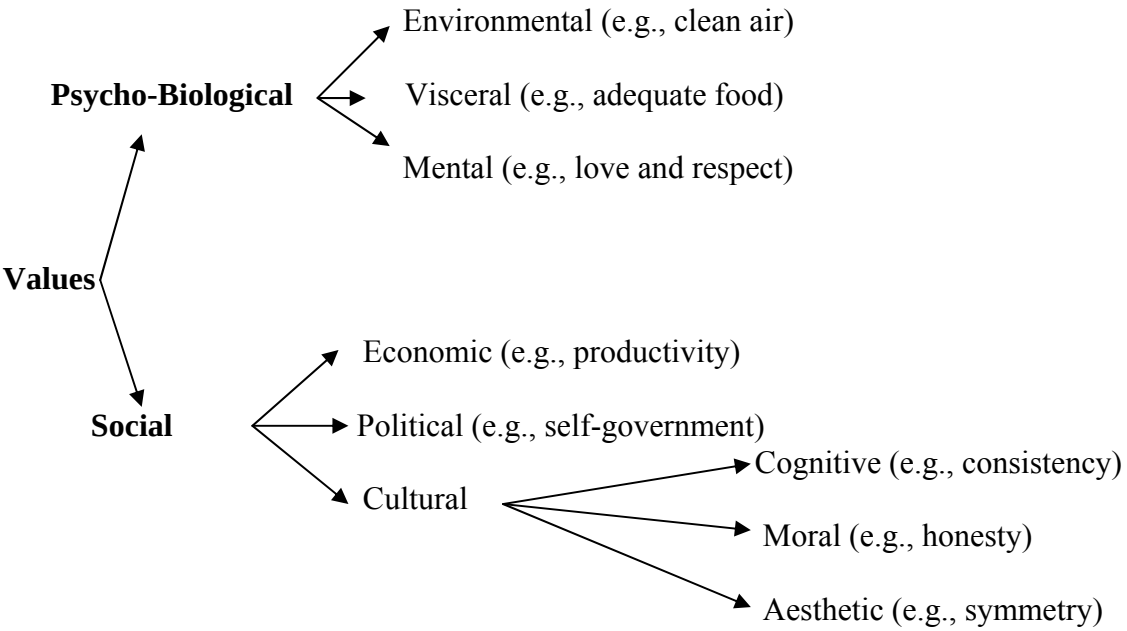
The answer applies also to morality, since for Bunge values and morals "are relational or mutual properties" (EGR 13) of some material thing or process rather than of an independent self-existing object. Values and morals "do not exist in themselves" (EGR 11), but only in relation to something else; before the emergence of living organisms, there were neither values nor morals. Goals "emerged on our planet about four billion years ago together with the first organism capable of discriminating what is good for them" (EGR 13). Although such biological foundation is reasonable, the intentionality Bunge attributes to all biological beings can be as simple as moving forwards to reach food, or moving away from hostile environments. Many living beings do that in an instinctive or programmed (neurally prewired) manner, rather than according to a cognitively flexible manner. Therefore, Bunge's statement can be modified and applied not to all living beings but particularly to members of the animal

kingdom, whose neuro-endocrino consciousness enable them to perform some evaluation and discriminate what is good for themselves. Such modification is in line with Bunge's logico-mathematical definition of value: "*a* is valuable in *respect* to *b* for *organism c* in *circumstance d* with *goal e* in the light of the body of *knowledge f*" (EGR 15). According to this definition, value (*a*) never exists in itself; it must have relational properties (*b*, *d*, *e*, *f*) in its relation to organism (*c*). To emerge, a value necessarily needs a living organism capable in some circumstance of forming some goal based on some knowledge.

The difficulty in understanding the nature of value resides in perceiving it as a *conjunction of temporal elements* rather than as a self-existing *independent* or *permanent* entity. To be sure, "there are only valuable or disvaluable objects […] for some organisms in certain states" (EGR 11). Hence, "'good' and 'bad,' 'right' and 'wrong' [are treated] as *adjectives* not *nouns*," since these words denote the mutual (relational) properties of objects and organisms, not particular entities as such (EGR 3). This understanding of the nature of value is the opposite of the Platonist or Idealist position that perceives good in itself. "In the real world there are no values in themselves, anymore than there are no shapes or motions in themselves" (EGR 13). "Likewise, there are no morals in themselves. Instead, there are animals which, when behaving according to certain patterns, contribute to the welfare of other animals" (EGR 11). Bunge has learned this analysis from the *Nicomachean Ethics*, where Aristotle "demolished ontological value absolutism, arguing that man does not know any good in themselves, let alone *the* ultimate good which Plato rambled around: he can only know good actions and good things" (EGR 64). No organism, no needs, hence no values; no society, no social behavior, hence no social values and no need for moral norms (see EGR 11).

Bunge's understanding of value as a relational property is in opposition to both an idealist ontology and the subjectivist tradition. For Bunge, value is objective, though complexly so, since it "is relativistic but not subjective" (EGR 16). Relativism and subjectivism should not be confused since the relative property is still an objective one (# 2.1). Such a complex form of objectivity means that "although we can class *values* (or value functions), we cannot class the value-*bearers*" (EGR 17). According to the variables that relativize value *a* (i.e., respect *b* for organism *c* in circumstance *d* with goal *e* in the light of the body knowledge *f*) one and the same object may be valuable (or disvaluable) (EGR 17). "All values are subject-rooted even though not all of them are subjective. [Likewise] vision occurs only in animals yet they are perfectly objective" (EGR 67). Bunge does not adopt Hermann Lotze's value/fact distinction as totally different and incompatible domains; rather, "value is an abstraction from [the act] of valuation, and the latter as a special kind of facts" (EGR 71). If the act of valuation is a fact, not all facts are values. When rooted in basic needs or legitimate wants, value judgments can be justified or criticized rather than accepted or rejected dogmatically, intuitively, or emotively (EGR 74). For Bunge, "A scientific study of action can bridge the overblown is-ought (or fact-value) gap" (SSud 314). Such a gap can be overcome, which is why he states: "We indulge deliberately and cheerfully in what idealists and intuitionists call the *naturalist fallacy*, for we naturalize some values and socialize others. In this regard, our axiology is in the tradition of such diverse thinkers as the Greek atomists and the Stoics, Aristotle, Spinoza, Hobbes, Bentham, Marx, Durkheim, Russell" (EGR 72). The objectively complex nature of value does not prevent us from classifying

values. The key point is that values are relative to biological and social contexts. The following diagram shows Bunge's classification of values:



For Bunge, there is no such thing as a single value ranking, let alone a single value function (EGR 18). For example, a bouquet and a meal may bear the same price tag; yet, their aesthetic and biological value is not the same and they are hardly comparable according to a single value ranking (EGR 18). Yet, we are still faced with the question, what is valuable? This is a misleading question, according to Bunge. The accurate question is, what are the relational variables (*b*, *c*, *d*, *e*, *f*) that produce valuable properties for a thing (a)?

Valuable or non-valuable properties may help or hinder an organism in two ways: internally (psychologically) and externally (environmentally) (EGR 20). In this approach, Bunge deals with value as a factual phenomenon. Values are considered exclusively with regard to members of the animal kingdom, whose neuro-endocrino consciousness enables

them to evaluate. The roots or sources of evaluation are biological, psychological, and social; therefore, Bunge identifies the three kinds of values: biovalue, psychovalue, and sociovalue:

- Of *biovalue* it can be said: "Let *x* be an item (thing or process) in organism *b* or in the environment of *b*; then *x* is *biologically good* for *b* if and only if *x* contributes to keeping *b* in *good health*" (EGR 22).
- As for *psychovalue*, "Let *x* be an item (thing or process) internal or external in organism *b* endowed with mental abilities. Then *x* is *psychologically valuable* for *b* if and only if *x* desires or *wants x*" (EGR 26). Moreover, given the prior condition of biovalue above, a psychovalue is legitimate or good if and only if it contributes to the long-term health of *b*; otherwise it is illegitimate.
- Finally, *sociovalue* systemizes the definitions of the previous biovalue and psychovalue. Therefore, a social group is *socially valuable* only if it helps its members attain or retain their *good health* and meet their *psychologically legitimate wants* (EGR 32). A corollary to this definition is that the most valuable of all the actual or possible social systems in any given society is the world system, i.e., the one that best serves all of its members and increases the satisfaction of biovalues and psychovalues for the greatest number of people.

Bunge reaches an interesting conclusion with regard to the naturalist analysis of the bio-psycho-social roots of value over other value theories. According to *axiological nihilism* (e.g., vulgar physicalism), all values are fictions. According to *axiological idealism* (e.g., Platonism), values are self-existing; hence, they are absolute and need not be embodied in

material things. According to a *theistic axiology*, God, divine scriptures or institutions are the source of all values (EGR 32). In axiological nihilism, the denial of values leaves the door open for instinctive or power-oriented sources to generate values. As for axiological idealism, criticism or modification of values is impossible, since they are predetermined ideals. The same holds for theistic axiology.

In the human domain, valuable properties originate in *needs* and *wants*, which form all types of values. Biological needs emerge instinctively (by internal and external causes) within the human body and its environment. The same holds for wants that emerge within the neuro-endocrino system, i.e., the psyche and its cultural environment. Biovalue primarily causes *needs*, psychovalue *wants*, and sociovalue is a compatible mixture of supra-individual *needs* and *wants*. The following table exemplifies such needs and wants according to their roots (EGR 35):

Biovalue	**Psychovalue**	**Sociovalue**
Clean Air & Water	Being Loved	Peace
Adequate Food	Loving	Company
Shelter & Clothing	Stimulation	Mutual Help
Health Care	Recreation	Social Security

4.4.2 The Hierarchy of Values

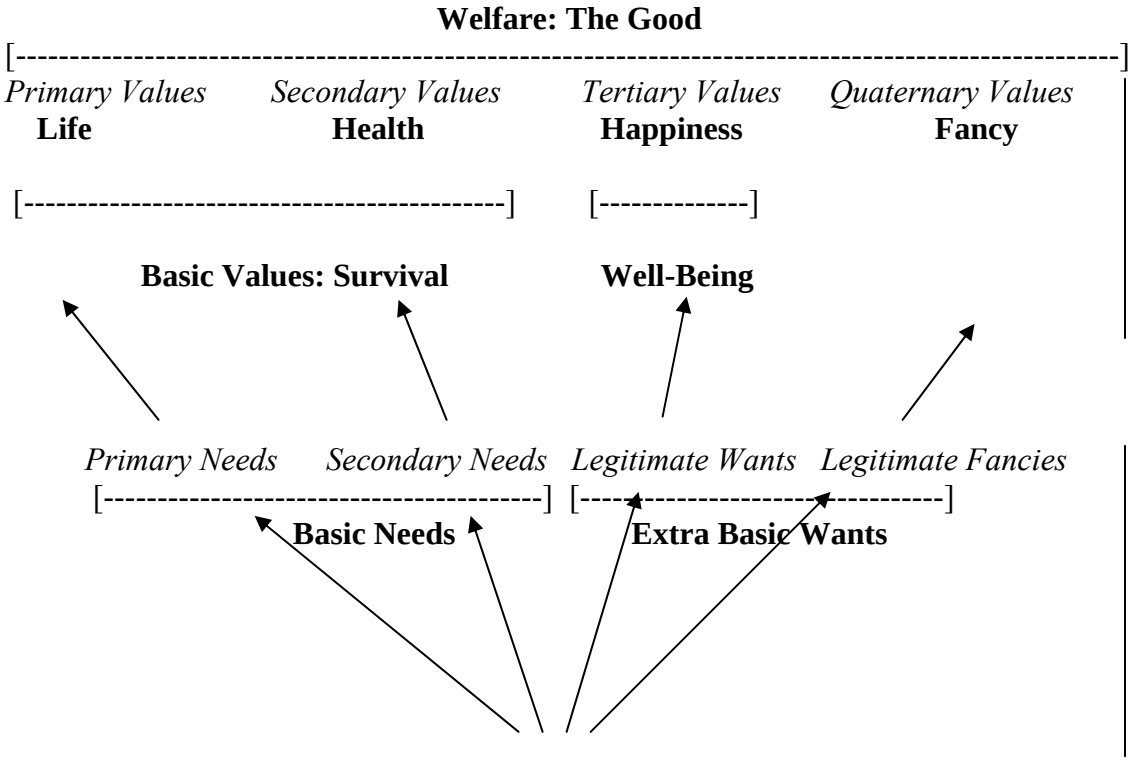
Bunge seeks to conceptualize the hierarchy of values from these sources, distinguishing primary and secondary *needs* and tertiary and quaternary *wants*. Primary and secondary needs are derived from *basic needs,* while tertiary and quaternary wants, although important, are *extra basic*. What makes a need primary is its being necessary to keep the human *alive*, while what makes a need secondary is its being necessary to keep

or regain *health* (EGR 35). Needless to say, a human may stay alive without being healthy; and yet, being alive while being continuously sick definitely impedes human functionality, besides being unpleasant. Thus, the fulfillment of both primary and secondary needs is necessary and therefore is considered part of the *basic* human needs. Still, humankind is not merely concerned with survival and physical health. In fact, personal and socio-cultural wants are not all derived directly from biological roots; they may be the outcome of personal psychological development and social psychology. The person-made reality of psychological wants is totally unrestricted either in relation to oneself or society, contrary to the natural restriction of biological needs. One may want to be a swimmer or a criminal, to love and marry or embrace celibacy, or to be rationally consistent or obscurely inconsistent. Bunge investigates the axiological relevance of a *want*, i.e., its legitimacy. Here, *x* is "a *legitimate* want *b* in circumstance *c* in a society *d*, if and only if, *x* can be met in *d* without (i) hindering the satisfaction of any *basic needs* of any other member of *d*, and (ii) without hindering the integrity of any *valuable subsystem* of [society] *d*, much less that of [society] *d* as a whole" (EGR 35). In other words, psychological wants are legitimate provided they respect the basic needs of oneself and others, and the social integrity that serves these basic needs. Whereas satisfaction of primary needs is a matter of *life and death*, and that of secondary needs a matter of *health and sickness*, the satisfaction of legitimate wants is one of *happiness and unhappiness* (EGR 36). The previous conclusion about basic human needs and extra-basic needs and wants leads us to the hierarchy of values.

A value *x* as a mental process in someone's mind in circumstance *c* can be primary, secondary, tertiary, or quaternary. A primary value is such if it contributes to

satisfying at least one *primary need* of any human in any society; a secondary value is such if it contributes to satisfying at least one of the *secondary needs*; a tertiary value is such if it contributes to satisfying at least one of the *legitimate wants*; a quaternary value is such if it contributes to meeting a *fancy*, i.e., a desire or whim not supported by a legitimate want (EGR 36). Whereas a legitimate want is one that preserves and does not hinder any *basic need* or *valuable subsystem*, a *fancy* does not contribute to this preservation. Yet, it does not lead *by itself* to an illegitimate want.

The full realization of any given value is incompatible with that of some other; hence, "nobody can be completely happy" (EGR 48). For example, the constant seeking of knowledge during one's life could make the sedentary learner physically weak. Conversely, the full attainment of the athletic values could lead to a lack of knowledge. Therefore, the individual ought to be *reasonably happy*, such that she is in a state of well-being and free to pursue her legitimate wants. Thus, according to Bunge, 'good' is a predicate of some object *b* in circumstance *c* for human beings having primary, secondary, tertiary, or quaternary values (EGR 36). To Plato's question, 'what is the good?', Bunge answers that it is a property relative to the satisfaction of primary values (life), of secondary values (health), and of tertiary and quaternary values (happiness) in a harmonious manner. Reversing this statement leads to the definition of evil. This is an objective definition based on the bio-psycho-social roots of values, which are relative and temporal, rather than permanent. This is why there is no good in itself for Bunge. The following figure schematizes the hierarchy of human values and their relationally objective roots:



Human Life in Society (EGR 40)

Whereas wellbeing is the meeting of all basic needs (EGR 44) and happiness is the meeting of all needs and some legitimate wants (EGR 44), welfare is the attainment of both wellbeing and happiness. Primary and secondary values, i.e., wellbeing, are universal and cross-cultural, based on the universality of human bio-psychology, while tertiary and quaternary values, i.e., happiness and fancy, are culturally based and circumstantial due to the particularities of human socio-psychology. In other words, extra basic values are more circumstantial than basic ones; yet, all are relational properties. A consequence of this is Bunge's prioritization of values: "Meeting primary needs (*survival*) ought to precede meeting secondary needs (*health*), which in turn should precede meeting *legitimate wants*, which ought to dominate the satisfaction of *fancies*"

(EGR 48). Each primary, secondary, tertiary, and quaternary value has within itself a bio-psycho-social aspect; there is no hierarchy among the bio-psycho-social values themselves, for they are interdependent (EGR 39).

4.5 The Supreme Good (or the Highest Value)

Thus far we have analyzed Bunge's conception of the ontological nature, content, and hierarchy of values and the definition of *good* as the realization of wellbeing and happiness in society. This axiological theorization systemizes all values and their applications in the economic, political, and cultural subsystems of any society. It is based on the premise that achieving the good is a social enterprise. Therefore, only the right combination of economic and cultural richness with social (distributive) justice can enable us to achieve the highest good (EGR 49). The question is: What are the possibilities that enable humans to do the good? Bunge looks at these possibilities in three cases - namely miserable, poor, and rich societies. A society is *miserable* (M) if and only if it lacks the economic, political, and cultural resources to meet the basic needs of all its members and to secure the wellbeing of all of them. A society is *poor* (P) if it can secure the wellbeing of all of its members but not their legitimate wants. A society is prosperous, affluent, or *rich* (R) if it can secure the wellbeing and reasonable happiness of all of its members (EGR 50). The *actualization* of these possibilities is based on the distribution of economic, political, and cultural resources. Bunge adds another condition: a society is a *just* social structure (J) if each of its members can attain wellbeing or even reasonable happiness without suffering.

In miserable and just societies, everybody falls below the subsistence level, for instance during a famine or a natural disaster. In miserable and unjust societies, everybody is miserable except for a handful of privileged families, for instance in feudal societies in a state of war. In poor and just societies, everybody attains a state of wellbeing, but nobody can satisfy any legitimate aspirations. In the poor and unjust societies, some are reasonably happy at the expense of the discomfort or suffering of the greatest number, which explains for instance why so many young people in these societies risk illegal migration in the West. The same is true of rich and unjust societies, except for those who can achieve reasonable happiness, namely those forming the middle and the higher class. Only in the rich and just societies can everyone become reasonably happy (EGR 51). In the six possible types of societies richness supersedes its opposite unjust one. The only exception is that a poor and just society (*PJ*) is preferred over a rich and unjust society (*RJ*), since people would be happier with justice despite being less rich. Examples of poor and just societies might be Amazonian hunter/gatherers or the Inuit.

