Extended Book Review

A review of *Social Fuzziology: Study of Fuzziness of Social Complexity,* by Vladimir Dimitrov and Bob Hodge, 2002. New York: Springer-Verlag, 188pp. ISBN 3798015063. $92.00 USD.

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Since the pioneer work of Zadeh in 1965, extensive mathematic techniques and applications have been developed to study fuzzy systems in different fields of knowledge, particularly in engineering and artificial intelligence. These methods describe and explain fuzziness to reduce or eliminate it in order to develop theoretical solutions and practical applications. Vladimir Dimitrov and Bob Hodge's *Social Fuzziology* does not deal with an application of fuzzy logic or fuzzy mathematics to social sciences (p. 1), nor does it deal with an extension of the research in complexity. Although *Social Fuzziology* deals with the actions of complex entities in a complex space (the human experiential space) this work is not a study of complexity (pp. 47–75).

The book introduces social fuzziology (SF) as a science that studies the fuzziness inherent in the actions of humans as social agents and as the art for coping with fuzziness embedded in our understanding of ourselves and society as its creators and products at the same time. The core of SF is the inseparability of human understanding and social complexity (p. 31), as was recognized by ancient thinkers like Socrates and the Vedic scriptures. Its research approach is holistic, following Socrates' maieutic method of inquiry. From this perspective society is understood as a web of dynamic interactions and interrelationships of people and their natural and artificial worlds that has infinite life (p. 99). This dynamic web lacks wisdom. Its

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collective mind is a set of fragmented human knowledge (p. 101). Thus, it cannot transcend fuzziness; only individuals can transcend the fuzziness of their understanding, developing knowledge and wisdom about our inner dynamics and fuzziness, but society plays a fundamental role in the process. The role of society is not to constrain the individuals' inner drive for knowledge and wisdom, but to promote and support its full development. It is our understanding of ourselves and society that explains our actions as social agents. The factors dominating the dynamics in the complex human experiential space (the space of mind and life-experience) correlate with the kind of behavior we exhibit.

Thus, the human mind and desires are both the sources of fuzziness and key factors for overcoming it. The human mind creates fuzziness by seeking to reduce it, or eliminate it. While our inner drive (passion) for truth and understanding stimulates and energizes thinking that transcends levels of fuzziness about things and ourselves, search for knowledge about the whole of reality (wisdom) creates fuzziness and increases the vulnerability of nature and society when it leads to simplification of the whole and the adaptation of distorted models to analyze and predict unfolding dynamics of reality (p. 29). Human desires also limit the ability to transcend fuzziness when they distract the process of concentration indispensable for productive thinking and understanding to develop (p. 30). The authors examine this paradox employing cases and analysis of recent policy decisions about complex socioeconomic problems.

As different from fuzzy logic and complexity science, fuzziology is not a substantive science concerned with making truth claims about the world. Rather, it is a kind of macro science concerned with the human capacity to make sense of the world (p. 47). Fuzziology goes further than fuzzy logic in exploring the sources, nature, dynamics, causes, and effects of the human fuzziness (p. 67). It studies fuzziness' self-organizing dynamics and how to activate the realization of bootstrapping algorithms in human understanding to stimulate fuzziness to pull itself by its own bootstraps. Fuzziology is concerned with understanding complexity and working with complexity and its methods do not involve simplification of the whole to offer straightforward cause-and-effect explanations. The rules of fuzziology are:

(1) Fuzziness is an eternal companion to any process of knowing and this characteristic of human knowing is the engine that challenge humanity and constantly propels the search for truth and understanding of the reality of life (search for wisdom).
(2) The fuzziness of our understanding has its own dynamics and is emergent. Thus, it cannot be eliminated. As we transcend some levels, evolving dynamics challenge our minds to explore higher levels, which cause fuzziness to move again.

(3) Despite fuzziness's self-organizing potential, conscious efforts must be applied to energize it and move it to higher levels (p. 7).

Thus, a basic postulate of fuzziology is that human understanding and knowing are self-organizing processes that grow from within. The role of human society is to encourage the outward development of the individual's inner drive for knowledge and wisdom (p. 2).

