Guest Editors’ Note (4.1-2)

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Pedro Sotolongo, Alicia Juarrero, Jacco Uden


Havana's Instituto de Filosofía’s First Biennial International Seminar on the Philosophical, Epistemological and Methodological Implications of Complexity Theory, held in January 2002 in Cuba's capital city, was aimed both at familiarizing Cuban researchers and professors in a more direct way with some of the current trends—and widespread scope—of the expanding field of complexity, and at affording them the possibility of personal contacts with some of the people engaged in that effort.

Although the organizers launched the call for papers barely six months before the seminar, they could not have found a more encouraging response: The seminar was attended by specialists from 15 countries, ranging from Chile to Australia along the West-East axis, and from Norway to South Africa North-South. There were participants from developed and underdeveloped countries. Of course, Cuban colleagues were amply represented.

It is also fair to say that had it not been for September 11th’s terrible tragedy, the seminar organizers would have counted on an even larger attendance. Even so, no more than 10-15 percent of those previously committed to attend dropped out because of those events. In that context, the presence of the ten US delegates who did come to Havana and who made a significant contribution to the success of the seminar was much appreciated. They were publicly welcomed and applauded at the seminar’s opening.

The seminar began with a two-hour special lecture on “Complexity and Life” by Prof. Fritjof Capra (University of California at Berkeley), who also presented the seminar with a copy of his most recent book, The Hidden Connections, closely related to the topic of his opening lecture. Prof. Capra focused convincingly on how a complexity approach can help us attain a better understanding of the unity of the dynamics of nonliving and living phenomena. He also stressed the central role played in living phenomena by epigenetic networks of nonlinear biological interactions—cellular, tissue, organic, organismic, and ecological—thus challenging the “genetic determinism” that is still widespread in many quarters.

The seminar also benefited from special lectures by Prof. Paul Cilliers (University of Stellenbosch, South Africa), who discussed issues relating to complexity and postmodernism, and by Prof. William Bechtel (Washington University, St. Louis), who explored the topic of mechanism, dynamics, and cognition. Panels or round tables were also held on “Complexity and Subjectivity,” “Complexity and Society,” and “Complexity, Ecology, Environment,” with the participation in all cases of both visitors and Cuban specialists.

The ideas expressed at the seminar—and this came as no surprise—made clear that current developments in complexity stem from circumstances linked to the profound change that has taken and is still taking place in human practice, both in its material and in its ideal or spiritual dimensions. This change, and its characterization, are having—could not avoid having—a significant influence on contemporary philosophical thought.

THE CONTRIBUTIONS

First, Havana contributions by Capra (US), Delgado (Cuba), Ulanowicz (US), and Rubino (US), among others, focused on the mutual implications of complexity and life. From an ontological perspective, a complexity approach gives us a new understanding both of the origin and of the nature of life itself as an emergent phenomenon with myriad forms, dynamically constrained but nevertheless unpredictable. From an epistemological angle, complexity thinking clearly points to the limits of our knowledge of the living. These two facts together should help us become aware of the enormous responsibility we have taken on when we try to develop such fields as biotechnology and genetic engineering. They should be put to the service of life and not vice versa.

When we face our inherently limited epistemic possibilities with regard to the emergence of new forms of the living with unforeseen and unpredictable characteristics, we would do well to take into consideration what Cilliers stressed: Although it has limits, human knowledge has no borders or frontiers. We should distinguish between the two. Our world has borders that can be “approached from both sides,” while our knowledge of the world has limits that allow only “approaches from one side.” Where the limits of our knowledge lie, precisely there begins the domain of ethics. Any careless trespassing of those limits is epistemically naïve and, worse, ethically wrong.

As Cilliers also stressed, this topic, concerned as it is with the relationship between our descriptions of the world and the world itself—the old philosophical problem of the dialectical correlation between the “ontological” and the “epistemological”—has nothing to do either with an “end of science” or with the impossibility or undesirability of building models. It has to do only with the undeniable fact that we have to deal with the world in real time and with finite means.

Delgado also talked about limits, in this case the cultural limits of western man and western civilization. His topic was
“Complexity and Environmental Education,” and he asked how deeply environmental education must question the cultural foundations of western man’s model of the relations between himself and nature. Delgado urged us to seek an answer to those cultural limits along three directions: epistemological, sociopolitical, and educational.