This analysis goes beyond the domain of value theory to political ideology and action theory. For Bunge, good values cannot be achieved without struggle and modification of the real world. Ethics is an interactive domain, not something with which individuals should simply abide. Therefore, seeking the highest possibility for *richness* and the best actuality for *justice* are necessary conditions to achieve higher values. This is why economic development and social justice in the widest sense are the grounds upon which mature ethical actions can take place. From this, one may infer that the highest good would consist in attaining the greatest natural richness combined with the most

efficient distributive social justice, i.e. *collective welfare,* and that such a supreme good would enable everybody to attain wellbeing and reasonable happiness. Yet, according to Bunge, the survival of humankind ought to be the supreme good (*summum bonum*). "Everything else, even social justice, comes thereafter" (EGR 59) because for him none of the sought-for values can be achieved without the survival of humankind. Therefore, the immediate necessities to secure the supreme good are universal nuclear disarmament and planetary environmental protection (EGR 59). Although the survival of humankind is the basic prerequisite for the existence of all values, this does not make it the highest good; it is rather a necessary step for achieving a higher good and thus a basic need. As we have shown, Bunge sees the good as a predicate of some object *b* in circumstance *c* for human beings having primary, secondary, tertiary, and quaternary values. Therefore, it is inconsistent to give primary and secondary values – namely the survival of humankind – supremacy by identifying them with the highest good; it would be more consistent with Bunge's own philosophical systemism to view *integral social welfare* as the supreme good (*summum bonum*).[79]

4.6 Morality and Scientific Humanism

When one values something essential to one's life – either by nature or nurture – one normally strives to obtain it (EGR 93). However, the normality of humanly valued objects is conditioned by society, since human groups exist solely because "every human being has needs and wants that can only be met with the help of others" (EGR 95). This explains the emergence of moral culture consisting in codes as abstractions from material processes. Moral culture facilitates the identification and communication problems, and it

79 This critical modification suggested to Professor Bunge in his class (Social Science, winter 2006 at McGill University) has been accepted by him.

also guides rational thinking about them. If every individual were self-reliant from birth there would be no need of sociality, let alone reciprocity or any system of rights and duties made explicit in moral and legal codes (EGR 95). Rather, everyone needs the help of others in order to meet all his/her needs and some of his/her wants and thus realize all of his/her primary and secondary values as well as some of his/her tertiary and quaternary values (EGR 102). Basic needs (for instance, life and health) and their corresponding values are instinctive in every individual and do not need any socially-based knowledge to make the individual aware of them. Yet, this is not the case for norms codifying social reactions to legitimate wants and their corresponding basic and extra basic values. Morality pertains to the best way of living in society (EGR 129); those who fail to comply with norms "succumb early in life" (EGR 121).

Moral norms either help realize or inhibit human values because, like values, they have bio-psycho-social roots (EGR 94). As needs and wants are key concepts in Bunge's value theory, so rights and duties are key concepts in morality. In principle, the relationship between rights and duties is symmetrical, since "every right implies a duty" (EGR 102). Moral rights and duties based on their relation to the bio-psycho-social roots of values form a system of morality illustrated as follows (EGR 100):

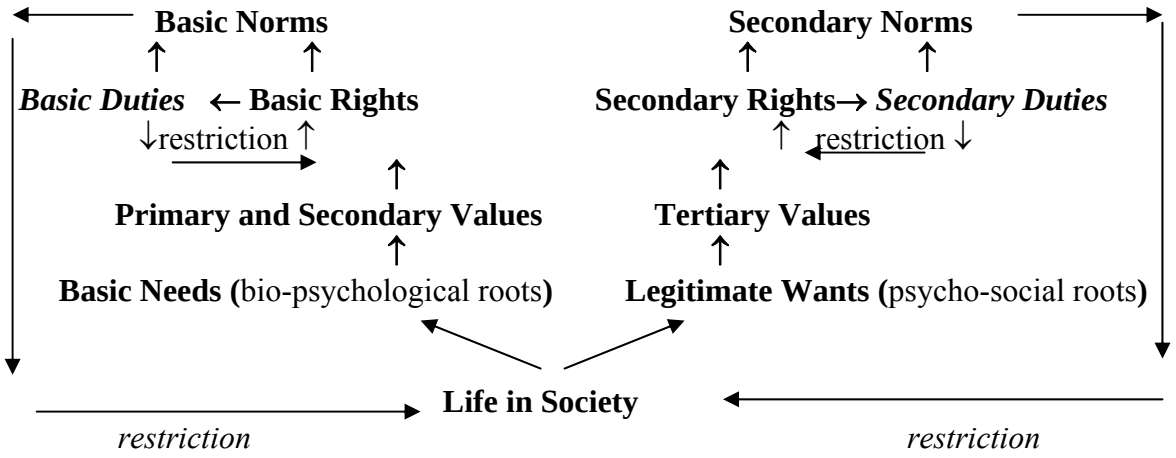
Moral Roots	**An Example of Right**	**An Example of Duty**
1- Environmental	Clean environment	Environmental protection
2- Bio-psychological	Well-being	Help others enjoy well-being
3- → Cultural	Learning	Teaching
4- Social → Economic	Work	Faithfulness in workmanship
5- → Political	Liberty	Popular participation

Bunge views norms as the social actualization of values (EGR 98) in which rights imply duties and vice versa (EGR 101). Primary and secondary values guide corresponding

primary and secondary rights, implying primary and secondary duties. The realm of morality is symmetrical to the realm of values (axiology), whose study is prioritized over against the study of norms (morality). This is because, for Bunge, value theory is centrally concerned with the notions of 'good' and 'evil,' whereas the investigation of moral norms is concerned with 'right' and 'wrong.' "Good is […] conceptually prior to the right" (EGR 2). For a given human being in a society, seeking a thing or a process is a *basic moral right* if it contributes to one's *wellbeing* and *secondary moral right* if it contributes to one's reasonable *happiness*, granted in both cases that one neither jeopardizes his primary rights or anyone else's primary or secondary rights. In precise terms, if *h* is a human being in a society *s*, and *t/p* is a thing or process, then *h* has a basic moral right to *t/p* in *s*, if and only if, *t/p* contributes to the wellbeing of *h* without hindering anyone else from attaining or keeping that same kind of *t/p*; and *h* has a secondary moral right to *t/p* in *s*, if and only if, *t/p* contributes to the reasonable happiness of *h* without interfering with the exercise of the primary rights of anyone else (EGR 97-98). Bunge's precise description of the mutual relation between rights and duties reads as follows (*m* = male, *f* = female living in society *s*; *a* is an action that *m* performs either by himself or with the help of others with respect to *f* without jeopardizing his own wellbeing, and while men and women are equal [*f* = *m*]): if *f* has a primary right to *a* or an outcome of *a*, then *m* has the primary moral duty to do *a* while taking into account that *f* = *m* and given the fact that *m* alone can help *f* exercise her primary moral right to *a* or an outcome of *a*. If *f* has a secondary right to *a* or an outcome of *a*, then *m* has the secondary moral duty to do *a* while taking into account that *f* = *m* and given the fact that *m* alone can help *f* exercise her secondary moral right to *a* or to an outcome of *a* (EGR 98).

Bunge's restriction regarding the fact that 'no one else can perform this duty' could be problematic. For example, if any individual has the primary right to shelter, work, and social security and if the government alone is capable of providing these rights, then it is a primary duty of the government to do so. In addition, if some individuals have the secondary rights to sports, expressing opinions, and seeking leadership positions, and if civil society alone is capable of facilitating these rights, then it is the secondary duty of civil society to do so. If many people can perform a particular duty – for instance blood donation – and no one does, then who is to be blamed? Bunge's position may be modified by basing the necessity to perform duties not on the absence of other performers, which is hard to measure, but on the possibility, and accessibility of doing so, although the latter as well may not be easy to measure. The modification suggested states: if a human being already fulfils her primary rights, i.e., wellbeing, in a society without jeopardizing anyone else's, then she has a *moral duty* to another human if the latter has a *primary moral right* in it and she is in the easiest position to perform such a duty. Equally, a human being has a *secondary moral duty* to another human, if the latter has a *secondary right* in it and no other can perform such a duty more conveniently than she can.

If basic needs and legitimate wants generate rights and corresponding duties, the latter in turn restrict rights (EGR 103). Rights and duties are in a state of mutual balance: the more rights one has, the more duties one would have. The only way to minimize the burden of duties is to lessen the granted rights. The mutual balance of rights and duties in a socially interrelated manner can be illustrated as follows (EGR 104):



In Bunge's humanist foundation of morality, based on bio-psycho-social value theory, moral rights are rights to realize primary, secondary, and tertiary values. Quaternary values, fancy, remain beyond the ken of rights and duties, particularly in a poverty stricken society (EGR 97). The basic norms include rights and duties in primary values, i.e., *basic needs,* while the secondary norms include rights and duties in secondary values, i.e., *legitimate wants*. There are two types of rights: those that I may demand and those that another person may demand from me; similarly, there are two types of duties: those that I may demand and those that another person may demand from me. Is not ethics supposed to resolve moral conflicts in the real world rather than discussing merely abstract schemes?

Bunge's scheme may serve as moderator in conflicts between higher and lower rights on the one hand, and higher and lower duties on the other, and also in conflicts between the two types of duties and the two types of rights in the following way: 1) primary *rights* take precedence over secondary *rights*, so the primary right to shelter supersedes the secondary right to a means of transportation. 2) Primary *duties* take precedence over secondary *duties*; hence, the primary duty to feed one's children

overrides the secondary duty to perform one's daily exercise. 3) Primary *duties* take precedence over secondary *rights*, thus the primary duty of popular political participation supersedes the secondary right of enjoying leisure time with friends. 4) An individual faced with a conflict between primary right and primary duty or secondary right and secondary duty is *morally free* to choose either, subject only to condition 3 above. (EGR 101)

When one is faced with the conflict between the primary duty of protecting forests and the primary right of having heat in winter, one is free to choose either. Of course, reconciliation between conflicting cases is necessary, as long as it is feasible. In this example, one should consume an amount of wood equal to that which is provided by planting new trees every year. Similarly, when one must choose between the secondary duty to pursue advanced studies and the secondary right to have children, one is free to choose either. Again, reconciliation between conflicting cases would be desirable, if feasible. The conflict rules related to particular situations help determine priorities and resolve conflicts between moral norms. Bunge's moral theory is neither absolutely permissive nor individualistic and is set apart from current fashionable liberal tendencies. It is not permissive because whatever rights one gains would be automatically restricted by equivalent duties, in addition to the hierarchic restriction of primary over secondary norms. It is not individualistic either, because both primary and secondary norms are equally derived from the bio-psycho-social sources of values. Rights bestowed upon the individual by society entail social duties too, and the equation between primary rights and primary duties may eradicate the nobility of sacrifice. Bunge does not see any duty that merits the sacrificing of life, since preserving life is the most basic value. However,

voluntary sacrifice is acceptable in relation to a secondary right: one may not seek compensation or scarify one's valuable time for voluntary service to society, but never for one's own life.

To summarize, Bunge's ethics is about good values and right morals. The good is a predicate of some object *b* in circumstance *c* for human beings seeking the fulfillment of needs, i.e., life and health, and the satisfaction of wants, i.e., happiness and fancy. Knowing the good is neither a magical endeavor nor the outcome of supernatural revelation; rather, it relies on understanding needs and wants, and it depends on rationality to devise strategies and tools to achieve these values. In a nutshell, knowing the good calls for exploring nature through knowledge and the constructive intelligence of reason, and thus constructing from within the worldly dimension what John Dewey calls "natural piety."[80] Doing the right is neither an authoritative and obscurely superstitious endeavor nor a matter of anarchic chaos; rather, it is a balance between the rights of fulfilling basic needs and satisfying legitimate wants on the one hand, and the duties derived from these rights on the other. Therefore, it is the realization of a project of social harmonization by which everyone would achieve his/her rights without jeopardizing anyone else's rights. This is why morality for Bunge is neither absolutely permissive nor individualistic. Merging naturalism as a way to explore and test the nature of things with rationality as a way to define, construct, and systemize strategies and tools is for Bunge the way to know the good and do the right. This search for achieving the good in human life is what underlies Bunge's ethics. He refers to this moral theory as "agathonism", from *agathon*, the Greek word for 'good' (PiC 201). It builds upon the

[80] John Dewey, *A Common Faith* (New Haven, CT: Yale University Press, 1980), 25.

greatest value (*summum bonum)* which, for Bunge, is the survival of humankind or, more accurately, *integral welfare*. His maxim, *"enjoy life and help live*" (EGR 104), combines the satisfaction of *wants* (pleasure) with the fulfillment of *needs* (survival), and it harmonizes *needs* with *wants* by making the latter a means to achieve the former. The compatibility between *self* and *other* appears in the second part of the maxim (help live) and is its social aspect, as it synthesizes egoism and altruism, self-interest and other-interest, egocentrism and socio-centrism, autonomy and heteronomy. It may therefore be called *selftuist* (EGR 104). This ethical maxim may thus be improved in accordance with the suggested modification of Bunge's highest value (see above, # 4.5) in the following form: *enjoy welfare and help others fare well*.

4.7 Critical Remarks

Although well-rounded individually and socially, Bunge's value theory still does not answer the following question: what is the value of one's own life? For Bunge, human beings value life because one owes life to parents and to society as a whole; therefore, preserving life is the debt to the ones who brought it into existence and provided it with culture (EGR 38). In other words, Bunge tells us that we live because we are alive. Yet, evaluating life should be something outside life. Life should be a means for a higher goal; otherwise it is the means and end at the same time, a closed continuum. Intuitionists, idealists, and religionists may explain Bunge's self-justifying proposition through the exclusion of the transcendental in Bunge's ontology and epistemology. For Bunge, there is no epistemological proof for the existence of the transcendental, and this

destroys the basis for any sound teleological ethics.[81] For him, a teleological ethics such as the religious one is epistemologically ungrounded. Therefore, we are faced with the following dilemma: a sound epistemological foundation, like Bunge's, generates an unsound teleological ethics. Still, a sound teleological ethics, such as the religious one, is epistemologically ungrounded.

Posing a means/end value system of needs and wants within a closed materialist worldview is a major problem in Bunge's value theory because it seeks to define the good through what is lesser than the good, namely, the fulfillment of needs and the satisfaction of wants. This philosophical bravery may be criticized with reference to the indefinable nature of the good. Bunge chooses instead to establish a scale of what is under the domain of the good, and he may respond to such critique by reversing the argument and declaring that the good is not the defining factor of the highest part of the tree of value derived from bio-psycho-social roots, and that these roots are rather what define the good. Bunge's value theory resembles an engineering design suitable for machines rather than human being and the need for sublime ethical goals.

Defining the good through something less than the good, utilizing less humanized strategies for emphasizing the relevance of values, and justifying life through life are serious problems in Bunge's value theory. Bunge's system cannot avoid tautology. Obsessed by creativity to the point of forgetting that *values are created by human beings*, he sets values as screens between their creators and the world order. The tautology is caused by the forgetfulness of the screen function of values – a forgetfulness similar to

[81] See Paul Kurtz, *Transcendental Temptation: A Critique of Religion and the Paranormal* (New York: Prometheus Books, 1991), 449-477.

that of the eye that cannot see itself except in a mirror, yet does not realize that a mirror is a screen between itself and itself, like value. Bunge tries to clarify his ethics with reference to the maxim: *enjoy life and help live*. This may be in line with Nietzsche's following remark: "Those who know that they are profound strive for *clarity*; those who would like to seem profound to the crowd strive for *absurdity*."[82] Bunge's striving for clarity pertains to merely ignoring why what is called 'the highest value' by Bunge and others cannot be adequately defined (see Boutin 2003, 40-41). This issue was raised within Platonism, more precisely by the Christina thinker Justin Martyr who lived in the second century and borrowed the logical frame of his argumentation from Middle Platonism of his time, possible from the Platonist philosopher Albinus (Grant 1966, 26-29). Of course, the issue at the time was raised with regard not to the notion of 'value,' but with reference to the naming of God. In chapter six of his *Second Apology* (Osborn 1973, 22-3), Justin says: "the Creator of the universe has no name, because he is unbegotten. To receive a name requires someone older than the person who is named?" However, there can be no one and nothing older than the Creator of the universe, a topic often dealt with by the Greek Fathers of the Church. If this is the case, then what a word like that word 'God,' or of the various titles given to 'God' like Father, Creator, Lord, or Master? Are they names? Justin says no. These words are not names; they are "forms of address" (*prosrêseis*), they do not contain in themselves a known or an unknown meaning. 'God' for Justin "is not a name, but an opinion (*doxa*) of something hard to explain." In his work *Didaskalikos* (VI, 10-11) for instance, Albinus employs a similar argumentation when he speaks about the impossibility to use names with regard to the One. For Justin, God is a Thou, not a He- or a She, as some would prefer today. The

[82] Quoted in Aloysius Martinich, *Philosophical Writing: An Introduction* (London: Blackwell, 1997), 1.

second-person category, not the third-person category, is the appropriate one here. The fact that ‘the supreme good’ or ‘the highest value’ (# 4.5) cannot be defined is first of all a *logical* issue: nothing can be higher than the highest value, or more ‘supreme’ than the supreme good. Bunge forgets that as long as this logical issue remains ignored, “there is no ethics possible” (Sloterdijk, quoted above p. 29, note 36).

Chapter Five

Taha ‘Abd al-Rahman and the Spirit of Modernity

Bunge’s worldview, emerged from modern advances in the natural sciences, social sciences, and humanistic thought. The objective of this chapter is to present the implications of Bunge’s worldview for the modernization of Arab-Islamic philosophy, with special attention to the fact that modern culture underlies Bunge’s worldview. One of the best cases of modern Arab-Islamic philosophy is the work of Taha ‘Abd al-Rahman, a systematic thinker with an explicitly religious worldview. Arab-Islamic thinkers in modern times, being removed from philosophy in general, are in a weak position to systematize their criticisms of western thought. The merit of introducing Taha’s thought is not only in his ability as a system builder, but also in that he indirectly summarizes most of the Islamic thinkers’ objections to modernity in his philosophical presentation. Before explaining the work of Taha, we have to inquire first about the meaning of ‘Islamic philosophy.’