(4) There are detrimental consequences to attempts to reduce of eliminate the fuzziness of understanding the impacts of human actions—for example, by simplifying the whole or crystallizing fuzziness into patterns:
   (a) It stops the dynamic of fuzziness, which is necessary for continuous learning and without which we risk falling victim of the complexity of life dynamics;
   (b) It leads to catastrophic socio-economic policies.

It is the desire to eliminate fuzziness to find simplified solutions to justify economic, technological, or socio-political decisions that, according to the authors, is responsible for the most serious maladies of today's society—such as environmental destruction, disconnection of economy from society, extreme inequality in the distribution of wealth, and degradation of work.

In terms of scholarly contributions, *Social Fuzziology* brings into sharper focus the 'eternal wisdom' of ancient thinking and teaching about the fuzziness of understanding consequences of human actions as social agents. The Vedic scriptures, Socrates, Hegel, Heracleitus, and the Tao Te Ching, for example, suggest there was no wisdom in fighting the complexity of life dynamics. They recognize that our understanding of ourselves and society explains our actions as social agents and that the inherent fuzziness of human knowing generates the dynamics essential for humans to grow in intelligence and spirit—thus their challenge to humans to constantly seek knowledge and wisdom, applying holistic thinking and methods. "*Do not reject anything!" But do not remain with anything! Go beyond!*"(emphasis in original, p. 30). Move beyond logical rules and restrictions to search for understanding is a piece of wisdom in the Vedic scriptures.

The Socratic axioms—unexamined life is not worth living, and human knowing is limitless—are the foundation for Socrates' maieutic method of inquiry through which he sought to constantly expand the frontier of what is known. For Socrates, fuzziness of the boundaries of the domains of human knowing is the vital condition for the evolution and transformation of knowledge. Hence, he committed his life to provoke his students, challenging them to be thirst for understanding and knowing, to be authentic (to free the mind from biases, prejudices, dogmas, and ultimate truths), and to ask holistic questions (to take the process of knowing deeper and further,

preventing it from becoming crystallized). His message is "Never stop questioning!" (emphasis in original, p. 18). Answers are short-term, questioning continues forever (pp. 17–18). To move beyond the fuzziness of our understanding, the only tool we can use is our own understanding, which carries the same fuzziness (p. 4); thus Socrates' humble admission "*I know that I know not*" (emphasis in original, p. 16). This is a paradox of fuzziology.

Social fuzziology applies the maeutic inquiry as its method of research and it follows the Vedic maximum: "Go beyond." Yet this discipline has broader origins and antecedents (see chap. 2 below). SF asserts that exploring the sources, nature, and dynamics of the fuzziness embedded in the actions of humans as social agents is the only approach to deepen understanding of society. While exploring fuzziness, fuzziology reveals ways of transcending it and thus of expanding the field of human inquiry.

Although the content and character of the book appeals mainly to social scientists, it is also useful for scientists, engineers, and educators. It challenges them to accept fuzziness as a treasure and as the power to create knowledge. For the authors, recognition of fuzziness by scientists, engineers, politicians, economists, and educators is an ethical act, an ethical imperative for the survival of our planet. Thus, the book is intended for everyone interested in learning, knowledge development, search for wisdom, and decision-making. However, its provocative style may be unacceptable to some. Extensive criticisms of the policies and sociopolitical (socioeconomic) system of the United States may raise suspicion of hidden motives. For example, the authors portray the underlying motives for the wars in Afghanistan and Iraq as insatiable thirsts for military and economic power of the producers of advanced military technologies and the petroleum companies in the United States (p. 10). The government has to act as an armed militia for the richest corporations in the USA, for without their support American presidents would have no chance to be 'freely' elected or make their decisions work (p. 9). Furthermore, the authors' negative view of societies and their assessment of the emergent "global empire" can raise questions about their own biases and prejudices. Are they violating the conditions for an open maeutic dialogue?

