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Chaos and Unpredictability in Social Thought: General Considerations and Perspectives

Abstract: *This paper attempts to offer a comprehensive and critical overview of the crucial role played by chaos and unpredictability within contemporary social thought. It briefly highlights the relevant theoretical and methodological contributions and developments, as well as the largely useful perspectives emerging from the systematic study of chaos. It is argued that chaos and unpredictability should be responsibly acknowledged, embraced and celebrated as both essential features of human societies and unlimited sources of critical possibilities. Eventually, it is very clear that a kind of guided self-organisation (in social or economic organisations and in human societies) is much better than classical Promethean manipulation and control.*

Keywords: *knowledge, unpredictability, chaos, complexity, self-organisation, epistemology, social theory*

Pagrindiniai žodžiai*: žinojimas, nenuspėjamumas, chaosas, kompleksiškumas, saviorganizacija, epistemologija, socialinė teorija.*

Introduction

Chaos is frequently not fully understandable to many people. However, it has undoubtedly altered – and continues to alter – the way in which we daily experience and confront ourselves, the others, and our social and physical environment.

Over the last two decades, the social sciences began rapidly to go "complex" or "chaotic"[1], with a significant array of relevant publications. Some innovative popular books within this field include Kauffman's *The Origins of Order*, Casti's *Complexification*, Arthur's *Increasing Returns and Path-Dependence in the Economy*, Nicolis' *Introduction to Non-Linear Science*, Luhmann's *Social Systems*, Krugman's *The Self-organizing Economy*, Jervis's *System Effects*, Rescher's *Complexity*, Holland's *Emergence*, Byrne's

[1] For Ken Hatt, there are two specific differences between chaos and complexity: "first, chaotic behaviour usually results from the nonlinear interaction of a few equations while in complex systems many components are interacting… second, chaotic behaviour exhibits a sensitivity to initial conditions, which is not the case for complex systems that are, in some cases, quite robust and capable of persisting in response to a variety of conditions… Chaos can be seen, then, as a possible precursor or manifestation of complexity" (Hatt 2009; 317).

Complexity Theory and the Social Sciences, Kelly's *New Rules for the New Economy*, Cilliers' *Complexity and Post-modernism*, and Hayles' *How We Became Posthuman*.

From this relatively fresh analytic standpoint, our contemporary social world is seen as an open, non-linear and dynamic turbulent system, spontaneously self-produced, self-evolved and self-organised/recreated within a continual flow of extremely rapid changes, an "infinite flux" (in Gilles Deleuze's terms) – with huge flows of information, communication, knowledge, energy and matter flowing in and out.

In parallel, it is almost customary nowadays for social scientists and social philosophers (or social epistemologists) to conceive and formulate knowledge claims or truth claims in terms of the general notions of social constructedness, linguistic discursivity, relativism, contextuality/situatedness, indeterminacy and unpredictability.

Making predictions has substantially moved "from totem to taboo … For all the proscriptions, predictive activity in sociology is commonplace … We do not highlight our predictions, however. They remain implicit in our work: colleagues can discern them, but they are not made explicit to a wider public" (Aldridge 1999; para 5.6). In fact, social scientists and philosophers no longer take epistemic risks for fear of being wrong – or of being falsified and, therefore, weak.

From Modernity to Unpredictability

Modernity, as a social and historical category, has been closely associated with the "old", "received" or "conventional" strong ambition to know, predict and manipulate (engineer) the world *in toto* with total certainty. Sociology's 19th-century founders strongly asserted that the discipline was about making *long-term predictions* and hence applying persuasive, practical and universally-applicable solutions to acute and pressing (real-world) social problems.

This was how social science originally invented and justified its idiosyncratic (unique) epistemic status and role, in direct contrast to religion or metaphysics, as famously expressed by the classical Comtean formula *savoir pour prévoir et prévoir pour pouvoir*, or by C. Wright Mills's conclusion (combined with a strong critique of bureaucratic technocracy) that the ultimate "purpose of social science is the prediction and control of human behaviour" (Mills 1970; 127).