There is no consensus on what Islamic philosophy really is, although medieval Islamic scholarship considers as philosophers the authors that read and embraced the Greek philosophical literature, or more precisely what is known today as the Hellenistic forms of philosophy. This position is apparent in al-Shahristani’s encyclopedia of doctrines, sects, and religions with the title *al-Milal wal-Nihal*,[83] and also in al-Ghazali’s famous critique of Muslim philosophers in medieval times.[84] Yet, since philosophy entails a much broader set of activities than Hellenistic ways of thinking, one can be

[83] Beirut: Dar al-M‘rifah, 1993, 487-490.
[84] Translated by E. Marmura as *The Incoherence of the Philosophers* (Provo: Brigham Young University, 2002).

perfectly philosophical without necessarily emerging from the Hellenistic context. Examples of intellectual endeavors that aimed at facing the big questions in pre-modern Islamic culture include mysticism, philosophy of history, and the distinctively systematic field of ethico-legal theory (*usul al-fiqh*).[85] The common attitude of modern western scholarship, which emerged from Orientalism, concerning Islamic philosophy, does not differ significantly from the medieval Islamic attitude.[86] As a result, western scholarship considered 'Islamic philosophy' as a genre of literature dealing with Hellenistic ways of thinking, not an intellectual quality existing in many other forms of literatures. In order to avoid this erroneous conclusion, modern Islamic philosophy is understood here in a more general sense in line with what Rescher views as "systematization" (# 1.2**)** – namely, an intellectual endeavor that deals philosophically with issues pertaining to Islamic cultures in the Arab world since the 19th century. This understanding of Islamic philosophy is thus broader than the content of an Islamic religious worldview. With these distinctions in mind, we must now examine how it is that modernity impinged upon Arabic-Islamic philosophy.

5.1 The Modernization of Arab-Islamic Philosophy

The modernization of Arab-Islamic philosophy has gone through four stages. The first stage is that of non-theoretical reforms (1800-1945), the second stage focuses on philosophical translation and transfer (1945-1970), the third stage is marked by applying

[85] Majid Fakhry is close to this view in his *A History of Islamic Philosophy* (New York: Columbia University Press, 2004).
[86] Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy," *British Journal of Middle Eastern Studies* 29 (May 2002), 7.

philosophical doctrines to native concerns (1970-1990), and the fourth stage is characterized by philosophical appropriation (since 1990).

The modernization of Arab-Islamic philosophy was provoked mainly by the so-called "shock of modernity."[87] This shock came through European invasions of parts of the Arab world as a result of Napoleon's military campaign in Egypt (1798-1801), which was under the Imperial Muslim Ottoman rule at that time.[88] 'Abd al-Rahman al-Jabarti (1753-1825), an Egyptian historian who recorded his observation of that campaign, suggested that the shock was due not only to the military defeat that took place in a Muslim land presumably protected by Allah, but also to the intellectual attitude of the French invaders. In this regard, he writes:

> If any of the Muslims came to them in order to look around they did not prevent him from entering their most cherished places […] and if they found in him any appetite or desire for knowledge they showed their friendship and love for him, and they would bring out all kind of pictures and maps, and animals and birds and plants, and histories of the ancients and of nations and tales of the prophets. […] I went to them often, and they showed me all of that.[89]

Al-Jabarti's positive comments probably refer to the period when Napoleon declared his conversion to Islam,[90] hence prior to Napoleon's artillery shelling of Cairo. The cultural shock carried on through western military and political intrusions was felt long after Napoleon's campaign. The French invaded the western part of the Arab world (Algeria and Tunisia) in the early and mid-nineteenth century, and in the late nineteenth century the British invaded the central part of the Arab world.[91] The cultural shock reached its

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[87] The "shock of modernity" is an expression popularized through the fourth volume of Adunis' work with this title: *al-Thabit wal-Mutahawwil fi al-Turath: Bahth fi al-Ibda' wal-Ittiba' 'Ind al-'Arab* (Beirut: Dar al-Saqi, 1994).
[88] See Albert Hourani, *A History of the Arab Peoples*. New York: Warner Books, 1992.
[89] Quoted in Hourani 1992, 266.
[90] Juan Cole, *Napoleon's Egypt: Invading the Middle East* (NY: Palgrave Macmillan, 2008),129.
[91] This territory includes today's Egypt and Sudan, which were the most populous and commercially as well as culturally most vital areas of the Arab world.

peak in the colonization of most of the Arab world following the collapse of the Ottoman Empire after World War I.

The Arab world, which includes an area larger than that of Europe and today is comprised of over 300 million people, did not even have 20 million people in the early nineteenth century,[92] whereas in the same period France had a population of 27 million people.[93] Because of poorly connected urban and rural centers and the deterioration of legal, governmental, and even agricultural life associated with massive desertification due to deforestation and a largely illiterate population, the Arab world was far from a cultural renaissance in early 19th century. In addition, the Arab elite allied to the Ottoman Empire did not care to establish even a single modern university, and the existing universities were mainly teaching only religious sciences. Hence, the Arab world lacked the minimum conditions favorable for the development of an educated elite that could engage in philosophical enterprise.

Rather than philosophical modernization, various forms of political, legal, religious, and educational reforms were the proper concern of a number of learned figures in the 19th century.[94] Learned religious scholars led this reform movement; a good example is the Syrian religious scholar ‘Abd al-Rahman al-Kawakibi (1854-1902), “perhaps the first Arab intellectual in modern times to theorize about democratic, secular, and socialist Arabism.”[95] He sought “to promote the notion of a secular Arab nationalism, claiming that Arabic-speaking Muslims, Christians and Jews were ‘Arab’ before being

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[92] Hourani, *A History of the Arab Peoples*, 294 .
[93] David I. Kertzer & Marzio Barbagli, “Family Life in the Nineteenth Century, 1789-1913”: *The History of the European Family* 2 (New Haven, CT: Yale University Press, 2002), xi.
[94] See Fahmi Jad‘an, *Usus al-Taqaddum ‘inda Mufakkiri al-Islam* (Amman: Dar al-Shuraq, 1988), 580, 588, and 596.
[95] Halim Barakat, *The Arab World: Society, Culture, and State* (Berkeley, CA: University of California Press, 1993), 248.

members of their respective religious communities."[96] This intellectual era extended throughout the entire 19th century up until World War II. During that period philosophical concerns were more of a political and ideological sort and dealt with controversies regarding nationalism, liberalism, and Islamic reformation.[97]

The emergence of a deeper and broader philosophical activity had to wait until the return of a generation of Arab students who studied in British, German, and French universities around the middle of the 20th century.[98] The common feature of this post World War II period up until the sixties was the analysis, description, comparison, and translation of western philosophy. There is no such thing as a native Islamic philosophizing in the systematic sense during this era, and none of these Arab scholars claimed to be a philosopher in the professional sense. The goals of the 1950s and 1960s in Arab countries were mainly independence from colonial powers and the creation of institutions and educational curricula for the newly born states. A philosophical spirit, however, needs more than keeping oneself busy with translations and the creation of curricula.

A new spirit characterizes the third stage in the modernization of Arab-Islamic philosophy between the 1970s and the 1990s, and it corresponds to the maturity of Arab states and their educational institutions. During that period, attractive scholarships were offered by both Cold War blocks to Arab students, and as a direct offspring of the post-independence movement, a growth of philosophical interest took place. This third stage is

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[96] Ibid., 35.
[97] Few English works refer to this era; see in particular the anthology with translated original texts by John Donohue and John Esposito, *Islam in Transition: Muslim Perspectives* (New York: Oxford University Press, 2006), and Albert Hourani, *Arabic Thought in The Liberal Age, 1798-1939* (Cambridge: Cambridge University Press, 1983).
[98] This stage includes Yusuf Karam (1886-1959), Tawfiq al-Tawil (1909-1991), and 'Uthman Amin (1905–1978).

characterized by applying, for example, Marxist, Logical Positivist, Freudian, or existentialist topics, methods, and styles to Islamic history and culture.[99] Although this third period is more creative than the previous two, it did not achieve the popularity witnessed in the previous two stages; it remained restricted to small circles of intellectuals, faithful modernists, and graduate students in the humanities. At the same time, an important increase of Islamic movements returning to traditional thought took place accompanied by a retreat from secular forms of thought. The common feature of this third stage is the application of western philosophical doctrines to Arab-Islamic culture. This is similar neither to the first stage that sought practical and non-philosophical reform, nor to the second stage which was occupied mainly with analysis and translation of modern western philosophy.

Compared to the expansion of modern Islamic literatures of theological, legal, ideological, and traditional writings, the number of philosophical publications, and more generally the philosophical modernization in the Arab world, was in retreat in the fourth and final stage starting in the 1990s.[100] There are two main reasons commonly accepted by scholars of contemporary Arab thought for the retreat of philosophical modernization in the Arab world.[101] The first reason is the failure of the nationalist and socialist regimes

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[99] The third stage includes the following representatives of each of the following doctrines or disciplines: Marxism: al-Tayyib Tizini (b. 1934), Existentialism: ʻAbd al-Rahman Badawi (1917-2002), Logical Positivism and Scientism: Zaki Najib Mahmud, (1905-1993), Phenomenology: Hsan Hanafi (b. 1935), Feminism: Nawal al-Saʻdawi (b. 1930), Structuralism: Muhamad ʻAbid al-Jabiri (1936-2010), Freudianism: George Tarabishi (b. 1939), and Literary criticism: ʻAbd al-Wahhab al-Misiri (1938-2009).

[100] For instance, the Head of the Jordanian Union of Publishers, Fathi al-Biss, remembers the publishers' complaints that they were printing about 3000 copies of the first edition of every title in the early 1970s, while they now print only 1000 copies of every title without hoping for a second edition for the whole Arab world market (see al-Quds al-ʻArabi newspaper at: http://www.alquds.co.uk/index.asp?fname=data\2009\05\05-16\15qpt88.htm). And this, although the population in the Arab world grew in the same period from around 150 million to more than 300 million people, with greater purchasing power and much higher literacy rate.

[101] See George Tarabishi, *Hartaqat ʻan al-Hadatha wal-Dimuqratiyyah wal-Mumanaʻah* (Beirut: Dar al-Saqi, 2006), 93-99.

to face external threats (for instance Israel); the second reason is the failure to fulfill the promises of economic development, political democracy, and social justice that had brought these governments into power in the first place. This double failure led the Arabs to lose hope in the pseudo deliberations of modernity and to seek refuge in the Islamic heritage as presumably the best protector of Muslim land and as the unbiased ethical source against unjust and corrupt Arab governments. This "apostasy away from modernity," as George Tarabishi calls it,[102] is a result particularly of Israel's victory over the combined five armies of Jordan, Syria, Lebanon, Iraq, and Egypt in 1967. Arab laymen went on to interpret this disastrous event as divine punishment for adopting the ideals of modernity – for instance the rule of people rather than God, this-worldly rather than other-worldly orientation, and attention to women's liberation rather than piety and conservative attitudes. This led to the minimization of the already fragile popularity of philosophy in the Arab world. In addition to this, there was also a problem inherent to the third stage of 'philosophical application endeavor.' This endeavor consisted in taking readymade ideas and methods from the West without realizing that these are the products of a particular culture and mindset. Not only were they circumstantial products that could not grow naturally in another cultural environment; they were adopted uncritically and led to questionable results.

The fourth stage is still in formation and tries to avoid the flaws and the unpopularity of the third stage. Its goal is to eliminate the linguistic enslavement caused by the translation of concepts rooted more in European languages than in Arabic, by the use of metaphors and examples not familiar to an Arabic speaker, and by a style that imitates the translated text. The result of these methods used by the third stage was that

[102] G. Tarabishi, *Min al-Nahdah Ila al-Riddah* (Beirut: Dar al-Saqi, 2001).

average Arab readers associated nonsensicality to western texts, becoming convinced of the superiority of traditional Islamic thinking and of the naivety of convoluted western modernity.

Along with enslavement to translation and the unnatural transfer of foreign philosophy, the third problem is the wider horizon of global history. Muslim and Arab knowledge and experience of the modernization project is a story of misfortune. Introduced to Arabs between the 19th and 20th centuries, modernization was associated with the following issues:

- *Political disloyalty:* a political-administrative elite was formed on the basis of allegiance to western colonial powers rather than domestic loyalty and representation of indigenous interests;
- *Economic exploitation*: economic programs were implemented based on western exploitation rather than the welfare of the native population;
- *Cultural eradication*: legal and ideological reforms were launched on the basis of arrogance towards, and a challenge to, original customs and religion rather than internal and gradual education and enlightenment;
- *Psychological alienation*: popular culture stemmed from western entertainment and the fashion industry, leading to psychological alienation of the poor and conservative majority.

These four issues led the majority of Muslim Arabs to identify the whole project of modernity, particularly after the 1967 war, with a programmed western plot for the destruction of the Muslim-Arab world, and to reject the cause of modernity. Many Arabs failed to understand essential benefits of modernity, such as constitutional-democratic

governance, economic-industrial development, critical thought, and humanist development of the self. Antagonism to the implementation of enforced modernity led them to over emphasize an alleged universal and exceptional status of their cherished Islamic traditions. So, why seek philosophical truth and virtue from untruthful and non-virtuous westerners? How can a remedy be learned from those who inflicted the harm? This point has been often made by current Islamic movements. In particular, Shaykh Yusuf al-Qaradawi, the head of the Muslim Scholars Council, wrote many works in this regard, for instance *Imported Solutions and How they Harmed our Nation*; *Us and the West: Thorny Questions and Decisive Answers*; and *Secular Extremism in the Face of Islam: the Cases of Tunisia and Turkey*.[103]

The fourth stage may rightly be described as native philosophical appropriation. The primary representatives of this newly emerging movement are the Tunisian philosopher Abu Ya'rub al-Marzuqi (born 1947**)** and the Moroccan Taha 'Abd al-Rahman (born 1945**)**. Both write in an excellent Arabic style, pay attention to the formation of their concepts and methods, and declare allegiance to their native cultures over against imperialism. For them, philosophy is a matter of cultural challenge combined with universal epistemological and ontological concerns. In order to better understand this stage of native philosophical appropriation, let us examine the philosophy of Taha 'Abd al-Rahman.

[103] Yusuf al-Qaradawi, *al-Hulul al-Mustawradah wa Kayf Janat 'Ala Ummatina* (Damascus: Mu'assasat al-Risalah lil-Tiba'ah wal-Nashr, 2001), *Nahn wal-Gharb: As'ilah Sha'ikah wa Ajwibah Hasimah* (Cairo: Dar al-Tawzi' wal-Nashr al-Islamiyyah, 2006), and *al-Tatarruf al-'Almani fi Muwajahat al-Islam: Namudhaj Tunus wa Turkiyya* (Cairo: Dar al-Shuruq, 2001).

5.2 Taha 'Abd al-Rahman's Modernity

Taha 'Abd al-Rahman has been a Professor of Logic and of Philosophy of Language at Muhammad V University in Rabat since the early 1970s, after graduating from the Sorbonne University in Paris with a Ph.D. dissertation entitled *Langage et philosohpie: Essai sur les structures linguistiques de l'ontologie*. Only three of his books are available in two European languages (English and French), and eleven books in Arabic have not yet been translated. Unlike most scholars in the contemporary Arab world today, Taha's knowledge of French, German, English, Latin, and classical Greek enables him to tackle several philosophical issues in an in-depth way and to link mathematical logic to linguistic analysis, ontological consciousness to ethical commitment, and the cultural study of Arab nationalism to universal humanist engagement. However, his acquaintance with natural science, philosophy of science, and socio-historical sciences is not as strong as his knowledge of ethics and logic. Taha writes in the classical Arabic logico-argumentative tradition that ceased to exist with the eclipse of its medieval golden age in the 15th century. The quality of his style astounded many Arab intellectuals who were not anticipating any revival of the classical writing style and its refined techniques, which are highly influenced by the Aristotelian consistency, clarity, and originality that characterized the golden age of medieval Islamic scholasticism. What is currently fashionable in modern Islamic discourse is the apologetic rhetoric of religious discourse and the critique of western domination. The Islamic movements provide examples of these trends that sometimes reject the objectivity of scientific findings on account of alleged western centralism.[104] The past situation may

[104] An example of this trend is the famous conference by the International Institute of Islamic Thought of Virginia-USA on 'The Problem of Bias in Western Centralism' edited and published in 'Abd al-Wahhab al-

encourage a tendency to denounce or reject as pseudo-rational and fictitious the content of Taha's thinking. For example, Taha's latest book, published in 2006 with the title *Spirit of Modernity: The Introduction to the Establishing of Islamic Modernity,*[105] might be easily disqualified as pseudo-philosophical religious apology, though in fact it offers insight into the most recent endeavors in mature Arab-Islamic philosophy.

5.2.1 The Structure of the Spirit of Modernity

Max Weber (1864–1920), one of the founders of modern sociology, distinguished modernity from pre-modernity by referring to the expression "Entzauberung der Welt" (disenchantment of the world). In *Spirit of Modernity*, Taha argues for the reasonability of such disenchantment. For him, the "spirit of modernity" is an interesting concept for at least three reasons: it epitomizes *beforehand* 1) a widespread skepticism about the validity of the project of modernism generated, for instance, by the Frankfurt School; 2) a questioning by third-world voices of a new postcolonial age in which globalization imposes new western values on the rest of the world; 3) a negative stand with regard to the worldview presumed by western secularism as seen in naturalism, realism, and humanism. Taha calls for a rethinking of modernity and he explains what he means by this. Even though modernity is a recent phenomenon in western history, there is no reason to assume that its ideals have either been understood or achieved. This echoes Habermas' view that "modernity [is] an 'unfinished project.'"[106] Therefore, Taha makes a distinction between 'factually existing' and 'ought to be'

Misiri, *Ishkaliyyat al-Tahayyuz: Ru'yah Ma'rifiyyah wa Da'wah lil-Ijtihad.* Cairo: The International Institute of Islamic Thought, 1995.

[105] *Ruh al-Hadathah: al-Madkhal li-Ta'sis al-Hadathah al-Islamiyyah*. Beirut: al-Markaz al-Thaqafi al-'Arabi, 2006.

[106] J. Habermas, *The Philosophical Discourse of Modernity: Twelve Lectures* (Cambridge, MA: MIT Press, 1990), xix.

modernity. The latter can be seen as potential modernity, which might provide the opportunity to think of a 'spirit of modernity.'

Taha refers to several historical and conceptual definitions of the 'spirit of modernity.' First, the historical definitions describe modernity as a process that did develop in Western Europe with Reformation, Enlightenment, French revolution and industrial revolution, and that continues with today's globalization and information revolution (RAH 23). Second, conceptual definitions emphasize mainly the control of nature, society, and the self (RAH 23). Taha is neither satisfied with any of the historical nor the conceptual definitions; he asserts instead that a more accurate conception of the spirit of modernity is seen in what he calls *maturity, criticism, and universality* (RAH 29).