The book is organized into seven chapters. Chapter 1, "Introduction to Social Fuzziology" (pp. 1–46), is the essence of the book.[1] Dmitrov introduces SF as a kind of social science and an art, outlining its main postulates, origins, and methods of research (Socrates' maieutic method of inquiry and the Vedas approach). In a sense, chapter 1 is an overview of the book; it is also the foundation for understanding the underlying issues in subsequent analyses, which are sometimes confounded by apparent biases, criticisms, or extensive 'historical notes.'

Chapter 2, "Bridging the Study of Complexity with Social Fuzziology" (pp. 47–76), attempts to clarify several important questions: Is SF an application of fuzzy logic to social science? Is SF part of the research in complexity? What distinguishes SF from complexity science? Are there significant differences between fuzzy logic and fuzziology? It asserts that SF is not an application of mathematic logic or fuzzy sets to social sciences; and it is not a substantive science making truth claims about the world. Fuzzy logic differs from fuzziology in focus, methods, purpose, and postulates (p. 69). For example, whereas fuzzy logic deals with specific imprecision defined in a fuzzy set, fuzziology explores imprecision (fuzziness) as a universal characteristic of human experience and knowing. SF deals with complex dynamic entities and its space (i.e., the space of human experience) is complex and characterized by unpredictability, non-linearity, irreducibility, non-equilibrium, chaos, and self-organization. However, SF, as argued in this chapter, does not directly explore complexity, nor is it merely a part of the research in complexity. The study of complexity is the focus of complexity science. However, SF is enriched by the study of complexity and chaos because their methods follow holistic thinking. Complexity and chaos, on the other hand, need fuzziology as a framework. Thus, SF and complexity science are complementary fields.

Chapter 3, "Understanding Fuzziness of Ourselves" (pp. 77–98), examines why the human mind explores external phenomena while neglecting the secrets of its own dynamics. A basic postulate is that a conscious journey into ourselves is necessary to bring up qualities needed to change our relations in society from destructive to constructive. Self-understanding is a self-referential process that requires one to "go beyond!" Mastering the vertices (charkas) of one's inner dynamics—as indicated in the ancient Vedic—and implementing the conditions that facilitate emergence of creative insights in an open maieutic dialogue, can purify body and mind and improve the quality of collective society. However, a lack of absolute disposition of mind and soul and a profound dynamic awareness for dealing with the self-referential loop of the human thinking limits any improvement. The human mind is distracted by many internal and external factors, such as ego-centered behaviors encouraged by society that pollute abilities to understand. Egotism disengages individuals from maieutic inquiry into the essence of the human dynamics, making them unable to recognize the connection of human dynamics with the timeless essence of the dynamics of the universe. This connection stimulates individuals to search for harmonious relationships with nature and with others, to stay consciously connected with their inner spirituality.

Three streams of self-knowing are discussed: (1) knowing about the ideal, (2) knowing about the obstacle, and (3) knowing about energy are distin-

guished and their dynamics and interactions in the complex human experimental space are examined. Human experimental space comprises the space of mind and the life-experience of the individual. It is a complex space. Knowing about the ideal, knowing about the obstacle, and knowing about energy are never in equilibrium in human experimental space. They interact through various positive and negative feedback loops.

Chapter 4, "Understanding Fuzziness of Society" (pp. 99–130), is perhaps the most provocative chapter in the book and it extends the discussion in the previous chapter. Intertwined with the apparent bias and negativity is a provocative theory of society. Society is defined as a web of dynamic interactions and interrelationships of people and their natural and artificial worlds (p. 99). This dynamic web lacks wisdom; its collective mind is a pile of fragmented human knowledge (p. 101). Thus, it cannot transcend fuzziness. Only individuals can transcend the fuzziness of their understanding, but the process of understanding fuzziness of society goes in parallel with the process of understanding ourselves. However, through time, societies have devised mechanisms that suppress the spontaneous expression of the self-organizing ability of social dynamics and prevent resistance. Sociopolitical institutions like education have been designed to preserve social cohesiveness and the economic order, teaching individuals how to perform and develop false identities that make them see only distorted pictures and that pose no threat to the rulers.