Man’s current material damage to the environment is a consequence of a predatory model of his relations to nature that stems from our spiritual consideration about what that environment is and what it means to us. This model was framed by western culture’s view of nature as a dichotomous domination and opposition between an external—natural—world and an internal—social—one. From this perspective we could argue that the “environmental problem” is not a problem of man’s relation to his natural surroundings but first and foremost a problem of man’s relation to himself. It is not enough, then, to talk about—and work on—environmentally clean technologies, or to further enhance our environmental education efforts, or even to better understand the dynamics of natural processes from a complexity perspective. Fine efforts as these are, they will fall short if at the same time we do not place before us as the central problem the cultural limits of that predator-man provoking the environmental damage.

Sotolongo (Cuba) explored how life is also threatened, not only through environmental damage but also through economic exclusion and cultural impoverishment, by the ongoing process of globalization. Not by globalization as such, which is irreversible and unavoidable, but by its present neoliberal character, which is not inevitable and ought to be reversed toward a more solidarity-minded type of globalization in which economic exclusion and cultural homogenization have no place. The complexity approach is instrumental for understanding both current trends in neoliberal globalization and possible ways of reversing it.

These facts therefore point to the need to keep in mind:

- the fortuitous character of life,
- the limits to our knowledge of the living and its forms,
- the unpredictability of the emergence of new forms of life,
- the precarious character of life under neoliberal globalization,

all of which lead to an ethics of life, that is, of a concern for life, a responsibility for life, and a defense of the sustainability of life. In Delgado’s words, they lead to a bioethics.

Furthermore, as he focused on the consolations (and the hopes) of uncertainty, Rubino urged that the fortuitous character of the origin of life mentioned above, including our own origin, should not thrust us into despair. Although the longing for order, perfection, and certainty has deep roots in western culture (a longing that goes hand in hand with western man’s desire for immortality), the acceptance of our human condition—of mutability, disorder, and “the end of certainty” (as Gould and Prigogine have shown us)—should prompt not despair but an abiding confidence in the future and our place in it. We stand on the threshold, as Prigogine says, of “a period of multiple experimentation, of an increased awareness of both the incertitude and the great possibilities implied by our human condition.” We are embedded in nature, not set apart from it, playing the role of spectators; and this should be a cause for rejoicing, not despair, Rubino noted.

Ulanowicz also examined the links between complexity and life. He argued in favor of a so-called ecological metaphysics, that is, a metaphysical middle ground, as he called it, that treats life’s origin as an ecosystem dynamics. This approach, he argued, should prove more neutral toward both the living (the quick) and the nonliving (the dead) in terms of functional correlations between dead and live components.

If prior to the seventeenth century life was seen as ubiquitous and ascendant and death as exceptional (an ontology “of the living”), the origin of life became a problem after the Enlightenment. Life itself turned irreversible, contingent, and asymmetrical, and death was now preeminent and inexorable (the equivalent of an ontology “of the dead”). The proposed metaphysical “middle ground” should restore the lost balance between the living and the nonliving. Instead of earlier metaphors such as those of the “dead machine,” “stochastic units,” or “living organisms,” we should turn to a “ecosystem” metaphor, the combination of a living community of organisms interacting with the nonliving elements of their environment as a whole functional unit.

Other contributors to the seminar such as Cole (UK) turned their attention to other links between complexity and globalization, emphasizing its economic mechanisms and signification, its networking character, and its emergent phenomena. Likewise, Falconer (Canada) and Mateos et al. (Spain) focused on various aspects of a complexity approach to management, business, and economics, and examined topics such as cooperating firms, small businesses, changes in organizations, and the links of chaos and the economy. These efforts to understand globalization, economics, management, and business, as well as those other efforts interpreting physical, chemical, and biological phenomena from a complexity perspective—Moreno et al. (Spain) among others in this last case—made clear the relevance of a world that is currently being articulated around complexity thinking. This approach moves us away from a focus on isolated objects and linear processes to a focus on complex networks
Indeed, complexity thinking is inherently linked to our experience of both what is relevant to the world that surrounds us and in which we are immersed and what is relevant in our interactions in this world, as a very complex web of mutually linked networks of nonlinear and distributed interactions of local and nonhierarchical components out of which, in a nonpredictive fashion, new patterns of complex order spontaneously emerge.

This appreciation of a web-like world also leads us to acknowledge the ontological creativity of the entire world—not only that of human beings—as one of multiple possible alternatives, always dynamically creating themselves along with the dynamical constraints that eventually favor some and disfavor other possible evolutionary alternatives. This complex understanding of the creative nature of the world emphasizes the emergent character of phenomena. The world and its instances are never “ready and finished” and are by no means “just waiting there for us to explain them.”