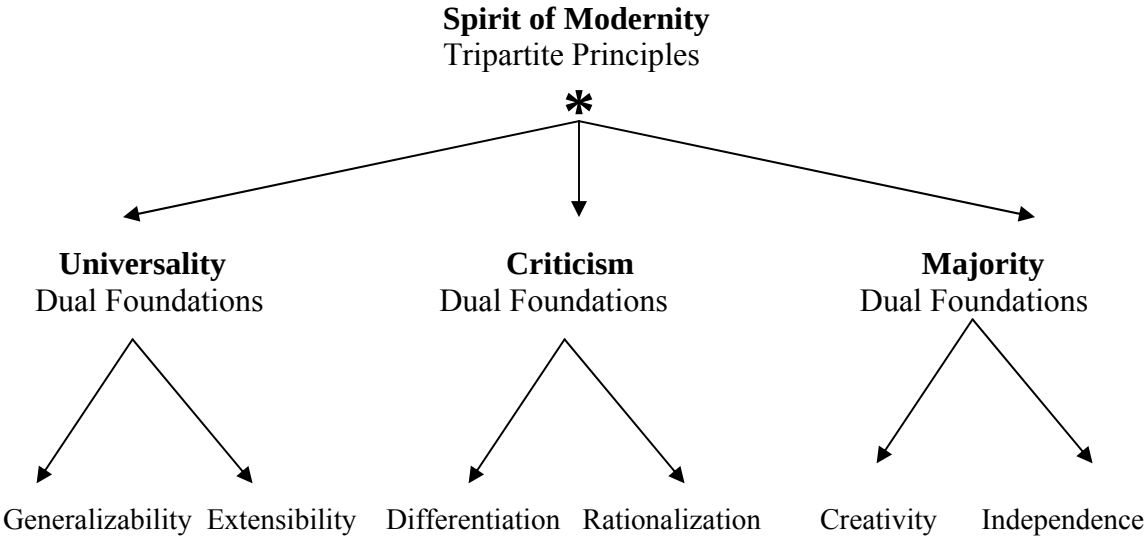
First, to be modern is to evolve from being in the situation of a minor or juvenile human being to being a mature one, i.e., one in the "age of majority".[107] In other words, to be in a state of majority is to rid oneself of custodial dependence and uncreative imitation of others (RAH 25). Therefore, the principle of majority is defined by the two foundational notions of *independence* and *creativity*. Here, independence balances relations with the other, while creativity enables one to invest in one's potentials. The justification for this diagnosis of majority is historical in that independence from authoritative royal and clerical powers and the creation of novel ideas and products is peculiar to what happened in the history of western modernity. Second, to be modern is to evolve from the state of believing to the state of critiquing (RAH 26). To believe is to submit with no evidence, while to critique is to submit after seeking evidence (RAH 26).

[107] In English, 'majority' and 'major' are usually understood either as the quality or state of being greater, or as the age at which full civil rights are granted, contrary to the juvenile status. Taha uses the latter meaning.

Critical thinking subjects all phenomena to rationalization (rather than obscuring and contradicting them), while differentiating between particularities and differences (rather than confusing them). Therefore, the principle of criticism is based on two foundations: *rationalization* and *differentiation*. The reason for this analysis of criticism is the fact that subjecting natural and human phenomena to rational study is highly characteristic of modern natural science. Differentiating between components of a convoluted and vague notion has also historically led to the freedom from heritage, religion, and the sacred. Third, to be modern is to move from narrowness and restriction to universality (RAH 28). In other words, to be universal is to extend the modern domain to all fields and generalize its results to all individuals and societies. Hence, the principle of universality is defined by the two foundations of *extensibility* and *generalizability*. The bases of these foundations are formulated by observing how modernity extends from thoughts to actions, from laws to morality, from nature to man and so on (RAH 27), while it generalizes the political economy and cultural reality of the west to all parts of the world. In other words, universality seeks to generalize the modern spirit to individuals, their religious culture, and even the whole world, while it also seeks to extend the modern way of thinking and technology to economic activities and the line of historical development in order to gain absolute power. Such universality is identical with the past and present of modernity.

On the basis of its hexagonal foundations - namely, independence and creativity, rationalization and differentiation, extensibility and generalizability – the spirit of modernity is a mature, critical, and universal one. Taha argues that rationalization, secularism, individualism, and capitalism are derived from the hexagonal foundations

(see below, # 5.2.4). The following figure draws the structure of the spirit of modernity with its tripartite principles and hexagonal foundations.



Based on this structure, Taha examines the consequences of the modern spirit (see below, # 5.2.2), while investigating the conditions for a genuine application of modernity to Islamic culture (see below, # 5.2.3). He sets the stage for the possibility, and even necessity, of falsifying the premises of actual modernity (see below, # 5.2.4), and he chooses six case studies which he thinks establish an Islamic application of the spirit of modernity (# 5.2.5). These case studies pertain to:

- Rationalization with its two facets, expanded vs. narrowed, as applied to globalization;
- Differentiation with its two extremes, essential vs. functional, as applied to family system;
- Independence with its two limits, responsible vs. imitated, as applied to the endeavor of philosophical translation into Arabic;

- Creativity with its two facets, connected vs. disconnected, as applied to Qur'anic hermeneutics;
- Extensibility with its two extremes, material vs. spiritual, as applied to citizenship rights;
- Generalizability with its two limits, human vs. existential, as applied to environmental protection.

In subsequent sections (see below, # 5.2.5 and # 5.2.6) we shall deal with Taha's strongest case against the western worldview, i.e., the postmodern family. The justification of his whole project is then analyzed (see below, # 5.2.8), and a general criticism of it is offered in the conclusion of this study.

5.2.2 Consequences of the Spirit of Modernity

The application of the spirit of modernity may vary and proliferate *ad infinitum* since no single application will ever exhaust it. Out of the many consequences of its application Taha distinguishes four main ones (RAH 30):

1) *Plurality* of the possible modern applications, since it does not have any particular racial, territorial, or historical restriction, but is open to all kinds of domains.

2) *Divergence* from its current western actualization, since no actualization of it is ever the fullest realization of the spirit of modernity. There is divergence not only between today's modernity and its spiritual ideal, but also between the various implementations of it – for instance, the German and the French, the American and the Russian, the British and the Scandinavian. This variety shows that the spirit of modernity is not just a mood of 'being,' but is rather a mood of 'becoming;' indeed, it is human in origin and includes the evolutionary process of humankind as a whole. Assuming the emergence of the spirit

of modernity only today and only in the West is flawed, since it is not specifically western in kind. Although its current actualization is western in form, it might have been actualized in the past differently (RAH 31). Moreover, western modernity would not have existed without Chinese technologies (gunpowder and paper), Arabic sciences (mathematics and medicine), Greek philosophy (logic and philosophy), and Amerindian wealth (gold, silver, and potato).

3) *Re-actualization* in the future in variant ways: the ancient Mesopotamian or Andalusian modernity may be akin to the spirit of modernity as much as a future African or Indian one.

4) A combination of the previous three consequences calls for *equality* in kinship of all civilizations within the spirit of modernity (RAH 31). Taha acknowledges the privileges of science, development, and welfare that characterize western modernity without feeling detached from the Islamic culture he wants to promote and defend.

The gist of his thoughts on the consequences of the spirit of modernity is that its modern applications are numerous and diverge from the current western applications. For Taha, it is not difficult to figure out several actualizations of the spirit of modernity in pre-western modern times in several communities independently. This is indeed a big stretch for the concept of modernity when Taha identifies modernity with human creativity itself.

5.2.3 Conditions for a Genuine Application of Modernity

The subtitle of Taha's *Spirit of Modernity* is *The Introduction to the Establishing of Islamic Modernity*, which is the fundamental concern of the book. The following two

questions are posed: how might Islamic modernity be established? How should Islamic modernity differ from western modernity?

According to Taha, the answer to these questions is to be found in the fact that actual western modernity brought about the opposite of its own proper goals (RAH 32). The aim to control nature has led, for instance, to a population explosion, global warming, and weapons of mass destruction. The attempt to control society has produced a form of globalization that creates uncontrollable economic, cultural, and political phenomena, while the will to be liberated from authority has led to strange and complex governmental authoritarian forms of surveillance and individual tracking.[108] Therefore, what was meant to be liberation from nature resulted in a form of slavery; what was meant to be individual privacy led to public lack of freedom; what was meant to be state independence was transformed into dependence on other countries. Taha attributes these inversions to the replacement of goals by means and the implementation of such mottos as "change for change's sake," "art for art's sake," "science for science's sake" (RAH 33). For him, Islamic modernity should avoid repeating such mistakes.

For Taha, modernizing the third world through a western application of modernity is just mere imitation, not a creative enterprise based on modernity's own spirit of maturity, criticism, and universality (RAH 34). Imitation and reproduction are counter-modern, and each nation has the choice of either achieving its own internal modernity or having no modernity at all. Thus, to be modern means to be creative in one's rationalization of phenomena and differentiation between particulars, in one's extension and generalization of actions on humans and things, in one's independence and self-

[108] Taha refers to Ulrich Bec, *What is Globalization?* (Cambridge: Polity Press, 2000), Christian Coméliau, *Les impasses de la modernité* (Paris: Editions du Seuil, 2000), and Alain Gérard, *Le cadre d'une nouvelle éthique* (Ramonville Saint-Agne: Editions Erès, 1998).

achievement. The ignorance of creativity in today's Arab philosophy is a counter-modern attitude rooted in the behavior of both Arab imitators of modernity, i.e., agents of westernization, and Arab imitators of traditions, i.e., Islamic traditionalists (RAH 39). Establishing an Islamic modernity implies avoiding the defects of the western application of modernity and overcoming the ignorance of creativity in imitating the western or native traditions.

5.2.4 The Falsification of the Premises of Actual Modernity

How can internal and creative modernity be implemented? Taha answers the question by unearthing the implicit and explicit principles that justify actual modernity according to those who defend its current western manifestation, i.e., Arab scholars of readymade philosophical applications. Out of the metaphor that spiritual values – the spirit of modernity in this case – are "up there," actualizing these principles is a process of applying these values to reality. This process in itself necessitates criteria which Taha calls "application premises" of modernity. This allows him to show how the western application premises are in no way similar to the premises that underlie Islamic history and society. Therefore, imitating these applications will undoubtedly yield an uncreative and even harmful imitation for the Arab world.[109] By revealing these application premises and by attempting to falsify them, Taha focuses on the failing attempts of modernization exported from the West to different parts of the Arab world. This focus facilitates the necessary criticism of the model of modernity put forward by many westernizing circles in today's Arab world that imitate actual modernity. By clarifying the western application premises, he aims to suggest a substantial alternative to actual

[109] A detailed analysis of what Taha calls "cultural interaction pragmatics" (*al-majal al-tadawuli)* has been made in his book *Renewing the Method of Evaluating the Heritage* (*Tajdid al-Manhaj fi Taqwim al-Turath*) published in 1994.

western modernity and to highlight what the internal and creative application premises would be (see below, # 5.2.5). Falsification is achieved through close examination of the application premises pertaining to criticism, universality, and maturity.

5.2.4.1 The Creative-Internal Implementation of Criticism

Criticism is a basic dimension of the spirit of modernity based on rationalization and differentiation (see above, # 5.2.1). Critical thinking subjects all phenomena to rationalization (rather than obscuring and contradicting them), while differentiating between particularities and differences (rather than confusing them). In order to falsify the application premises, Taha suggests the move from imitative to creative rationalization (RAH 42) and from imitative to creative differentiation (RAH 47). With regard to the first move, he draws attention to the following three false premises: everything can be rational; all nature can be mastered by Man; everything can be criticized.

The first premise is most responsible for the applications of modernity today (RAH 43). It is debatable epistemologically because reason cannot rationalize itself, since reason is a means. Thus, understanding this means would need yet another means of a distinct capacity and quality; otherwise, we would fall into a circular argument leading to tautological arguments such as: the party's leadership best manages the nation through the leadership of the party. Another observation is that reason is part of the whole and as such, it cannot encompass the whole (RAH 43). Rationality actualizes itself most suitably through technological instrumentation and utility maximization, all of which are only parts of the whole.[110] For Taha, the first premise has to be viewed as flawed. The

[110] Taha refers to the early members of the Frankfurt School, Max Horkheimer and Theodor W. Adorno (RAH 43).

correction of these flaws lies in realizing that rationalization of ends restricts the rationalization of means and vice versa. This realization further necessitates a dual process of discovering the best ends and the most suitable means for achieving them. In other words, for Taha, the essence of reason is not rational.[111]

The premise that "all nature can be mastered by Man" is widely promoted at the initial stage of modernity, for instance by Francis Bacon (1561–1626). How can this be possible, Taha asks? As a matter of fact, Taha argues, man is forced to obey the laws of nature, while nature still does not obey human wants. We are rather the offspring of nature, and nature should be considered a mother. This entails a universal pledge of faithfulness and mercy toward 'mother nature,' so that "Man repays mother nature with mercy" (RAH 45). Needless to say, there are successful cases of controlling particular aspects of nature, such as fluvial dams and medical treatments, which weaken the total critique of controlling nature. Taha's merciful alternative is an expression of a gifted rhetoric; yet it does not offer an alternative to the instances where nature can be mastered by Man.

The premise that everything can be criticized states that criticism can subject its method to all types of knowledge. Therefore, absolute criticizing presents itself as the way or criterion to all human knowledge, while criticism itself, Taha reminds us, does not form the gamut of our practically utilizable knowledge (RAH 45**)**. Acceptance of common background knowledge and human reports, for example, shapes most of our knowledge from childhood to death without our having the capacity to critique and verify all of this information. As babies, we eat what our parents offer us; as children, we learn

[111] On this see for instance Maurice Boutin, "L'Un dispersif: Examen d'une requête récente." In Marco M. Olivetti, ed. *Neoplatonismo e Religione*. Padua (Italy): CEDAM Publ., 1983, pp. 253-279; p. 271.

what our teachers teach us; as adults, we generally behave based on how the political elite have structured the domains of law, taxation, or media. Criticism pertains only to a small portion of these processes, and sometimes it does not change anything. In some cases, acceptance leads to more practical or even more certain knowledge than criticism, especially when criticism is viewed as a continuous and infinite process. Another flaw regarding criticism as an ideal is that criticizing and doubting "higher values", deemed intrinsically incompatible with criticism, does not allow us to deal with these values adequately. For example, in the case of friendship or love, good faith and trust enable a relationship to flourish, while doubting and criticizing will lead eventually to the collapse of the relationship. The alternative to absolute criticism would be, Taha suggests, multi-level criticism in which the evidence sought at each particular level is suitable to that particular level. Hence, criticism itself will vary from the "regularly criticizable," to the "practically uncriticizable" values (RAH 45-46).

The gist of falsification of rationalization is the following: Islamic rationalization should think of goals as much as means while utilizing multi-level criticism rather than a one-level absolute criticism. Taha assures us that this way Islamic rationalization would lead to acknowledge and respect the supremacy of nature and to accept an internal and expanded rationalization, rather than a narrow and external one.

Differentiation as a process that distinguishes between particularities and differences (rather than confusing them) is the best English equivalent to the Arabic term (*tafsil*) used by Taha and refers to "seeking further details" and also "separating various

elements."[112] Taha notes that the process of differentiation is found in many imitative Arab circles, in which members seek to modernize Islamic philosophy, for instance, through the differentiation or separation of ethics and politics, gender and identity, or the good and God. The correction proposed by Taha is the move from imitative to creative differentiation (RAH 47), and it pertains to the following three premises in the western application (RAH 48): the differentiation between modernity and traditions is absolute; the differentiation between reason and religion is absolute; differentiation necessitates the elimination of the holy.

The absolute differentiation between modernity and traditions is falsified by the following two cases. Heritage in many religious cultures is not identical with religious institutions, such as the church. Hence, the differentiation between modernity and the religious authority of the church does not necessarily impinge on religion itself; indeed, the absence of a church-like institution in Islamic history would make that differentiation inconceivable. Moreover, the differentiation between past heritage and present modernity assumes an instant and miraculous emergence of actual modernity. However, as Taha reminds us, modernity has its roots in religious reforms in the past and in religious concepts such as perfection and brotherhood (RAH 49). In addition, the giant figures directly involved in constructing modernity were also religious persons, such as Erasmus, Martin Luther, Descartes, Spinoza, Locke, Leibniz, Newton, Pascal, Kant, or Hegel. All this confirms the close relation between present modernity and its past heritage.

[112] The meaning of *fasal* can be found in the authoritative and extensive medievalist dictionaries of Ibn Manzur, *Lisan al-'Arab,* and of Murtda al-Zubaydi, *Taj al-'Arus*. The *fasal* entry is available online for the two sources in the following links: http://lexicons.sakhr.com/openme.aspx?fileurl=/html/7079856.html http://lexicons.sakhr.com/openme.aspx?fileurl=/html/Tag/8928.htm

However, a creative relation to heritage does not prevent one from taking a new and radical direction, which seems unwarranted by Taha.

Western modernity, Taha suggests, not only rejected that solid bond between modernity and traditions; it also sought to differentiate between religion and reason, and viewed religion as irrational. Thus the premise: differentiation between reason and religion is absolute. Here, 'irrational' may at least have any of the following three meanings: impossible occurrence, such as the conjunction of opposites; inaccessibility to reason either because it surpasses it or because it simply differs from it; and what cannot be judged by reason as either true or false. For Taha, religion cannot be irrational with reference to the first meaning, since dialectical reason may rationalize the conjunction of opposites (RAH 51). However, I have to note, this cannot be generalized since dialectical reason can overcome some opposites but still cannot resolve many cases of contradiction. As to the second meaning of 'irrational' in terms of 'inaccessible to reason,' this does not exclude the plausibility of some particular ultra-reason capable of rationalizing the religiously invisible, which is sometimes referred to as 'spirit.' Yet, what this kind of reason refers to and where it is actualized are questions to which Taha does not provide answers. Entertaining the plausible might be interesting, yet it does not offer any real basis for knowledge. According to Taha, the third way to understand 'irrational' in terms of that which cannot be judged as true or as false neglects the fact that nothing can be classified as rational or irrational *per se*. Indeed, there is hardly a conclusive argument for such a distinction. In the past, man was not capable of crossing continents in hours, and now he is; infertile couples could never have babies, and now thanks to technology they can. In both cases, what transformed the irrational actuality into a rational possibility is

not some spiritual ultra-reason, but logically meticulous and materially informed reasoning. Taha's super rationality does not help in these cases; normal rationality, innovative theorizing, and discovery of new evidence are sufficient.