Three main points are highlighted in this chapter: (1) Although societies are dynamic and emergent, essential features of their behavior (destructive, savage, violent)—all negative!—have persisted without change through times. Lack of constructive wisdom and use of delusive fuzziness to rationalize behaviors that are destructive of humanity and nature—such as the production of atomic weapons and robots to kill humans, or medical drugs that destroy the human organism's self-healing power—have destined our planet to physical death. (2) Rulers in the emergent new global order (the global empire) have perpetuated their power through skillful use of the languages and high tech means of surveillance, injecting fuzziness and intimidation in the minds of the people and accelerating the division of societies into two groups: the powerful (the very few) and the powerless (the many) (p. 107). (3) The practice of modern education systems departs from Socrates' maieutic method of inquiry and the Vedas. Education is captive of the new global order. It depends on the global capitalist system for its financial support. Its global role is to teach the learners how to fit and serve the order of the global capitalist system—order based on unequal distribution of economic power. Provoking students to listen and understand the voice of their experience does not make the system stronger (p. 116).

Chapter 5: "Case Studies: Understanding Fuzzy Social Categories" (pp. 131–142), is about how societies' tendencies to organize things, individuals and animals into categories lead to terms that are themselves fuzzy and ambiguous. For example, what is Australian, Mexican-American, or Chicano? Is it a person, an animal, or an object? Is globalization a thing, a modern event, a condition, or a historical turning point in the way of doing business? In other words, this chapter brings into sharper focus the difficulty of making sense of linguist imprecision.

Chapter 6, "Fuzziness of the West and the East" (pp. 143–166), deals with a historic-philosophical analysis of the origins and precedents of fuzziology. The authors examine the fuzzy thinking of ancient thinkers from the East and the West—such as the Vedic scriptures, Tao Te Ching, Zeno (born 495 BCE), Heracleitus (born 546 BCE), the Heretics, Aristotle, and Hegel—to establish the progression of fuzziology. The connection between the wisdom of ancient myths and modern indigenous people (aboriginal wisdom) and fuzziology is also examined. Two underlying arguments are: (1) the originality of fuzziology as a science is not diminished by recognizing its origins and antecedents, and (2) it is important to rewrite history to reflect the truth because "bad history can never be a good foundation for any kind of understanding of where we are in the present" (p. 143). For example, they contest the common assumption that rationality began with in the west, specifically with Greek thought. The Greeks are not all from Greece. Greek rationality was not born of a virgin in the 5th century BCE; it had precedents (p. 145). Its origins can be traced to ancient thinking from Asia, Egypt, Babylon, Assyria, and Ionian Greece. The latter were influenced by intellectual traditions from the 'east,' Phoenicians, Assyrians, Medes, and Persians. Examples of Ionian Greeks include Zeno and Heracleitus. A *bootstrapping algorithm* for moving beyond the 'rational' and 'irrational' explanations of complexity is also presented and illustrated with an example.

Chapter 7, "Key Terms in the Language of Fuzziology" (pp. 169–179), is not required to understand the specific terms used in the rest of the book. Providing a glossary to guide the reader does not seem to be the purpose for writing this chapter. The authors show the dynamic of fuzziness in the interpretation of the meaning of the terms from their inception in the realm of the human languages. The descriptions illustrate the irreducible fuzzy complexity of the terms, making reference to their history (genealogical approach) and drawing on their etymologies as a way of understanding the living presence of deep history in every aspect of language. This chapter reminds us that the origins and evolution of a language is a resource to treasure.

Over all, the author's writing is challenging. The analysis is patchy, perhaps intentionally to force the readers to 'go beyond' the fuzziness of the

analysis in order to extract the essence of the argument. However, after a careful reading, one still has the impression that the characteristics distinguishing social fuzziology as a social science and an art have not been clearly established. Interestingly, a requirement for knowledge development is a mind free of biases and prejudices, but the authors themselves seem unable to move away from these constraints. One thing is obvious: The authors are sophisticated readers.

As a general recommendation, I find the book provocative and useful for students of educational complexity. It raises many questions and it challenges us to at least reconsider the relevance ancient and indigenous wisdom for modern societies.

Endnote

1. A version can be found in V. Dimitrov, 2003, Fuzziology: A study of fuzziness of human knowing and being, in *Kybernetes 32*(4): 491–510.