The complexity approach, furthermore, legitimizes the ontological role of instabilities, asymmetries, chance, and disorderly phenomena. We learn that these processes show no ontological disadvantage vis-à-vis stabilities, symmetries, and causal and orderly phenomena. The latter would not come into being without the former. This assertion, which mythical and ancient knowledge mastered so long ago but was later lost along the way, is returning to us (walking backwards) along with the complexity approach. At long last we have another chance—let us hope it is not the last one—to allow us to accept the world, the societies we build and live in, and ourselves as unrepeatable human subjectivities, as a world of heterogeneities. Let us understand that we should not try to homogenize it artificially in our ideal of comprehending it.

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This becomes a major methodological challenge for complexity studies: We should take into consideration not only the “focus level” that we are interested in characterizing, but also two other ontological levels, that of the interacting dynamical components (the “underlying” level) and that of the environment (the “overlying” level). None of them has any “ontological preeminence” over the other two; in fact, the focused level is always “nested” or “embedded” between the level of the components and that of the environment. The emergent pattern of new complex order is then the result of at least four inter-level phenomena: environmental constraints, compositional constraints, emergent constraints, and component-environment affordances.

Epistemological implications of complexity thinking were also amply present at the seminar. Thus Najmanovich (Argentina), Cilliers, Strand (Norway), Mateos et al., and Delgado, among others, spoke at length about reframing our understanding of the cognitive processes under the impact of complexity thinking.

Epistemologically, we have departed from the absolute and transcendental subject of cognition so dear to modern philosophy, and encounter instead the involved and specific (historically and socially) subject of cognition. We must come to grips with a reflexive subjectivity that must give account of itself, its whereabouts, and its activity in the cognitive process. After centuries of pretended uncontaminated objectivism, this brings to the forefront the interpretive or hermeneutical dimension of the cognitive enterprise and the intertwining of values and knowledge.

Along with other contemporary lines of thought, the complexity approach allows us to view the characteristic objectivism of modernity as an alleged “nonnarrative narrative” (in Derrida’s words), as a discourse that denies itself to be such, a speech without a speaker and without a speaking modality. This alleged “pure truth of facts,” as Najmanovich reminded us at the seminar, is the “trick” of modernity’s objectivism, the founding paradox of positivist philosophy and of “simplicity thinking.”

The immense success of modernity’s philosophy, she stressed, proves its power, not its truthfulness. Modernity’s emphasis on methodical thinking served the needs of the time to change the criteria of what had to be considered relevant and legitimate. In doing so modernity shaped the need for new ways of producing, circulating, and legitimizing knowledge. That methodological emphasis was the weapon of a new rising ruling class against the speculative knowledge of traditional religious authority.

Today, several centuries later, that emphasis is an obstacle to understanding complexity thinking. Complexity thinking involves a radical transformation of the global system of production, circulation, and validation of knowledge.

The foregoing, however, does not mean the rejection of different methodologies, procedures, or technologies to obtain new knowledge. It only emphasizes that method is not independent of nor does it precede experience; and that there are always many alternatives to explore, think about, and make sense of in our interactions with others and with the world at large. These various possibilities arise from humans’ everyday life practices. As Strand expressed it, through complexity thinking we are developing a new understanding of the links between knowledge and action. Passion for knowledge cannot be excused or accepted when divorced from moral considerations. Modernity’s alleged axiological neutrality disguises its true value commitments with an instrumental rationality. Whether we like it or not, we cannot and should no longer hold an unconditional love cult and trust in science and technology. We should consider their merits by judging science and technology’s contributions to a sustainable future for humanity and its natural environment.

Complexity thinking, together with relativity theory and quantum mechanics, phenomenology and cognitionism, constructivism, dialectics, and hermeneutics, has led us further to recognize the inseparability of the subject and object of cognition. Today we know that we must not only explain our objects of cognition, we have also to be able to comprehend the subject of cognition that
The importance of complexity thinking for the comprehension of society and of its individual members was stressed by Juarrero (US) and by several Cuban speakers (Sotolongo, Franco), among others.