Human life, however, is inherently dynamic: it is inescapably and ceaselessly changing and polymorphous (kaleidoscopic). In other words, it may be simple, complicated or chaotic, easy or hard, calm or stressful, boring or exciting, dull or colourful, regular or irregular, happy or miserable, beautiful or evil. To put it very simply, *life is never the same*. Change is actually constitutive of all sorts of human co-existence/co-operation and social living over the ages.

Especially since the early 1960s, the innovative theoretical and methodological paradigm of chaos has been increasingly simmering within the study of nature and society. The science of Chaos (Gleick 1987) is a science of change.[2] It is the systematic

investigation of non-linear processes within dynamic turbulent systems (human or non-human).

Chaos does not in principle reject the basic tenets of determinism, but it decisively shows that there are indeed deterministic systems which are not predictable at all, since they exhibit *sensitivity to initial conditions*: "there is no proportionality between causes and effects. Small causes may give rise to large effects. Nonlinearity is the rule, linearity is the exception" (Tsoukas and Hatch 2001; 988).[3]

Contemporary "networked" societies are inherently *chaotic systems* – that is, *both* deterministic *and* unpredictable (this actually reconciles in a sophisticated way the aperiodicity and unpredictability of non-linear dynamic systems with a sense of *order* and *structure*). The most characteristic exemplifications are: the global economy and the global crisis, wars and armed conflicts, human beings and social organisations, romantic and intimate relationships, business and the stock market, political campaigns and elections, the Olympic Games, football games and other sporting events, weather systems, the Internet, World Wide Web, Web 2.0, journalism and journalism 2.0, science and technology[4], etc.

In other words, a chaotic system may appear completely random, but there is always an underlying generative "real" order, deeper mechanisms and hidden patterns, rules and norms, which patiently wait to be discovered and un-covered (*therefore, there is no such thing as "luck"*). But even if (positivist, essentialist, realist or neo-realist) social scientists someday arrive at the very final stage of "total" or "absolute" knowledge about these "hidden patterns, rules and norms", they will not be capable of accurately predicting.

To put it very simply, a human complex

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[2] It must be acknowledged here that "chaos theory" initially evolved from the ground-breaking work of Edward Norton Lorenz (1963), an American MIT mathematician and meteorologist who was systematically searching for explanations for the unpredictability of the weather. Lorenz's experiments eventually showed that the behaviour of any unstable system (that is, a system that does not exhibit regular or periodic fluctuations) cannot be predicted. Furthermore, his complex graphic representations of this behaviour demonstrated "a kind of infinite complexity [that] stayed within certain bounds, never running off the page but never repeating itself" (Gleick 1987; 30). In the mid-1980s, the Santa Fe Institute (www.santafe.edu) was established to further organise and develop systematic inquiry into complex adaptive systems (CAS).

[3] In addition, non-linear systems "exhibit recursive symmetries between scale levels: they tend to repeat a basic structure at several levels. For example, turbulent flow can be modeled as small swirls nested within swirls, nested, in turn, within yet larger swirls" (Tsoukas and Hatch 2001; 988).

[4] In general, chaos, complexity, reflexivity, performativity, pluralism, sensitivity-dependency and context-dependency have gradually been rendered the most basic characteristics of the contemporary condition of knowledge. These characteristics are increasingly leading to a dynamic blurring of actor identities. According to Alan Irwin and Mike Michael, for instance, the wider public is already "highly knowledgeable in ways that could fruitfully inform scientific assessment … there is a blurring of expert and lay knowledge … both 'public' and 'science' no longer stand as discrete entities…" (Irwin and Michael

society (as well as any other non-linear dynamic system) can never be fully contained in any way – even by its own "creator" (in the special case of a computer-simulated artificial society). So, any ambitious, long-term planning is inescapably doomed to absolute failure. What is actually needed here, consequently, is to reflexively include ourselves, as *both* researchers *and* social actors, within this *inherent* general unpredictability.