For Taha, the premise that "differentiation necessitates the elimination of the holy" unduly identifies magic with the holy (RAH 52). Yet, magic "glorifies what is embodied in the world, while the holy glorifies what transcends the world" (RAH 52). Although natural laws may reveal the magic of the world, they do not reveal the holy. However, the world is not only a phenomenon waiting for natural science to unveil; it is also an opportunity for reflection and increase of scientific understanding, which may increase a sense for the holy as well. In Islam, the holy is based on the notion that the human being is a "connective being" related to different worlds. Such connectedness enables the human being to "travel by his imagination through times, spaces, and even through non-spatiotemporal realms" (RAH 53). The elimination of the holy leads to loss of meaning, distrust of the world in times of disaster, and fear of death, all of which have led the western man to deny himself a meaningful life, trustful living, and a peaceful death (RAH 53-4). Islamic differentiation does not create substantive differences, since everything is viewed as intrinsically connected. Therefore, any correct differentiation should rather be "functional and consequential rather than ontological" (RAH 54).

Taha's position with regard to the holy might result in nothing but imagination and hope. However, let us not forget that imagination and hope can support perseverance in a rightful struggle and increase the possibilities of success. Furthermore, these traits are not exclusively Islamic and do exist in other religions and non-religious worldviews without being related to a mythical and supernatural holy. Yet, according to Taha, Islamic

differentiation should emerge from within a given heritage rather than ignore it, understand the irrational rather than discard it, and abide by the holy in order to avoid enslaving nature or being fascinated by its magic. To have an Islamic critical modernity is to have an internal and functional differentiation rather than an ontological one.

5.2.4.2 The Creative-Internal Implementation of Universality

Universality, a pillar of the spirit of modernity, is based on extensibility and generalizability (see above, # 5.2.1). Modernity extends, for instance, from thoughts to actions, from law to morality, from nature to human being, while it generalizes the political economy and cultural reality of the West to all parts of the world. With regard to the application premises, Taha suggests a procedure that moves from the imitative to the creative extensibility (RAH 55) and from the imitative to the creative generalizability (RAH 61). For Taha, the way in which the Arab-Islamic world imitates western modernity is despondent (RAH 54): there is a massive expansion of the modernity of machines accompanied by a prevailing backwardness in the modernization of education along with ethical degradation. In such circumstances, there is neither efficient management nor fruitful invention. Without internal self-struggle there is no freedom of thought; and without the latter the scientific spirit would not exist. Taha mourns this general situation of today's imitative Arab-Islamic modernity based on the following three premises: modernity is destiny; modernity yields absolute power; the essence of modernity is economic.

The first premise promotes the idea that modernity is the natural outcome of historical progress and that humankind has no power to circumvent either its advantages or its disadvantages, as if modernity were predetermined by divine will (RAH 56).

Moreover, modernity is presented as a complex and interconnected phenomenon in which any modification or alteration of its disadvantages would diminish its advantages. For example, if there were no pollution, there would be no mechanized power, and if there were no urbanization associated with alienation and crime, there would be no focused workforce. Therefore, modernity has to be maintained without alteration (RAH 56). In response to such a fatalist perception, Taha posits that modernity is indeed a contingent and extrinsic phenomenon, but whose essential cause is the human will. Hence, if humankind had the power to establish modernity, it also has the power to reform it. "The human being is more powerful than modernity" and can change an alleged destiny (RAH 56).

If we assume that "modernity yields absolute power" (RAH 57), we have to acknowledge that such power is a material, not a spiritual one. No wonder then, Taha points out, that such one-dimensional power seeks to prevent third-world nations from moving to the age of modernity by plotting against their political autonomy, national sovereignty, and human resources. Taha accuses western modernity of yielding material power along with severe spiritual and ethical degradation (RAH 59). Islamic modernity should establish the materiality of human life on the basis of Islamic spirituality, not the other way around. Only then will it be possible to preserve ideals of nascent modernity, such as liberty, fraternity, equality, dignity, and tolerance.

If the essence of modernity is economic, then consumption and pleasure become the most important goals rather than higher and more integral human goals such as medical, educational, and aesthetic rights. According to Taha, it is important here to remember that the ethical essence of the human being requires "elevating in values" and

"extending imagination into the future," which Taha calls "*al-Istiqbal* " (seeking the future, or 'futuration') (RAH 60). Perfection provides a human being with the ability to better one's condition and extend one's economic success while seeking more integral purposes and better prospects in the future, which is the core of 'futuration.' Contrary to the widely held claim of an absolute contradiction between modern economic revolution and religion, progress and development are rather rooted in the religious notions of perfection and 'futuration' (RAH 60), which unfortunately "tend to disappear in the face of the stealthy and exclusive economic claims to future progress and advancement of life" (RAH 60).

Taha's objections to economic modernity have already been raised in western circles. Charles Taylor's *Sources of the Self* (1989**)**, Benjamin Friedman's *The Moral Consequences of Economic Growth* (2005**),** or Erich Fromm's *Life Between Having and Being* **(**1998**)**, to name but a few, point to the problems raised by Taha, for whom Islamic modernity should not be limited to material progress but also provide an extension into spirituality and ethics. Thus, while Taha is correct in his criticism of western modernity, he fails to adequately acknowledge the remedies which have been proposed by critics of western modernity throughout its long history.

The second feature of modern universality is the process that generalizes the political economy and cultural reality of the West to all parts of the world. Again, Taha moves from imitative to creative generalizability (RAH 61), focusing on the following premises in the western application: modernity is the sole protection for individualism; secularism is the only way to preserve all religions; the values of actual modernity are universal.

According to Taha, the open attitude towards humankind regardless of race, color, territory, religion, and language finds itself at home in the Islamic heritage. Islam is not only a call to all this, it is also an invitation for even unknown creatures beyond humans, animals, and things. He regrets that traditionalist Muslim thinkers presently minimize the generalizability of Islam by adopting an ideologically and politically defensive attitude (RAH 61); he strives for an existential openness that inverts the imitative and humanly restricted generalizability.

Taha points out that there is "a strong consensus that one of the peculiar outcomes of modernity is individualism," which means that the individual alone "chooses his destiny, shapes his life, and takes responsibility for his actions" (RAH 62). Additionally, the individual makes society into a means for happiness and the utmost flourishing of self. According to Taha, there is no necessary link between these ideals and individualism as such. Although in its early stages modernity enabled humans to gain dignity and basic rights in order to facilitate individual participation in the formation of integral social welfare (RAH 62), this did not mean that the individual's concern should be only for oneself. The individual, Taha suggests, is a view of the 'actual,' whereas the human is a view of the 'ought to' (RAH 62). Therefore, an ideal Islamic modernity would call for "a global human society", which cannot be realized on the basis of irresponsible and selfish individualism. A global human society cannot be based on Descartes' individualistic cogito, but rather on what Taha calls "transitive reason," for which to think is to know that your thinking always has consequences for others (RAH 63). A cooperative global society is a much needed project in today's highly interrelated world, where information, technology, and cross-national institutions are major actors. The narrowness of

individualism is neither derived from the ideals of modernity, nor is it capable of serving as the basis of global society.

Some thinkers not only identify modernity with secularism, but they are also convinced that secularism is the only way to preserve all religions. The spread of modernity to most nations seems to have eased the task of religions by "taking away from them the management of the economic and political order" (RAH 64), thus preserving their sacred status. Taha sees this shift as contempt for religion rather than an appreciation of it. Besides, equating all religions is just like equating all philosophies, ideologies, and lifestyles: it leads to oversimplification. Moreover, some see secularism as the end of the authority of the church, while others see it as the end of Christianity, the end of religion itself, and even the disappearance of God (RAH 63-64). Taha's suggestion here is to find out how applying the Islamic understanding and experience of the holy should be more rational than the irrationality that has overwhelmed the history of other religions in the West (RAH 64). Preserving the holy at work in Islam provides what he calls "valuable rationality,"[113] which is an essential complement to the "instrumental rationality of secularism." Instrumental rationality refers to things rather than to living creatures, let alone humans, whereas preserving the holy of religion calls for humanized or valuable rationality. On the other hand, the orientation towards valuable rationality takes into account what is rational at the highest level of all possible rationalities. Thus, valuable rationality alone is capable of liberating humans from the influence of mechanical mentality and enabling peaceful communication with others (RAH 65). Valuable rationality is the ideal that preserves the sacredness of religion. Taha's proposal

[113] The expression *'aqlaniyyat al-ayat* used by Taha refers to the godly signs of the world from which values can be derived.

claims to be more rational and go beyond the irrationality that has overwhelmed the history of other religions in the West. And yet, valuable rationality cannot be a way of ignoring the irrationality that has overwhelmed the history of Muslims; what Taha accepts for other religions has to apply to Islam as well. If he seeks allegiance to his internal cultural idea in favor of Muslim peoples, then constructive criticism would not destroy this allegiance. Taha's proposal of valuable rationality should not lead to a blind preservation of the holiness of religion. Truth has to be preserved over the wishes of cultural peculiarities, even when it clashes with one's religion.

As to the statement that the values of actual modernity are universal, Taha points out the difference between the spirit of modernity and its application. Most agree for example, that justice, liberty, and dignity are universal values belonging to modernity (RAH 65); yet, their applications are not always adequate. Economic exploitation, environmental degradation, colonialism, racial segregation, massive ethnic cleansing, genocide, and wars all characterize the history of modernity. Too often, universal modernity is rather "a western locality that has been raised up to universality by mere authority and nationalist arrogance" (RAH 65) that results from imposing the singularity of western modernity on the plurality of applications of its spirit. Taha takes as examples human rights legislations in American, German, or Japanese courts: the first stresses economic rights, the second focuses on political rights, and the third emphasizes cultural rights (RAH 66). A truly contextual universality would apply modern ideals to their proper context, especially when the context is not a western one. For Taha, an Islamic universal modernity seeks a "transitive reason" that believes in global cooperation rather

than individualism, “valuable rationality” rather than secularism, and “contextual universality” rather than western locality.

5.2.4.3 The Creative-Internal Implementation of Maturity

The maturity characteristic of the spirit of modernity is based on independence and creativity. It consists in ridding oneself of imitative dependence and uncreative imitation of others. Independence pertains to relations with others, while creativity enables one to invest in one’s own potential. Once again, the move is from imitative dependence to creative independence and from uncreative imitation to creativity. Taha urges his fellow Arab intellectuals interested in philosophy not to let others think on their behalf; on the contrary, “thinking is one’s own responsibility” (RAH 36). Accordingly, he unveils the following three tacit statements on the western ideal of independence: the survey of powerful nations over weak nations is the civilized man’s responsibility; the internal survey is the business of the religious clergy; liberation from the internal survey paves the way to modernity.

During the colonial era, English, French, Italian, and other nations introduced themselves as protectors of less powerful nations; the same is continuing presently with the existence of the five permanent members of the UN Security Council as supreme guardians of the world’s unjust order. The motive for colonialism was political domination and economic exploitation rather than genuine care and responsibility for the rest of the world. Hence the premise, according to which “the external survey of powerful nations over weak nations is the civilized man’s responsibility”, is a rather destructive one. The same holds for the second premise that states that the internal survey is the

business of the religious clergy, since Islamic history does not show an overall domination of the religious class on political and economic life. Interestingly, tribal and oligarchic powers were regularly in charge throughout most of Islamic history, which made religious ideology a force of resistance and political opposition to the oppressive governing elite. Liberation in this case comes from religious culture, not from overcoming a religious class. Hence, liberation from internal survey as the way to modernity is not useful in the case of Islamic society, as the third premise claims. Modernity in the Islamic context is liberation, not from the internal, but from the external survey. For Taha, laying the foundation for an independent Islamic modernity necessitates an externally, internally, and responsibly mature Islamic modernity.

Although largely accurate, what Taha proposes here cannot be affirmed without qualification. The reason is that not all elements of the internal culture promote independence from tribal and oligarchic economic-political domination. For instance, in the middle ages mystic orders (*al-turuq al-sufiyyah*) in Egypt and greater Syria were accused of being the protectors of the feudalist elite. Another example is the religious-legal verdict (*fatwa*) prohibiting demonstrations issued by the committee of highest scholars (*hay'at kibar al-'ulama'*) in today's Saudi Arabia. Such prohibition is puzzling for anyone with a minimum knowledge of Islamic law who wonders about the basis for that in the Qur'an or in the prophetic traditions. The point here is that not everything in the religious culture is compatible with the interests of the Muslim peoples. Even Taha's views would not be accepted by a great number of the traditionalists he defends uncritically, who would deem his understanding of the spirit of modernity too philosophical and westernized. Interestingly, the only instance where Taha criticizes

current Islamic movements is to be found in a small book – originally a conference paper – with the title *Modernity and Resistance*, published in 2007, one year after his *Spirit of Modernity*.[114] Yet, his criticism seems more relevant to the context of a conference where his paper was read than in a book.

The final move suggested by Taha is from imitation to creative creativity (RAH 39). While acknowledging the redundancy in the expression 'creative creativity,' he justifies it as opposition to the attitude some Arab modernists adopt when they claim that their imitation of the West is an act of creativity (RAH 38). He sets up the following three objectionable premises: the most creative of creativity is absolute disconnection; the most creative of creativity is to create needs as well as satisfy them; the most genuine creativity is where the self flourishes the most.

To be sure, disconnection with a past that has no relevance in the present and the future is quite in order. And yet, Taha asks, can creativity take place with no reference to a previous heritage on which to build? Taha points out that modernization is not a time-related process that increases with the increase of disconnection with the past; rather, it is an ideal-related endeavor that increases with the increase of fulfillment of ideals (RAH 39-40). Therefore, the most creative can be in some cases the most connected with past culture. The second statement, that the most creative of creativity is to create needs as well as satisfy them, makes reference to the increase in material and desirable needs without a concomitant increase in the need for spiritual virtues. Such justification, Taha suggests, is clearly unbalanced; it focuses on a marketing endeavor aimed at attracting more customers without fulfilling any particular virtue, whereas an

[114] Taha 'Abd al-Rahman, *al-Hadatha wal-Muqawamah.* (Beirut: Ma'had al-M'arif al-Hikmiyyah, 2007), 80.

increase in the need for values would invert the situation. Therefore, instead of having the individual falling prey to advertising and consuming massive waves of fashion and publicity, the need for values would make a person responsible for his/her own choices and belongings. Thus, the most creative of creativity should be to work out a balance between material and valuable needs as much as satisfy them. As to the fact that the most genuine creativity exists where the self flourishes the most, one should not forget that the self, being a social being, can never flourish without the flourishing of a partner, a family, or a community. Otherwise, selfishness and excessive individualism would undermine the basis of the self. As a result, the most genuine creativity should be where the self flourishes equally with others because self and others are the two components of society.

In conclusion, the ideal Islamic creativity should enhance connection with the vital past rather than sever it, create a need for values, and enhance consideration of others as much as the self. In other words, to have an Islamic mature modernity is to be internally and relationally creative rather than imitatively disconnected.

5.2.5 Modern Family and the Disconnection from Traditional Ethics

Having attempted to present Taha's falsification of the premises of actual modernity (# 5.2.4), we are now prepared to present the substantial applications of the tripartite spirit of modernity in the Islamic realm. As for the pillar of maturity, Taha applies its dual foundations, i.e., creativity and independence, to the two components of society: the self and other, respectively. Therefore, he applies "joint creativity" with traditions to the issue of Qur'anic hermeneutics and "responsible social independence" on the issue of philosophical translation from European languages into Arabic. With regard to the pillar of criticism, he opts to apply its dual foundations, i.e., differentiation

and rationalization, to the smallest social unit, i.e., the family, and the largest social unit, i.e., the global community, respectively. In other words, Taha applies the "functional differentiation of worldviews" to the modern family and the "expanded rationalization of actions" to globalized society. As far as the pillar of universality is concerned, Taha applies its dual foundations, i.e., extensibility and generalizability, to the relational ties amongst humans and their attitude towards life, respectively. Thus, Taha applies the "spiritual extensibility" to the domain of citizenship in a multicultural society and the "existential generalizability" to the issues of environmental protection. Hence, the six Islamic applications of the spirit of modernity are respectively exemplified in Qur'anic hermeneutics, philosophical translation into Arabic, modern family, globalized society, citizenship, and environment. Due to the meticulously detailed structure of every case study, only the strongest of these applications, namely the modern family and the disconnection with traditional ethics, will be analyzed here.

Since modern criticism is based on rationalization and differentiation, the desired critical Islamic modernity pertains to internally functional rather than ontological differentiation. In other words, what distinguishes modern from Islamic differentiation is the fact that the former is based on the structure and essence of things, whereas the latter should be based on the function and teleology of things. Any change in function and teleology in light of Islamic differentiation would join what is disconnected, since the connection with traditions is the norm as long as there is no need for disconnection (RAH 14). For Taha, the absolute differentiation within the western realm of family led to serious deviations from the ethical principles of the spirit of modernity. In order to elucidate this, Taha defines the family as "the place where humans relate to each other

through lineage and the ethical role assumed in this relationship."[115] The lineage-based relationship is based on "marital relationship"[116] and the ethical role derived from the marital ethical model. In this way the marital ethics model generates various roles regarding, for instance, parental, maternal, filial, fraternal, and cousinhood ethics. Furthermore, it can apply to society as a whole through its comprehensive analogical ramifications. For instance, the teacher's relation with the student can adopt the model of parental ethics, and the student's relation to his colleagues can be inspired by fraternal ethics (RAH 100). Taha generalizes this point and claims that the nexus of all human relationships is rooted in the family; if there were no family, there would be no human relationships either, and thus there would be absolutely no need for ethics. However, ethics is necessary, and the family is the basis for protecting ethics. Contrary to this, a deviation occurred in western modernity due to the Enlightenment's effort to disconnect ethics from religion in the following three ways: 1) the "orientation to the human" (RAH 101) calls for separation from God, since one is free to choose one's destiny and determine what is good without the assistance of God; 2) "utilizing reason" (RAH 101) calls for disconnection from revelation, since reason alone is capable of judging all things and actions and of dismissing the need for any external power like the one effective in divine revelation; 3) the "attachment to worldliness"[117] as the only place for humans and their final destiny concerning the consequences of good and bad deeds call for separation from the hereafter.

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[115] For Taha, there is a clear literal relationship between the Arabic noun *akhlaq* (ethics) and its derived verb *takhalluq* (to behave oneself according to a system of ethics) (RAH 99). This relation does not appear in English, except with regard to the verb 'to ethicize,' rarely used in English.

[116] *al-'ala qah al-zawa jiyyah* (RAH 100).

[117] Here, worldliness is the translation of *al-dunyawiyyah*, referring to the existing world in contrast to the hereafter.