Sotolongo focused on how a complexity approach could shed new light on the old but nevertheless still unresolved problem of the correlation between the so-called macro-social and micro-social phenomena. He argued that both of these social dimensions—that is, objective (“macro”) social structures and individual (“micro”) social subjectivities—emerge simultaneously and in a parallel way from the concomitant processes of social objectivation and social subjectivation of various patterns of social interactions in everyday life.

Each of these patterns of social interactions is no more, but no less, than characteristic regimes of collective practices (family, educational, labor, religious, classist, gender, race and/or ethnic practices, and so forth) that act as true dynamical social attractors for those involved in them through the tacit and thus prereflective process of building up mutual expectations about one another's social behavior in everyday life (a sort of proto-normative fiber of every society). The “social cement” that glues together these attractor patterns of everyday life is those mutual tacit social expectations, and its “ingredients” are our prereflective “local” practices of power, of desire, of knowledge, and of discourse (local in the sense that they take place within the “situations of social interactions with copresence” in which we are constantly involved). In turn, these local practices of power, desire, knowledge, and discourse set themselves up against the background of four types of social affordances characterizing basic social asymmetries (power inducing and/or power induced; desire inducing and/or desire induced; knowledge inducing and/or knowledge induced; discourse inducing and/or discourse induced) in the interactions of social individuals—as the basic ontological component level of society—with their specific social environment level. Each of these basic social asymmetries is capable of triggering social complexifying processes and is linked “circularly” with the others.

Franco (Cuba) stressed the importance for managers of social organizations of coping with the need to provide both what he called a control zone and a creativity zone within each organization (linked by what he termed a filter area) in order for it to be able not only to implement forecasts, plans, tasks, and objectives, but also to be creative, flexible, and democratic, and to adapt to the inevitable presence of nonpredictable variations in the organization's environment. Mateos et al. emphasized the importance for strategic management of organizational learning, creativity, and innovation.

We were reminded by Cilliers, Juarrero, Najmanovich, Sotolongo, and others that human subjectivities are neither independent wholes nor free-floating egos, and that they are not reducible to either mere subjective observations or decisions. On the contrary, subjectivity is a complex phenomenon in itself, and should be approached as a web of interactions with other subjectivities and with the world at large. It is precisely from this intersubjective web of interactions that meaning emerges as a result of a process of interpretations. In other words, subjectivities are always contextualized, situated, and immersed in a process of intersubjective constitution that extends from birth to death. As with the rest of the world, subjectivities are also never “completed” and “ready.”

Juarrero focused on the problem of complex dynamics and identity. Old as philosophy itself and involving questions relating to the dialectics of permanence in change and “sameness” within difference, this important problem is of concern to complex dynamical thinking. As something changes, is it the same thing (as before)?—an ontological question. By what criteria do we tell if it is or isn’t?—an epistemological question. Because complex dynamical systems are “structures of process” existing in time, any attempt to formulate criteria for identifying a given dynamical system as the same one as before, or as the same type as another, becomes very difficult. For example, with international corporations and web-based communities in effect decoupled from any particular spatial location, what identifies such organizations and associations as that corporation or community? The lesson of complexity’s sensitive dependence on initial conditions is that there exist only particular, individual—and increasingly individualized—phenomena. But these are processual individuals, not static, thing-like objects. Moreover, they have the potential to evolve qualitatively, not merely develop.

**NEW WAYS TO APPLY COMPLEXITY THEORY**

Aside from the ideas expressed at the seminar, some of which have been outlined above, a remarkable human phenomenon emerged in Havana. Very different people indeed, who had come from near and far—Europeans, Latin Americans, Asians, Africans, and North Americans, including US citizens—and who had never met before, gathered together in Cuba's capital in an amiable, open and democratic manner, made new friends, and felt at home with each other. This wonderful and emergent human atmosphere was also a most remarkable result of the Havana seminar.

In many ways, the seminar was also a huge success because, in addition to coming from very different geographical locations, participants were also from a great number of disciplines and backgrounds. As a result the talks not only spanned the entire field of complexity studies, they also carefully considered implications and applications of complexity theory to fields other than their own.

After having read some of the papers, the editors of Emergence decided to devote a double special issue to the Havana seminar. This decision may strike the reader as surprising. Indeed, the question of why Emergence: A Journal of Complexity Issues in Organizations and Management

Emergence: Complexity and Organization 4
In the field of organization studies and management research, complexity theory has been in vogue for quite a while and many articles have been dedicated to finding ways of “making this complexity thing work for organizations.” At least two interesting things can be said about the way in which ideas and concepts from the field of complexity are brought to the field of organization studies.