A system's esoteric interactions usually prevail upon external control attempts. The counter-intuitive behaviours of human complex systems generally result from often "very complicated feedback loops in the system, which cause many management mistakes and undesired side effects. Such effects are particularly well-known from failing political attempts to improve the social or economic conditions" (Helbing 2009; 428).

As John Urry perceptively observes, many small "local actions" can rapidly interact and surprisingly ramify to create "global waves" or "global fluids" (i.e. unstable networks such as travelling peoples, automobility, global brands, social and political movements, environmental and health hazards), which are seen as *highly unpredictable*, and as often lacking a clear starting and end point: "The 'particles' of people, information, objects, money, images, risks and networks move within and across diverse regions forming heterogeneous, uneven, unpredictable and often unplanned waves… Such waves demonstrate no clear point of departure, deterritorialised movement, at certain speeds and at different levels of viscosity with no necessary end state or purpose" (Urry 2003; 60).

That is why global (or glocal) social networks are chaotic systems: determinism is structurally coupled with the role of agency, surprise, contingency and unintended/unforeseen/unanticipated consequences and side-effects (*unpredictability*):

- On the one hand, social institutions, networks and structures are inherently *fragile, unstable and contingent*, because choice, imagination and improvisation are *ubiquitous and esoteric* in each and every individual and collective action. There are always new alternative (and unanticipated) roads to fruitful collaboration, innovation and creativity. The future is actually open, subversively enigmatic and potentially full of surprises (for better or for worse...).
- On the other hand, a systematic, well-informed and carefully detailed

2003; 111). It is also no longer self-evident and universally accepted that the general public trusts and follows the conclusions of science and technology. The public is thus becoming more and more critical and suspicious; it therefore actively demands a substantial role in the democratic development of science and technology. Public acceptance is always needed, especially when scientific debates concern issues of health and food. The inherent unpredictability of knowledge production (see e.g. van Peursen 1970) could be further elaborated through the empirical demonstration of its unavoidable *Janus-faced character*. That is, the impact of science and technology is both positive and negative: they are a "collective good" and a "collective bad" at one and the same time.

historiographical approach can easily demonstrate persistent (hidden) patterns, mechanisms and trends underlying the relative "directionality" of social and political change and evolution. Old modern notions of *path dependency* (or *history dependency*)[5] now seem very relevant and realistic, so that they get seriously re-energised and re-introduced to the context of analysis. Common global developments are thus far from purely erratic and arbitrary, but still unpredictable in the long run (i.e. beyond the so-called *predictability horizon*).

Unpredictability and Agency

Self-organised patterns of interconnections, interrelations and interdependencies are continually created and re-created through an "endless dance of co-emergence" (Waldrop 1992; 75). Therefore, any political, philosophical, sociological or social theoretical (top-down) attempt to change (or to save) the world is indeed *too weak*: "social development can't be steered because society is a complex, self-organizing system" (Fuchs 2003; 164).

Nobody can actually, voluntaristically or not, situate her/himself *above* social/societal (relational) dynamics, independent of her/his "strong will and conviction", intelligence or charisma, methodological approach or research skills, prestige, authority or political power, social status or symbolic capital, institutional position (centrality) or epistemological standpoint.[6] As Stacey, Griffin and Shaw comprehensively argue and conclude, "…no individual or group of individuals can be 'in control' of the whole system. This departs from the dominant discourse in which the only alternative to an individual being 'in control' is thought to be anarchy" (Stacey et al. 2000; 124).

In any case, this should not detract from the increasingly huge importance and significance of (knowledgeable) human agency and critical intervention. Especially in pressing and turbulent periods of severe crisis and acute social struggle, enhanced human agency and critical intervention can still make a decisive historical difference for all of us and for the next generations.