Western modernity, Taha explains (RAH 101-102), attempts to circumvent the alleged inhuman, irrational, and unworldly instances of religious ethics. This led to the creation of the following three ethical types that shaped the modern family accordingly: the ethics of selfhood as a direct outcome of the orientation to the human alone, the ethics of commitment as a result of the utilization of reason only, and the ethics of happiness as a consequence of exclusive attachment to worldliness. According to Taha, the task of Islamic differentiation consists in explaining why the application of the western family model does not achieve the spirit of modernity. Before explaining the alternative, Taha sees these three types as the foundations for the ethics of the modern family. As we shall explain in the following sections, he tries to unearth their best possible justification in order to demolish them.

5.2.5.1 The Human and the Ethics of Selfhood

Reliance on the self was a fundamental step in the age of Enlightenment to overcome the blind dependence on authority and traditions (RAH 100). The ethics of selfhood (*akhlaq al-muru'ah)* attempted to express the essential qualities of a person's own consciousness, being, or identity by way of the following imperatives: treating the human as the highest end rather than a means to other mundane goals in order to preserve human dignity; belonging to a particular nationality or community that determines the individual's role in the advancement of that community; and gaining an authentic identity peculiar to one's own individuality that cannot be substituted by any other.[118]

Adherence to these imperatives has lifted the human from his conventional stance to be at the rank of the 'self.' In this case, the ethics of selfhood enhances the individual

[118] Taha notes that the notion of "highest end" is one of Kant's ethical contributions and that the notion of "authentic identity" has been worked out by Charles Taylor (RAH 103-104).

from being an indistinguishable member of a mob to a distinguishable one, from being a common social means to being a particular one, and from being an imitator in his psychology to being an authentic self (RAH 104). The problem with the ethics of selfhood in terms of the modern family, Taha points out, is that it came to focus on the private life in opposition to the large social circle. This evolution of the family as an entity differentiated from the social whole has deepened, in contrast with the pre-modern family. In the latter traditional family, human relationships increasingly multiplied, causing the family to melt into the social whole by interconnected relationships. Yet, this is not the only transformation for the modern family. The second transformation was influenced by the call for a separation from religion.

5.2.5.2 Reason and the Ethics of Commitment

Reason is at work in the ethics of commitment by way of "mature freedom," compelling one to respect obligations and avoid wrong actions rather than follow whims and ignorance; by way of "pure duty" determining one's responsibilities out of the nature of duty itself and dismissing all interests and fears for the sake of the nation or of humankind; and by way of "proven rights" for the sake of preserving the life and essence of human beings through respect of the individual's privacy and readiness to fulfill public services (RAH 105-106). Proven rights in particular are derived from the idea of natural law historically articulated in the American and the French declarations of human rights (RAH 106). This being the case, demanding human rights necessitates the fulfillment of one's duties that agree with free will, an ideal scenario for rationalized ethics. This rationalization leads to the ethics of commitment devoted to duties from within the human self. The ethics of commitment in turn gives priority to the preservation of the

family over the individual and considers the family as the basis of society. This type of ethics is associated, Taha reminds us, with the following third ethical principle, which calls for a separation from religion.

5.2.5.3 Inclusive Attachment to Worldliness and the Ethics of Happiness

The inclusive attachment to worldliness entails rethinking the central role of human life. This is why the ethics of happiness has implications on the dimensions of the ethics of commitment just mentioned (RAH 107). First, private happiness is on a par with the natural rights to life, justice, or freedom and does not contradict them; second, private happiness, an offshoot of rational obligation to oneself as much as it is to others, is in compliance with duty and is viewed therefore as part of the larger system of rights and duties rather than as a selfish and thus sinful goal; third, private happiness coincides with public happiness, since the conditions of happiness for both the private and public realms are similar in many regards, for instance security, freedom, or prosperity.

The ethics of happiness is particularly justified as a remedy to the traditionally unbridgeable gaps between pleasure/good and individual/social. Such an orientation is clearly stated in the French Human Rights Declaration of 1973, which states that "the society's goal is common happiness" (RAH 108). This ethics of happiness modifies the traditional family: instead of being a mere shelter for necessities, the family becomes a place for worldly exultation and its role is not predetermined anymore by custom, reputation, or the preservation of progeny; rather, it is guided by compassionate love.

After this justification for the ethical system of the actual modern family, Taha offers his criticism, particularly in light of the ideal spirit of modernity and in relation to "the inversion of value systems wrought by actual modernity after the 1960s" (RAH 110).

5.2.6 The Postmodern Family and the Inversion of the Modern Ethical Values

Taha does not intend to offer a historical, sociological, or anthropological explanation of the inversion of ethics with regard to the postmodern family; rather, he considers such an approach as part of the actual modern differentiation that does not seek a normative understanding of the world and instead separates ideals from their applications. In explaining the differences between the modern and postmodern family, Taha adopts neither an orthodox Marxist view nor a feminist perspective (RAH 110-111). The first sees the change in family ethics as a shift from class struggle to generation struggle, while the second views the change as a struggle for absolute equality between sexes. In both cases, the reasons for the inversion of family values are not compelling: the Marxist view compares the severe exploitation by the capitalist of his workers to the relations of the parents to their children, while the feminist view dismisses the natural differences between males and females (RAH 111). The orthodox Marxist stance is an over-exaggeration; the Anglo-Saxon feminist view is an oversimplification (RAH 111). In contrast to these explanations, Taha articulates the ideal values that would suit the family in its relation to the spirit of the modern value system. Then he suggests the prototypes that achieve that ideal. Finally, he argues that deviations from these prototypes are the reason for the inversion of the ethics of selfhood, commitment, and happiness into the ethics of non-self, privilege, and playfulness.

5.2.6.1 The Inversion of Selfhood into Non-self

Selfhood connotes the preservation of ethical particularity, authenticity, and clear roles for the family members. This is not the case in the postmodern family (RAH 114).

In Taha's terminology, 'non-self' does not mean giving oneself unselfishly to others; it does refer not to altruism, but rather to a lack of selfhood. The same is connoted by the Arabic term *imma'iyyah*, which refers to a person who cannot reform or maintain him/herself.[119] Non-self is associated with passive acceptation and imitation of what already exits, with the justification of the fact that custom occurs and legislation concurs (RAH 115). For Taha, non-self applies best to the man who has lost his fatherhood authority, his control over birth, and his inspiring role for his children (RAH 116-117). Authority should be taken from the father and be given to the mother and children or shared among them. In French law, for example, the responsibility for the child's upbringing is given to the mother even in those cases of divorce in which the mother's actions have been proven harmful. According to "the French law of January, 8th, 1993," custody of the child is given to the mother even if she lives with another man, legally or illegally (RAH 116). As far as birth control is concerned, "the French laws of 1967 and January 17th, 1975 not only give exclusively to the mother the right of deciding to maintain a pregnancy or seek an abortion, but also the right to disguise the reality of pregnancy's occurrence" (RAH 115). Finally, educational, ethical, and spiritual responsibility is refused to the father as the best ethical model for his children; rather, school teachers, psychologists, and counselors may alternatively take this responsibility. In cases of overlapping marriages or of the wife's multiple love relations, the child might choose to be brought up either by his/her father or stepfather, mother or stepmother. In all this, the postmodern male continues to surrender his ethical role as if he committed the

[119] In opposition to selfhood as *al-muru'ah*, non-self translates here the Arabic '*imma'iyyah*,' which is a very rare morphological combination made of the first personal pronoun *ana* (I) and the prepositional pronoun *ma'ak* (with you) with the meaning 'I am with you' or 'I am following you.' Thus the Arabic non-self, *imma'iyyah*, would resemble the combination: I-am-followism.

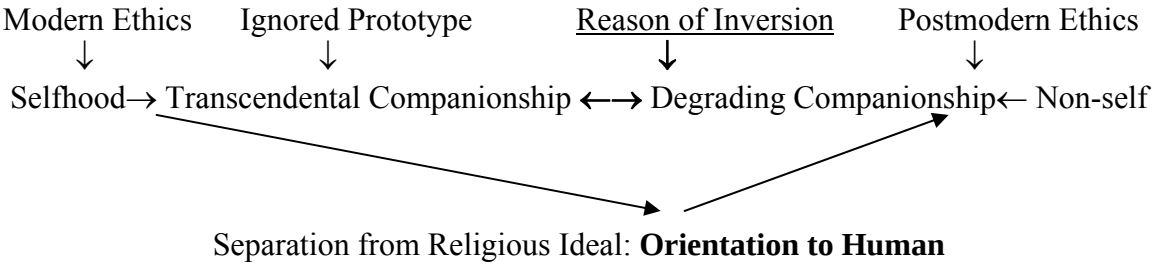
first sin and is obliged to seek redemption (RAH 117), Thus, Taha asks the following questions: What inverted the ethics of selfhood into the ethics of non-self? What is the desired ideal in the ethics of selfhood? What prototype of the ideal has been disregarded?

Selfhood is the ethical particularity of one's role. According to Taha, a father is a self if and only if he seeks the utmost fulfillment of the rights and duties associated with his decision of establishing a family. What holds for the father holds, *mutatis mutandis*, for the mother and the children. In order to find out the reason for the ethical inversion of selfhood into non-self, Taha turns his attention to the collective and social nature of selfhood. This requires an acknowledgement of the particularity of the other's coexistence with oneself, what in Arabic is called *al-ma'iyyah*, companionship. According to Taha, this inversion is caused by "degrading companionship" (RAH 118), a state that – contrary to "elevating companionship" – does not generate virtue in others. For instance, the fact that a husband is only attracted to the physical beauty of his wife, while his wife is only interested in his money, is a degrading companionship (RAH 118): both husband and wife are degrading each other because of their lack of selfhood. Conversely, elevating companionship, i.e. selfhood, uplifts the will to generate virtue in others and to fulfill one's role in the family. In short, elevating companionship is the ideal of the ethics of selfhood (RAH 118). But why is the postmodern family such a stranger to this ideal?

Taha's response is that elevating companionship must achieve the highest possible virtue (RAH 119), what he refers to as "vertical companionship." To the question whether it would be the prototype of elevating companionship, he responds by saying that verticality is a limited notion since it is "imprisoned by its spatial property"

(RAH 119). Thus, "vertical companionship" does not help achieve the highest possible virtue. Would "progressive companionship" then be the prototype of elevating companionship? The answer is again negative, as progress retains homogeneous traces of the origin that the highest possible virtue seeks to exceed. The prototype needed for the elevating companionship should contain neither material properties nor homogeneousness traces, but merely the attribute of qualitative uplifting (RAH 119). Taha argues that nothing uplifts the self qualitatively without material properties and previous homogeneousness as much as "transcendental companionship," since it seeks to overcome the innate limitations of space and matter. Here, "transcendental companionship" consists, for example, in observing God's face watching the deeds of his creatures; this is what is needed to achieve the highest possible elevating virtue. The ignorance of transcendental companionship prevents the postmodern family from achieving the ideal of the ethics of selfhood. Watching God's face generates virtue and is given an important signification in Islamic theology and mysticism.

For Taha, the inversion of modern selfhood into degrading companionship, and thus into non-elf, is the result of being ultimately oriented to the human, which is by nature limited, whereas the transcendental is limitless. Such postmodern orientation is illusive and results in treating the other not as an end but as a means. Such a state of affairs can be illustrated by the following figure:



Yet, the idea of observing God's face watching the deeds of his creatures can also be inverted into non-self as a direct outcome of the orientation to God alone. Thus the proposed transcendental companionship can have a fate similar to degrading companionship. Jurists of divine laws have given great attention to the deity, to the extent that this attention can lead to forgetting justice and its necessity for human beings. God's face, I suggest, might then be called 'blinding companionship.' This is why slavery continued to thrive under Christian and Muslim jurisprudence. Orientation to the deity is always pregnant with the possibility of unethical consequences. Here, Taha unjustifiably assigns immunity to a particular kind of orientation, and his argument regarding the orientation to the deity loses ground.

5.2.6.2 The Inversion of Commitment into Privilege

The ethics of commitment in the modern family is a call for performing the duty of every proven right (# 5.2.5.2). However, the concomitance of right and duty is not deemed necessary in the postmodern family. In fact, the very term 'duty' is disappearing from most of the current discourse, as though it required obedience to an authoritarian power typical of a dark age. Instead, right is disassociated from its concomitant concept, i.e., duty; this leads to a situation in which some elevate mere fancies to the status of rights. The latter takes on several aspects. For example, Taha thinks that the rights of the child have "increased" from merely receiving care to being legally enshrined. Rights have also been "expanded:" a child can prosecute his/her parents in certain circumstances and have the final say about his/her custody according to some divorce laws (RAH 121-122). Other rights have been "perpetuated" regardless of contextual change or unfavorable consequences, such as the right of homosexual couples to adopt

children; this required right "contradicts" the right not to have children claimed by anti-family and "no-kids" groups (RAH 122). The call for rights has been "fanaticized," for instance, with regard to equal rights for the homosexual family and the traditional family, or for a single mother and a married woman (RAH 122).

On the basis of the distinction between the right concomitant of duty and the one that is not, Taha states that "the right that is not associated with duty is a privilege" (RAH 123).[120] Right is self-balanced and therefore harm-free, whereas privilege may generate harm when seen from "the perspective of the most privileged individual in the postmodern family, i.e., the woman" (RAH 123). Women, Taha claims, have gained several privileges in the postmodern era such as the separation between: 1) 'sex' and 'procreation' due to promoting the alleged 'right' to contraception and abortion; 2) one's 'body' and 'pregnancy' due to new bio-technologies such as test-tube babies and surrogate motherhood; 3) 'socially constructed parenthood' and 'biological parenthood' in cases such as semen donation and adoption; 4) the original 'father' and the 'child', such as in the case of the unknown father due to multiple lovers; 5) 'sexual pleasure' and 'marital faithfulness', as in the case of common law marriage (in France, the so-called PACS contract); and 6) 'gender and sexual orientation' for instance in homosexual relationships (RAH 123-4).

Such a separation between inseparable facts or values causes what Taha considers an inversion of the modern values of commitment. Marriage is declining and divorce is escalating, the birth rate is declining and ageing is on the rise, teenage pregnancy and

[120] In Arabic, both *haqq* (lit. right) and *hazz* (lit. privilege) refer to someone's portion of a particular property. The way of receiving this property is a result of law *haqq* (lit. right) and of fortune *hazz* (lit. privilege). The same meaning is found in English, for instance when one says 'I have the right to keep my retirement salary, although I inherited a great fortune from my father.'

sexual deviations are more common than ever (RAH 125). In short, unbalanced alleged rights, i.e., privileges, have shaken the basis of the modern family, leading Taha to ask the following questions: What inverted the ethics of commitment into privilege? What is the ideal way to achieve the ethics of commitment? What is the prototype of the ideal that was disregarded?

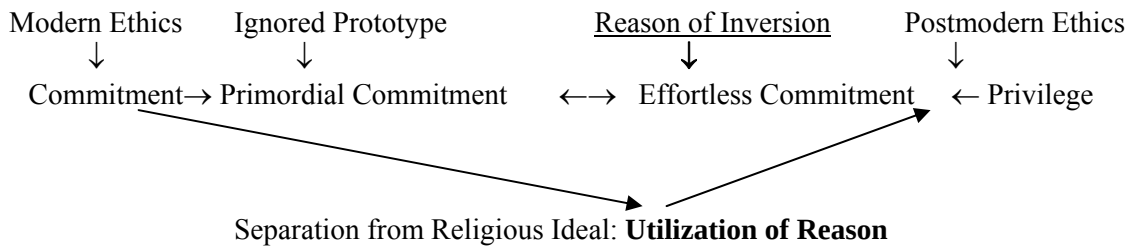
The reason for the inversion of the ethics of commitment into the ethics of privilege is what Taha calls "effortless commitment" not derived from an external power or legitimate authority, but from one's internal self in the form of freely chosen preferences and dislikes performed without self-struggle (RAH 126). Thus, there are two kinds of commitment: the one pertains to material goals only (for instance, financial support of the family), whereas the second aims at ideals and spiritual values (for instance, offering love and guidance to family members). Taha calls the latter "valuable commitment," which is spiritual, although based on material necessities (RAH 126). An example of this intermingling of the material and the immaterial is divorce, where the father's financial support can still exist, correlating effortless commitment, while love does not and thus valuable commitment is excluded. It is easy to see that valuable commitment is the prototype of the ethics of commitment. And yet, why does the postmodern family ignore it?

Taha's response is that the ideal of valuable commitment "must fulfill the criterion of the widest and firmest structure of values in guiding human action" (RAH 127). Does that mean that the needed prototype could be the "original state" of natural rights prior to the formation of civil society, as suggested by contractualists like Hobbes and Rousseau? Taha denies such a possibility because it is simply assumed by its

authors, because assumptions are not the firmest of values, and particularly because such an original and natural state is based on rights that are not any better than duties (RAH 127). Here, the defended rights could turn into privileges and the desired duties into hardships, whereas privileges and hardships are incompatible opposites.

If the original state of the contractualists does not work, would the needed prototype be "human nature"? For Taha, human nature was viewed by Descartes as a system of objective features that make up the reality of the human being (RAH 128). Objective features are, however, not the needed prototype mainly because a system of objective features is descriptive, while "human nature" should be prescriptive and dedicated to explain what ought to be.[121] For Taha, the prototype needed for valuable commitment is derived from the Qur'anic concept of primordial creation (*fitrah)*, which refers to the inborn ideals a human being revives in his/her soul in order to act rightly on their basis (RAH 128). Because reasoning is theoretical and indirect, and because primordial nature is directly intuitive, the latter should be the basis of reason. The unawareness of primordial creation in the modernist principle of "utilization of reason" prevents a postmodern family member from achieving a valuable and balanced commitment between right and duty, and therefore from fulfilling the ideal of the ethics of commitment. The unawareness of this ideal results in effortless commitment and leads the postmodern family members to become commodity maximizers sinking into endless privileges and losing the readiness to perform duties. This can be illustrated in the following figure:

[121] Here, Taha seems uninformed about Bunge's naturalist way of thinking that bridges the gap between facts and values or 'is' and 'ought;' the latter, thus, does not think the descriptive-prescriptive gap is absolute.