One practice worth mentioning is that students of organization who have imported ideas and findings from complexity scientists have done so very selectively. For example, complexity concepts such as self-organization, edge of chaos, and fitness landscapes can already look back on successful careers in the field of organizations. That is, for one reason or another, organization researchers felt that it made sense to introduce these words into their discipline. At the same time, and again for various reasons, other ideas and concepts from complexity discourse—like gradients, situatedness, or multiplicity—have received little or no attention in organization studies. So students of organization have not accepted the complexity sciences wholesale. Instead, some ideas were embraced and others have largely been ignored.

What is also interesting to mention is that, as is always the case when students of organization “borrow” insights from other disciplines, confusion and disagreement exist as to what exactly complexity concepts are supposed to mean in their new habitat. Pick up any two books on complexity and organization and you will find two very different views of what, for instance, emergence means in an organizational setting. Everything about complexity is open to many interpretations.

According to some authors, both these practices should be regretted. Their argument is that you either accept everything that the complexity sciences have to say or you simply don’t accept them at all. And when you do embrace the complexity sciences, they say, unless you are willing to work with “unfounded” and “faddish” applications of complexity theory to the field of organization studies, you must accept that the message of complexity is to be interpreted in only one way.

Our view is rather different. If we believe that complexity is a very rich source from which to draw, imposing strong limits on what the numerous concepts of complexity can mean smothers complexity’s great potential. In the very same way that “once awkward, now indispensable” business concepts such as strategy, culture, or mission were massaged in order to make them of any use to organizations, complexity discourse cannot be understood as something that “just is.” For concepts such as emergence, attractors, fitness landscapes, and self-organization to be useful to students of organization, it is important that they are never quite fixed in their meaning. The notion of strategy, for example, remains helpful to those who use it to make sense of organizations because the question of what strategy means is never answered once and for all. People play with the concept of strategy, they turn it upside down, they adjust it, undermine it again, look at it from a new perspective, and so on. And that is how strategy is kept meaningful. Were the concept not open to reinterpretation at some point it simply would have stopped being of use.

The same applies to the concepts of complexity. Already, the meaning of notions such as emergence, attractors, and so on has come to be taken for granted to some degree. While there is nothing wrong with that in itself, it is important to bear in mind that it could very well be worthwhile to put the many complexity concepts into a new perspective.

One particular way of doing just that—but not the only one—is by going back to what we might consider to be the roots of complexity research. This has at least two advantages. First, by going to the basement of the house that is complexity theory-informed organization studies, we may come across concepts or ideas that have not been picked up before but seem worthy of exploration now. The second benefit comes from rereading the material that led us to specific understandings of the concepts we already use. By going beyond the meanings of notions of complexity as they hardened in organization studies and by revisiting the “basics” and exploring some of the general philosophical implications of complexity, students of organizations allow themselves to open things up, thereby freeing themselves to look for possible new ways to apply complexity theory in the field of organization studies. That is what the guest editors of this special issue of Emergence aim to achieve.

The selection of the articles and the way they are structured in this special issue reflect that ambition. Although unfortunately some good articles submitted had to be left out, the guest editors selected the 14 that they thought would be most appropriate and useful to readers of Emergence. The selected articles have been organized in four parts.

Those in Part I, Sources of Complexity: Science and Information, can be said to approach the phenomenon of complexity at a very basic level. Here the issues being addressed revolve around the very fundamental question of why the complexity sciences are so important: What are the most fundamental lessons to be learned from studying complex systems?

Articles included in Part II, Philosophical, Epistemological, and Methodological Implications, engage in a broader, philosophical investigation of some of the most general ontological, epistemological, and methodological implications of the complexity approach, showing how very old questions are currently being reformulated and/or reinterpreted in the light of complexity thinking.

Articles that appear in Part III, Organizational Implications, will be more familiar to Emergence readers as they address various important issues about the links between complexity and social, organizational, business, and management questions.

Finally, those in Part IV, Global and Ethical Implications, return once again to more global implications of complexity thinking,
this time dealing with ethical and globalization issues of the contemporary world.

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ANNOUNCEMENT

2nd International Biennial Seminar on the Philosophical, Epistemological, and Methodological Implications of Complexity Theory

*Havana, January 7-10, 2004*

More information about the seminar and the call for papers will be issued in December 2002 on the seminar’s website, which will be accessible through http://www.filosofia.cu/complejidad/index.html.