When Taha refers to the notion of primordial creation in order to explain the inversion of the ethics of commitment into an irresponsible demand for privileges he does not clarify sufficiently the meaning and function of this notion. This is probably because he does not clarify either what he means by the ultra-rational character of divine Islamic revelations (#5.2.4.1). Should primordial creation be interpreted in the light of whatever historical conditions existed at the times of Prophet Muhammad, that is, seventh-century Arabia? Besides, had Islam emerged in another part of the world, the Islamic understanding of family could have been a matriarchic rather than a patriarchic one, dictated not by human nature, but by socio-historical conditions. Moreover, Taha's so-called valuable commitment derived from the notion of Islamic primordial creation may also fall prey to its own proper inversion. As the history of religions repeatedly shows, the intentions of the founding prophet of a religion may have been altered by dogmatic followers and religious institutions emphasizing the form instead of the goals of the founder's commands. An example from Islam is the case of polygamy, which strictly advises men to marry those women who have no male supporter in the context of the battle of *Uhud*. The Qur'an states: "And if you fear that you cannot act equitably towards orphans, then marry such women as seem good to you, two and three and four; but if you fear that you

will not do justice (to them), then (marry) only one."[122] For most of Islamic history, jurists understood polygamy as an unrestricted license for men, and they turned a blind eye to the textual restriction of needy orphan girls after the battle of *Uhud*.[123] The problem gets even worse when polygamy is concealed under the notion of primordial creation and criticism avoided on the basis of respect for divine revelation. If the notion of primordial creation is defined, then the possibility of masking historical ethics under universal titles would be eliminated. In both modernistic and Islamic cases, values are subject to inversion. However, modern values can be criticized and changed, while under revelational ethics they rarely are.

5.2.6.3 The Inversion of Happiness into Playfulness

For the modern family, happiness is the fruit of performing and preserving duties. Both of these aspects are declining in the postmodern family (RAH 129). Desire has replaced duty as the center of inspiration, a desire which has become a right that motivates the family members to act according to "individualistic", "material", and "ephemeral desires" (RAH 129-131). The more one feels enjoyment and pleasure, the more one longs for desires centered on material and sensual pleasures: good examples of this are today's marketing and shopping fever, as well as sexual hysteria (RAH 130). Sexual pleasure, not love, is what brings partners together, and the relationship between partners is conditioned by agreeing on each other's desires. Partnership becomes a continuous process of negotiations over endlessly renewed concerns for pleasure, instead

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[122] Taken from the three translations of the Qur'an available online from the Center of Muslim-Jewish Engagement at the University of Southern California. This verse is cited at the following link (Qur'an 4:3): http://www.usc.edu/schools/college/crcc/engagement/resources/texts/muslim/quran/004.qmt.html

[123] Jumana al-Ahmad stressed this argument in her essay, "The Values of Justice and Ethics in Islam and Women's Rights: Polygamy as a Case Study" (Charlottesville: University of Virginia, 2011 Manuscript). This is also suggested by contemporary authors such as Nasr Hamid Abu Zayd, *Dawa'ir al-Khawf: Qira'a fi Khitb al-Mar'ah* (Beirut: al-Markaz al-Thaqafi al-'Arabi, 2004), 216-217.

of a stable cooperative life (RAH 131). Accordingly, the ephemeral desires of both partners reconfigure the initial substance of the marriage agreement; nothing is regarded as permanent, essential, or holy. One's search for individualistic, material, and ephemeral desires has nothing to do with ethical virtue associated with the search for happiness. Such orientation is rightly named *play* as "a physical or mental activity that has no purpose but enjoyment" (RAH 131). Here, the ethics of happiness has been transformed into a childish amusement leading to so-called "creative madness" (RAH 132). Such madness consists in the steady effort to escape boredom and search for variety, regardless of whether one is deviating from what is good. According to Taha, the modern ethics of happiness has turned into playfulness.

The best example of playful ethics is the child. The child is not just a player but also the object of the parents' playing. Taha ventures to describe the child's postmodern condition as a much desired doll before pregnancy, although pregnancy, even if desired, can result in changes of mind leading to abortion. Playing with the child continues after birth: a child may be desired by a married or an unmarried couple, by a heterosexual family or by a homosexual couple. This playfulness forces the child to live in multiple families or reassembled families out of the conviction that it is the best way for the child to cope with the rapid changes of the postmodern age. All this makes Taha ask the following questions: What inverted the ethics of happiness into playfulness? What is the ideal sought in the new ethics of happiness? What is the prototype of the ideal that was disregarded?

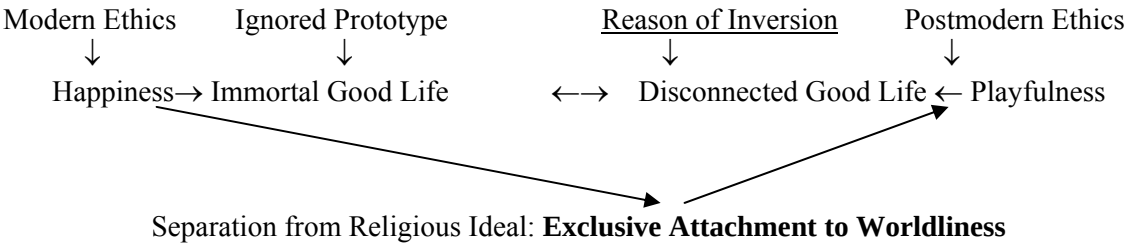
According to Taha, happiness in modernity does not refer to pleasurable instances with sexual pleasure standing on top, but to a state of satisfaction and perfection felt on a

daily basis (RAH 135). Thus, the ideal sought for in the modern family is the "good life," a life in which humans enjoy "goods."[124] The good life can either be connected or disconnected. Examples of the latter are discontinuous physical pleasures such as having fun with one's spouse or children, while the former is the continuous enjoyment of spiritual goods, whether associated with material pleasures or not, as in keeping a promise or achieving peace of mind. The reason for the inversion of the ethics of happiness into playfulness is what Taha calls the "disconnected good life" (RAH 135). The question is: if the ideal of the ethics of happiness is the connected good life, why is the postmodern family unaware of the prototype leading to that ideal?

The ideal of the so-called "connected good life" is reaching the highest level of connection (RAH 136). Would the needed prototype be the "continuous good life"? Although continuity entails the idea of connection, it limits it in terms of space and time. Continuity has, *de facto*, a beginning and an end; therefore it cannot be the sought for prototype. Would it be then the "lasting good life?" Although lasting is continuous and without end, it has a beginning and therefore it does not meet the criterion of the needed prototype. What is needed is limitless connection without beginning and end. The prototype needed for the connected good life is "immortality" (RAH 136-137). Good life in the postmodern family is derived from disconnection with religion, exemplified through exclusive attachment to worldliness. Yet, immortality cannot be derived from worldliness since the latter has a beginning and an end. Unaware of the immortal good life, the modern ethics of happiness inverts into playfulness and even sadness. Both disconnection with religion and unawareness of immortality lead to exclusive relationship

[124] *Al-khayr* in Arabic is a translation of the English 'good.' The plural of the Arabic *khayr* is *khayrat*, which has at once a symbolic and a material sense. Although 'goods' in English does not entail these two meanings, it is used here as a possible translation of the Arabic *khayrat*.

with worldliness and to the perversion of the ethics of happiness. Accordingly, postmodern family members become incapable of realizing their role and we have the following figure:



Taha's argument points out that the ethics of happiness has been inverted into playfulness due to exclusive attachment to worldliness. The scenario of reward and punishment in an afterlife proposed by Taha is based on the absolute connection of the self throughout spaces and times and on the notion of immortality that entails achieving connection with the whole world perpetually without a beginning, and eternally without an end. And yet, not only wordliness, but also 'afterworldliness' is vulnerable to inversion, since there is no way to live a good life without struggle, nor is there a shortcut to the good life. The asceticism of many mystic Muslims is a good example of how 'afterworldliness' can lead to total renunciation of worldly pursuits for the sake of devoting oneself completely to spiritual work. 'Afterworldliness' has the potential to lead to dangerous consequences.

A faithful Muslim might not sleep at night if there were no immortality, for there would be no reward for his obedience and no punishment for his enemies. Equally, a systematic philosopher cannot sleep at night if his ontology, epistemology, and ethics are not in harmony. The religionist gives priority to his psychological serenity while the systematic philosopher gives priority to his cognitive sanity. There is a price for the argument in favor of immortality over against mortality. Accepting immortality entails assigning the human being a distinctive nature that escapes the whole biological realm of

life and death. This opens a gap in the whole scientific worldview, in which some items are exempted from its domain without a clear justification. Some, including Taha, are willing to accept this price. Others find more cognitive sanity in accepting modern ontology, epistemology, and ethics.

5.2.7 Taha's Observations on Ethical Inversions

The dilemma of the postmodern family consists in the very separation from religious principles put forward in the modern family, a separation taking shape in the orientation to the human alone, in the utilization of reason only, and in the exclusive attachment to worldliness. Paradoxically, the postmodern family is both an offshoot of the modern family and its antithesis: it adopts the separation from religious principles, yet it breeds what the modern family did not choose as models – namely the ethics of non-self, privilege, and playfulness. The reason for this dilemma, Taha suggests, is that the postmodern family sought to carry the spirit of "elevating companionship" without the secret of "transcendental accompaniment," to carry the spirit of "valuable commitment" without the secret of "primordial commitment," and to embody the spirit of the "connected good life" without awareness of the "immortal good life". This contradictory situation is particularly present in "degrading companionship", "effortless commitment", and the "disconnected good life" (RAH 139).

For Taha, functional differentiation effective in Islamic modernity is capable of fulfilling the ideals of modern ethics: first of all, bringing about the companionship of the transcendental, i.e., God, by showing the family member how to acknowledge otherness while preserving one's ethical particularity; second, by guiding the family member in how to perform the commitments of the innate values of primordial creation that increase

the ethics not only of one's own self but also of humankind; finally, by enabling every life to resemble immortal life while remaining aware and responsible of the consequences, even if these consequences extend to generations in a very distant future and even to immortality (RAH 139). However, the alternative orientations of Islamic modernity – namely, orientation to God rather than man, primacy of revelation over reason, attachment to the afterworld rather than worldliness – have already been inverted in ways that Taha did not anticipate: orientation to the supernatural, primacy of the irrational, and attachment to the illusory. The three abovementioned cases of slavery under divine law, licentious polygamy beyond restriction to needy orphan females, and ascetic renunciation of worldly affairs, prove beyond a doubt that Taha's proposals are as fallible as the modernistic ones.

5.2.8 Taha's Justification of the Spirit of Modernity

In the conclusion of his book, Taha asks a question that might be viewed as a possible criticism of his proposal: "Why bother with arguing for the spirit of modernity while humanity has moved to postmodernity?" (RAH 265) The response to this question comes in four stages identified by Taha as follows: 1) integration in conceptual global space; 2) controversy in the meaning of postmodernity; 3) promoting the spirit of modernity; and 4) distinctiveness of the Islamic application.

5.2.8.1 Integration in Conceptual Global Space

Together with the globalization of products, technological inventions, lifestyles, entertainment, and arts, there is also a globalization of concepts which tends to set apart and even replace local concepts. Accordingly, Muslim nations are left with two choices: either coercive or voluntary integration in conceptual global space (RAH 266). Coercive

conceptual integration would destroy one's critical and creative capabilities, and deprive oneself of authenticity. Muslim nations will not overcome coercive integration by simply ignoring it or by a superficial replacement of foreign concepts by traditional and local slogans. Ignoring conceptual globalization can hinder the eventual applications of these concepts to worldly affairs. Also, this attitude can consciously or unconsciously sneak into the thought of the nations invaded by globalization through the change of their media and of social discourse. On the other hand, a superficial replacement of foreign concepts by traditional and local slogans can be viewed as not genuine, be deemed unsuitable and outdated, and will be eventually rejected.

The proper choice according to Taha should be voluntary and not coercive. "Voluntary conceptual integration", he argues, enables us to get involved in the conceptual global space through 1) utilization, 2) modification, 3) criticism, and 4) alteration, all of which are signs of mature and lively enculturation (RAH 266-267). These processes facilitate the invention of new relations and a creative application of global concepts over against mere imitation either of the modernity of others or of one's own traditions, both of which are "blind reproductions" (RAH 267). Thus, the ideological chasm between traditional self and foreign modernism can be overcome (RAH 267-268). Traditional Muslims who are hostile to many aspects of modernity cannot but welcome the creativity called for by the spirit of modernity, since such a creativity can be viewed as an authentic exercise of the highly revered concept of *ijtihad*, a term that refers to the cognitive struggle for problem solving particularly in Islamic legal thinking. This is also in line with the proper impetus of modernity, according to which any internally creative

thinking should work out its own categories and concepts, rather than viewing the world according to concepts invented by others, such as the concept of postmodernity.

5.2.8.2 Controversy on the Meaning of Postmodernity

According to Taha, some view postmodernity as a disconnection with concepts such as absolute truth, pure self, directive progress, monolithic knowledge, and linear history, or as the end of rationalism, humanism, objectivism, positivism, or historicism (RAH 268). Others, like Habermas, do not find postmodernity to be a disconnection with modernity, but rather a rectification of some of its problems and an expansion of some of its limits (RAH 271). Another group sees postmodernity as counter-Enlightenment and thus as an apostasy of the Enlightenment project. Finally, it is seen as an extension of modernity and thus as a 'second modernity.'

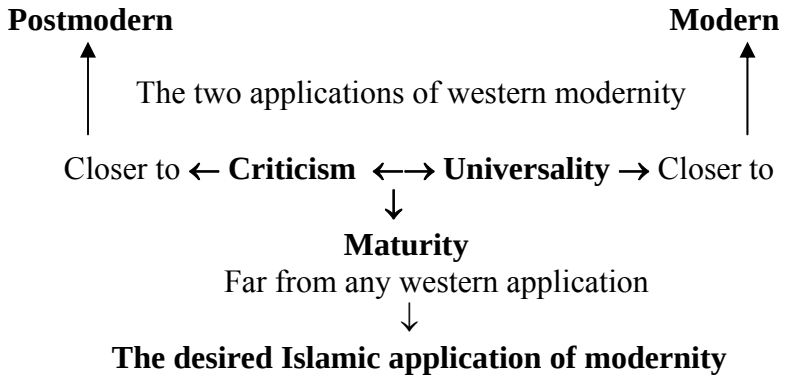
If we survey the literature that defines postmodernity, we would find nothing in common other than viewing it as a response to modernity (RAH 268). Such a response views postmodernity, Taha suggests, either as "the end of modernity" or as "a second modernity." For him, neither of these two stances is conceptually appropriate. If it is a second modernity, how could it still be called modernity, since it promotes concepts and principles opposed to modernity? A counter-modernity cannot be called 'second modernity,' Taha argues (RAH 268). On the other hand, to think of postmodernity as "the end of modernity" would be an exaggeration, since the realms of science, technology, industry, economy, and law are still preserving the ideals and applications of earlier modernity. Besides, postmodernity pertains only to some literary, artistic, cultural, and philosophical issues (RAH 269). Therefore, Taha thinks that his own way of understanding the 'spirit of modernity' is a better approach.

5.2.8.3 Promoting the Spirit of Modernity

The alleged opposition between 'second modernity' and 'end of modernity' is based on the confusion between 'ideal modernity' and 'actual modernity.' The so-called second modernity is in fact a move from one actual modernity into yet another actual modernity (RAH 270). However different, both forms of modernity are promoting the same spirit. As to the so-called end of modernity, it assumes that postmodernity possesses what modernity lacks and that it is only a new supplementary application of the same common spirit after the occurrence of problems in its previous applications. It is worth noting that many of the postmodern philosophical and literary ideals of the 1960s, such as the distrust of reason and the rejection of traditional literary styles, are very similar to the ideals promoted by modernist artistic movements in the early 20th century. The difference between modernity, postmodernity, and any other past or future modernity situates itself in relation to the wide and universal space of the spirit of modernity and its applications (RAH 272). The link between modernity and postmodernity is established by the spirit of modernity itself.

5.2.8.4 Distinctiveness of the Islamic Application

The relation between the proposed Islamic application of the spirit of modernity by Taha and the western applications of both modernity and postmodernity needs further clarification. With regard to the three basic pillars of the spirit of modernity – criticism, universality, and maturity (see above, # 5.2.1) – Taha finds that criticism is closer to postmodern application and universality is closer to modern application, whereas maturity is close neither to the modern nor to the postmodern applications (RAH 273). This can be illustrated in the following way:



The Islamic application of criticism – including its two foundations: rationalization and differentiation (see above, # 5.2.4.1) – is closer to the postmodern application rather than to the modern one. The reason is that rationalization in both Islamic and postmodern applications seeks to expand reason and go beyond its traditional limits. However, Taha adds, in the Islamic application, the expansion is towards religious spirituality and morality, while in the postmodern one, it tends toward myths, new-age trends, and individualistic spirituality. Differentiation in both the Islamic and postmodern applications aims at "softening the barriers" of traditional stagnant dualisms, strict differences, and stifling borders (RAH 272). However, the Islamic application softens the barriers for the sake of functional and teleological fusion, while the postmodern one does so for the sake of liquidizing identities, which causes the destruction of ideal behavior and its structure (RAH 272).

The Islamic application of universality – including its two foundations: extensibility and generalizability (see above, # 5.2.4.2) – is closer to the modern rather than the postmodern application (RAH 274). The reason for this is that the Islamic application of extensibility is similar to the modern application in seeking "compressive extension." Yet, the modern application extends horizontally, for instance legally, commercially, and industrially, while the Islamic application extends vertically into

higher virtues and infinite transcendental meanings (RAH 274). Also, the Islamic application of generalizability is similar to the modern application in seeking universal generalizations that handle all the dimensions of being. What is different here is that the modern application of generalizability pertains to human beings and nations, while in the Islamic application it is widened to encompass all creatures known, whether living or not. Taha elaborates when he deals with the environmental issue, which cannot be treated here.

The Islamic application of maturity – including its two foundations: independence and creativity (see above, # 5.2.4.3) – is close neither to the modern nor to the postmodern applications. Independence, in Taha's desired Islamic application, takes the form of liberation from external powers that invade and loot its riches. On the other hand, independence in the modern application takes the form of liberation from the internal authority of religion and traditions; in the postmodern application it takes the form of liberation from dominant philosophical systems or "*grands récits.*"[125] The Islamic application of creativity is connected to traditions by contemplating and expanding the virtues of its particularity (RAH 273-274). However, creativity in the modern application is disconnected from its own traditions, whereas it is, in the postmodern application, connected with any traditions, Buddhist or pagan, through fragmentary collage.

Taha explains that his systemization, which is based on the distinction between modern, postmodern, and Islamic applications of the spirit of modernity, has achieved a voluntary and creative integration into the conceptual global space (RAH 275). In

[125] See, for example, Jean-Francois Lyotard, *The Postmodern Condition* (University of Minnesota Press, 1984). For Lyotard, modern principles such as progress, rationality, and development give rise to grand narratives or mythological stories of the modern era on par with the religious or superstitious narratives of the pre-modern eras. Lyotard's conception has been radically criticized by Peter Sloterdijk in his Sphere-trilogy (more than 2500 pages) published between 1998 and 2004.

contrast to both Arab secularists, whom he accuses of being mere imitators of the West, and Muslim traditionalists, who by refusing to engage with philosophical modernity are involuntarily forced to adopt its artifacts and ideas, Taha's Islamic application of the spirit of modernity is a significant advancement in the development of this spirit. It opens new opportunities that have not been contemplated by the inventors of modernity itself because it calls for the acknowledgment and the achievement of the higher ideals of the spirit of modernity, which goes beyond all the known actualizations of modernity.

Conclusion

Section 1.2 investigated the dynamics of worldview construction and articulated a preliminary answer proposed by Nicholas Rescher. This answer suggests that worldview construction can be undertaken mainly by systematization. Worldview construction seeks an overall *systematization* (coherence) of our *continuous* big questioning and answering that squares with the *viable* experience through interpretive *distinctions*. In particular, the current Atlantic and Continental philosophical context, which contests the very validity of systemization, highlights the place of Bunge as one of the few current philosophers who swim against the current by seeking to bring contemporary philosophy back to its original task of worldview construction. In order to overcome the fatal deficiency of incoherence, apparent in many modern worldviews, Mario Bunge's thought has proved to be an ideal case amongst current philosophers who have faced the challenge of constructing a coherent modern worldview. This is the reason why Taha was chosen as a counter example, since he aims at constructing a systematic worldview, though from a religious point of view.

Taha's purpose in *Spirit of Modernity* is to criticize western modernity and to develop its authentic applications to Islamic culture today and tomorrow. The last chapter (see above, # 5.2.4, # 5.2.5 in particular) suggests a critique of Taha's positions. Let us now indicate some important implications of Bunge's worldview for the modernization of Arab-Islamic philosophy as seen by Taha.

Since humans share the same globe, there are more similarities than what our racial, religious, nationalistic, geographic, and ideological differences may suggest. We share the same physics, chemistry, biology, and brain psychology. The similarities are not

limited to the natural domain. In this age of globalization, we share also a common global economy, growing international political relationships, and an information flow via the Internet, some bases of international law, an increasingly interrelated entertainment culture, a similar scientific and technological language, and finally the same influence by the environment. The greatest difference lies in culture, which pertains to language, aesthetics, and ethics, according to Bunge's tree of knowledge (see above, # 3.4). This is where the major difference between Taha's and Bunge's worldviews lies.

In response to the question, 'What does Taha's spirit of modernity have to do with Bunge's worldview?' we point to the fact that culture, whatever divergence there may be in its conditions and ramifications, is still part of the greater tree of knowledge that has a common trunk and roots. Most of Taha's spirit of modernity focuses on the philosophy of culture and leaves out current developments in ontology, epistemology, and the social sciences. This is also the case in his other ten books, published only in Arabic thus far. Out of the three basic features of modernity – namely, maturity, criticism and universality – Taha emphasizes maturity and criticism. Maturity is viewed either as independence from, or as connection to, a particular tradition, and criticism is viewed either as total rejection, or as reasonable acceptance of, a particular religion. And yet, Taha's treatment of universality is less universal than what the term means. Taha's interpretation of modernity is certainly restricted. Bunge's scope, in contrast, is much more broad and fundamental: it pertains to the 'system of basic philosophy' in the first place and is based on the open possibility of foundational change, which is more than what Taha seeks to achieve in his modernization of Islamic culture.

The merit of Taha's focus on the spirit of modernity consists in his attempt to achieve philosophical sovereignty in the Arab world by meeting the requirements of coherence. His argumentation first proposes axioms, defines and extends them to their opposites, and then seeks actual examples he deems convincing. Taha successfully departs from the narrative, descriptive, imprecise, and sometimes contradictory discourse of many Arab-Muslims thinkers.[126] Equally interesting is the fact that his philosophy is articulated in a clear and attractive poetic Arabic with its rich and implicit literary meanings taken from the Qur'an, prophetic traditions, Arabic literatures, and Islamic scholasticism, all of which constitute the common background of his Arab audience. In the second book of his yet to be completed multi-volume project, *Philosophology 2: Philosophical Discourse I: The Book of Concept and Etymology*, Taha shows the influence of German language and literature on Heidegger's etymological construction of concepts, and he suggests that his *Philosophology 2* takes the Arab student of philosophy on a practical tour of "the factory of philosophy."[127] Taha's linguistic mastery not only familiarizes the Arab-Muslim reader with his philosophy, but it also revolutionizes the process of writing Arabic philosophy clearly and beautifully. His meticulous and impressive effort is, to a large extent, confined to conceptual and linguistic problem solving rather than real world problem solving rooted in the general tree of knowledge. Such an emphasis on language in Arabic thought in general, classic or modern, is what ʻAbd Allah al-Qasimi criticizes in his *Arabs: A Mere Vocal Phenomenon*.[128] Al-Qasimi

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[126] This might be seen for instance when Shaykh Yusuf al-Qaradawi, the head of the Muslim Scholars Council, goes beyond his Islamic law specialty and tackles cultural and philosophical issues for instance in "Islam and Secularism Face to Face" (*Al-Islam wal 'Almaniyyah wajhan liwajh.* Cairo: Dar al-Sahwah, 1998).

[127] Taha ʻAbd al-Rahman, *Fiqh al-Falsafah 2: Al-Qawl al-Falsafi I: Kitab al-Mafhum wal-Ta'thil* (Beirut: al-Markaz al-Thaqafi al-ʻArabi, 1999), 429.

[128] *Al-'Arab Zahirah Sawtiyyah* (Paris: Muntmartar, 1977).

does not focus simply on aspects of separation between talking and acting in Arabic culture, but also on the overemphasis on language that makes linguistic mastery a goal in itself rather than a means to other goals. Yet, Taha cannot be more correct when he asks the Arab philosophers "not to let others think and philosophize on their behalf, because thinking is one's own responsibility" (RAH 36). What service does Taha render to the modernization of Arab philosophy by building a nest, if not a cocoon, inside a tree of knowledge already built by others? The narrow scope of his cultural philosophy that claims to modernize Arabic philosophy raises problems related to the historical, efficient, and foundational soundness of his system.

From the outset, Taha declares his departure from history and his preference for a conceptual definition of modernity (see above, # 5.2.1). Such an ahistorical view refuses to see modernity and cultural philosophy in general in the context of its long evolution.[129] The following condensed paragraph sums up an example of historical awareness in the modern world as observed by Marx and Engels in their *Manifesto of the Communist Party:*

> The discovery of America, the rounding of the Cape, opened up fresh ground for the rising bourgeoisie. The East Indian and Chinese markets, the colonization of America, trade with the colonies, the increase in the means of exchange and in commodities generally, gave to commerce, to navigation, to industry, an impulse never before known and thereby, to the revolutionary element in the tottering feudal society, a rapid development.[130]

By refusing to see the flux of history and its chain of causalities, Taha's 'spirit of modernity' becomes a conceptual network detached from reality, though nevertheless

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[129] A very different view on the evolution of modernity is developed in Alain Touraine, *Critique of Modernity* (London: Blackwell, 1995). Translated into Arabic by Anwar Mughith as *Naqd al-Hadathah* (Cairo: al-Mashru' al-Qawmi lil-Tarjamh, 1998).

[130] Quoted in David S. Landes, *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor* (NY: W. W. Norton, 1999), 168.

designed first and foremost to attack western modernity. Most importantly, Taha does not explain why the basic concepts of maturity, criticism, and universality should supersede other components of modernity such as humanism, naturalism, rationalism, or instrumentalism. Such weakness is absent in Bunge's worldview. Bunge's worldview is rooted in history in its natural and social scope. It sees nature evolving into levels of hierarchy from the atom, to the compound, cell, and brain, culminating in a society engaged in technology. This chain is a brief sketch of historical evolution. Bunge's worldview is historical in its view of society as well. This is evident in his view on values, i.e., the goals of ethics, which in turn need to govern cultural philosophy. For example, primary values target the satisfaction of life and avoidance of death, which admit the modern findings in biology. Secondary values seek the satisfaction of health and avoidance of sickness, which rely on findings in modern medicine. Finally, tertiary values target the satisfaction of happiness and avoidance of unhappiness, which is rooted in modern psychological findings cornering the primacy of satisfaction in personal life. Had Bunge's worldview of the tree of knowledge been outdated or ahistorical, his system of the hierarchy of values would have been greatly different.

The second problem in Taha's system is efficiency as the capacity of the proposed means to achieve goals. It might be argued that Taha's ahistorical system could be justified for pragmatic purposes, given the religiosity of his audience. Yet, pragmatic purposes are short-sighted when they do not address deep and comprehensive levels of reality and history. Pragmatic tactics, if not based on a foundational view, will clash with reality sooner or later. This applies to Taha's objective of philosophical sovereignty: if successful, sovereignty will have to address, at least on the theoretical level, the issues of

political disloyalty, economic exploitation, cultural eradication, and psychological alienation (see above, # 5.1). Taha's conceptual analysis is all too detached from social concerns; actual problems are overshadowed and targeted inefficiently.

Taha has presented a devastating critique of the postmodern family with its ethics of non-self, privilege, and playfulness (see above, #5.2.6), and one might be impressed by the breadth of this critique. However, his religious proposals also are subject to inversions, and he needs to justify what he suggests regarding transcendental accompaniment, primordial commitment, and immortal good life (see above, #5.2.7).

The broad religious background Taha takes as an unquestionable given leads further to the 'non foundational' character of his philosophy. Concentrated on what his local Islamic cultural domain proposes, he does not attempt to investigate the "six Ws" that a proper systematic philosophy has to rethink anew (UtW 58 – see above, # 3.2). There is more to philosophy than what cultural Islamism or modernism has to propose. The burden is still on the modernizers of Islamic philosophy to find up-to-date, harmonious, and feasible answers to the questions related to the big "six Ws." These questions are conditioning all cultures, Islamic and otherwise, in the midst of the philosophical predicament all humans must ultimately face.

According to Rescher's view of what constitutes worldview construction, Bunge's system certainly qualifies. Bunge's worldview consists in the harmonious synthesis of ontological materialism, epistemological realism, and ethical agathonism. His ontological materialism is not a naively physicalist one, but is rather emergentist. His epistemological realism does not presume accurate mirroring of, but rather partial correspondence with, nature and thus perfectibility with regard to truth. His agathonist ethics seeks the

harmonious fulfillment of naturalist bio-psycho-socio values while requiring the proper social environment for justice and welfare.

Bunge's worldview poses a particular challenge to any religious system promoting ontological immaterialism, revelational or prophetic epistemology, and theological ethics. Particularly in religious matters, the process of causality plays a central role in the genesis and development of ontological immaterialism, which makes reference to the existence of inscrutable entities such as deities, demons, and angels on the one hand, and of inaccessible phenomena with reference to an afterlife on the other. Revelational epistemology is rooted in a divine knowledge as revealed to the founding prophet, his disciples, and the occasional occurrence of communication with God after intensive worshiping and good deeds. Visions, dreams, and emotional reactions can also be signs of revelation. A major problem in this revelational epistemology is its rejection of falsification. Therefore, when humankind is found to be a product of a long chain of evolutionary process, how can the claim based on revelation that 'god created man directly' be falsified? It is possible that many educated religious individuals may propose that this religious statement is rather metaphorical and need not be taken literally. Nevertheless, if most or even all of the statements in a religious canon are found to be metaphorical within the progress of historical knowledge, what is the whole point of religious knowledge? Dewey captures this point, saying "the scope of the change is well illustrated by the fact that whenever a particular outpost is surrendered it is usually met by the remark from a liberal theologian that the particular doctrine or supposed historic or

literary tenet surrendered was never, after all, an intrinsic part of religious belief."[131] Rejection of falsification or infallibility can hardly be defended.

Theological ethics is based on the claims of ontological immaterialism and of revelational epistemology. Therefore, when a particular moral norm is enacted, its justification is ultimately referred back to the inaccessible existence of a deity and the truthful knowledge of its revelation. And yet, a great deal of theological ethics are mutually exclusive, and one person's good might eventually be another person's evil in a different sect or religion. In sum, the synthesis of ontological immaterialism, revelational epistemology, and theological ethics has foundational problems in its relation to world, knowledge, and the domain of morality.

Bunge's worldview operates in an entirely different manner. Ontological materialism falsifies the existence of supernatural or innately inaccessible phenomena; whatever exists is the scrutable work either of nature or of humankind. Bunge's ontology also overcomes the shortcomings of nonreligious ontologies that have a phenomenalist or skeptical stance on the nature of existence, while it makes a stronger case against the religious worldview that relies on the supernatural, on miracles, and on the existence of immaterial worlds. Bunge's epistemological realism emphasizes the pointlessness of radical skepticism and subjective relativism with regard to the production of knowledge. It argues for the possibility and desirability of finding out partial truths with the help of reason and experience. Bunge's epistemology overcomes the flaws of nonreligious epistemologies that have unsystematic views on the validation of truth. As a result, this systematic realism makes a more powerful case against a religious worldview that relies on revelation, traditions, and institutional authority as methods of gaining knowledge.

[131] John Dewey, *A Common Faith* (New Haven: Yale University Press, 1980), 32.

Bunge's agathonism invalidates some modernist claims of ethical relativism and nihilism and defends the universality of mutual restriction of human rights and duties. This agathonist ethics also overcomes the difficulties of ethical theories based on emotion, intuition, individualism, or social conventions. Therefore, this justice-oriented agathonism makes a stronger case against the religious worldview, the latter of which relies on a theological basis for morality that has no universal basis other than reflecting, at best, the moral standpoints of a particular historical era.

In short, Bunge's philosophical debate takes place on two fronts simultaneously: the first one consists in his attempt to weed out the contradictory and unsystematic elements in current secular ontologies, epistemologies, and ethical theories. When truth is reduced to usefulness, sense data, or apriori knowledge, it becomes conflictual and cannot generate any mutual corroboration between epistemology and ontology. Thus, one can understand why Hillary Putnam thinks that "the time has come for a moratorium on Ontology and a moratorium on Epistemology" (ChR 6). The second front – rather implicit, but no less decisive – relies on Bunge's attempt to work out a worldview capable of challenging also the coherent religious worldviews. When truth is equated with immutability in the basic foundations, as is often the case in religious worldviews,[132] this has mainly two sides: first, the rejection of the historical character of religious experience and institutions; second, the mere rhetorical claim of an alleged universality.

Given the foundational and systematic answers Bunge's worldview provides, does it meet the needs for the modernization of Islamic philosophy? The answer is negative not only because of some incompleteness in Bunge's worldview, but also because of the

[132] See, for example, André Poupart, *Adaptation et immutabilité en droit musulman: L'expérience marocaine* (Paris: L'Harmattan, 2010), 186.

incompleteness found in analytic and scientific philosophy, which is the general background of Bunge's conceptual domain. Nicholas Rescher can best reveal the incompleteness of Bunge's system. Bunge qualifies him as "the most learned, lucid and fair of us" (MaM v). Rescher indirectly touches the root of Bunge's incompleteness in his paper, "Who Has Won the Big Battles of Twentieth Century Philosophy?"[133] Rescher's paper, based on "*The Philosophiser's Index*",[134] reveals that there are three citations for continental figures for each single citation for an analytic author, which constitutes a clear victory for continental philosophies. Indeed, continental figures managed to pose particular questions and raise the interest of three quarters of the American philosophical community.

If there were no thirst for answers, worldview construction would not have existed. We need answers and we need them now. That is why, when faced with thirst or hunger for answers in the midst of the desert of ignorance, we will drink and eat whatever is available, even if it might lead to our death. Yet, not all worldviews make it to public debate. That is said about the public, not the educated and specialized American philosophical communities that voted with its pens to give Russell, "the most learned man of his time" (M & M ix); only one seventh of the attention given to Nietzsche. An explanation of this specialist vote is that a worldview needs to be both foundational and culturally relative. Kindergarten generally does not include philosophy as part of its curriculum. Most people in their childhood are taught languages, morality, religious notions, and social ideologies much earlier than they are introduced to even the notion of 'philosophy.' Most people come to philosophy, not because it initially called upon them,

[133] This paper is republished and revised in N. Rescher, *Minding Matter and Other Essays in Philosophical Inquiry* (Lanham: Rowman & Littlefield, 2001), 61-68.
[134] N. Rescher, *Minding Matter*, 65.

but because their upbringing and social conditions created so many contradictory ideas and personal hardships that they were motivated to pursue philosophy in an attempt to remedy the confusion of ideas and values. Thus, cultural questions, although at many times superficial, comprise the filter that leads to philosophy. A high school student rarely loses sleep over failing to resolve Russell's logical paradox. Yet the same student may lose sleep over the choice between the 'will to power' or the 'will to knowledge.' In other words, Nietzsche's *Thus Spoke Zarathustra* is more attractive than Russell's *Principia Mathematica*. The concern of our imaginary high school student can also apply to a mind as sophisticated as Taha's. We might call this the choice between foundational and cultural philosophy: 'Russell versus Nietzsche dilemma.' The dilemma can be stated in the following way: a philosophical worldview has to be founded on the deepest roots possible; yet, philosophy cannot be activated but by local cultural concerns that are by nature less foundational. Put differently, cultural concerns are the route to any philosophically foundational worldview, yet this foundation is the basic requirement that should lead to cultural concerns. Bunge's 'systemism,' in many cases, does not directly address cultural questions, but rather is oriented to more refined forms of questions taken from specialized philosophical communities. For this reason, Bunge's 'systemism' might not be applied to the analysis of popular culture for decades to come. Other thinkers are found to be more relevant to the current interest in postcolonial studies, literary studies, gender studies, and aesthetic studies.

The incompleteness of Bunge's worldview is due to its detachment from what Rescher calls "anthropological philosophy," which he defines as "the philosophical study of the conditions of human existence and the issues that confront the people in the

conduct of their everyday lives."[135] Bunge's thought attempts to systemize rational, natural, and social sciences while leaving out a great deal of human sciences. A balance between these two areas of enquiry is missing. Compared to the complexity of Bunge's system, the seemingly unsophisticated concerns of everyday life contribute to the relative advantage that Taha's Islamic system has over Bunge's, despite the ahistorical, inefficient, and non-foundational aspects of Taha's thinking. If Taha has to work out the philosophical basis of his position, Bunge has to care more about the cultural concerns of his audience. In other words, modernization of Islamic philosophy should be better informed about naturalist ontology, realist epistemology, and agathonist ethics, while Bunge's scientific humanism has to be still more humanistic.

[135] Nicholas Rescher, *Human Interests: Reflections on Philosophical Anthropology* (Stanford: Stanford University Press, 1990), 1.

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