Furthermore, the intrinsically "multi-scale nature" and "irreducible complexity" of the recursive self-organised social networks are crucial features in better understanding (and modelling) them. Both methodological and epistemological advances in human complex systems (see Tsekeris 2009) are

[5] As Karl Marx famously concludes in the *"The Eighteenth Brumaire of Louis Bonaparte"*: "Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past" (Marx 1852; 115). So, we are not the absolutely self-conscious, grand designers of our future (human reflexivity is always bounded by more or less unacknowledged conditions). For a superb analysis of the intriguing notion of "human reflexivity", see the relevant sociological work of Hans Herbert Koegler (1997a, 1997b).

[6] See the very interesting critical discussion of what Dick Pels perceptively calls "methodological voluntarism" (Pels 2000; 210-214).

providing an integrated general framework, without however achieving true (strong) predictive power in terms of their future behaviour.[7]

Of course, regularities are not excluded at all: "laws can be proposed and validated (or negated) via empirical means, but they can be formulated *only* in a *probabilistic* manner" (Katerelos 2007). This particularly denotes that "unpredictability" and "indeterminacy", as significant constitutive features of the social world, should always be placed at the centre of the analysis.[8]

After all, what about the very future of human complex systems? A very simple, modest and pragmatic answer is that we just "cannot predict or control this future, these futures. One lesson of Chaos Theory is that no-one else can, either. The will to predict is always doomed and counter-productive. Life, whether social, cultural or digital, is inherently complex" (Hodge and Lally 2006).[9] This is indeed an *epistemologically weak* answer.

In the highly contingent, speedy, risky, dynamic and "liquid" universe of recursive self-organised social networks, any strong, authoritarian "top-down" control (or Promethean engineering) of information spread, opinion formation, free will and self-expression is completely impossible *and* undesirable. Equally undesirable is a predictable, linear, hierarchical, stable, orderly, homogenous and pure human world (*unpredictability is not a curse anymore*).

This would probably be a very hopeless, colourless, periodical, monotonous, dull and boring world: A completely grey social universe (*against human nature itself*). In addition, there is indeed a small degree of optimism about the future, by strategically focusing upon *critical possibilities rather than limitations*.

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[7] In the language of scientific methodology, the Lyapunov Exponent signifies the mathematical measurement and characterisation of a dynamic system's unpredictable (chaotic) behaviour (see e.g. Katerelos and Koulouris 2004).

[8] Within current chaos/complexity research, "unpredictability" is frequently used in two different senses (Katerelos 2007): (1) On the one hand, it "involves the overwhelming failure of the modern sociological (and social scientific) projects to fully contain social dynamics, or to obtain full analytic access to future social and historical developments". (2) On the other hand, it "denotes an essential feature concerning the nature and character of all complex or chaotic systems … In a "self-organising" or "autopoietic" social universe, where (dis)order, (mis)understanding and (dis)unity reflexively come from agonistic competition, irreducible diversity, mutual evolution, emergence, or chaotic noise..., the future just becomes a mere possibility". The key meaning of "unpredictability" (as in principle perceived within chaos theory) is also conveyed by Heisenberg's Uncertainty Principle and Bell's Theorem.

[9] A quite simple mathematical analysis could easily show that, even in simple and explainable systems, which perfectly obey Newton's laws of motion, we cannot always and accurately predict what is going to happen next. This is because of a persistent instability and fluidity, as well as of an undecidable multiplicity of forces that variously affect and act upon an object. For sure, any attempt to predict a simple system's future behaviour over long times will be defeated. Of course, this does not mean that we can say nothing about the very dynamic properties and processes of the system.

As Immanuel Wallerstein perceptively notes, "the future [...] is open to possibility, and therefore to a better world … Hence we should act in order to realise an alternative, democratic, participatory, humane form of globalization that is based on global alliance technology, global ecological sustainability, global wealth, a global participatory agora, and a global noosphere. New forms of globalization and governance are needed, globalization is in need of global wisdom and global co-operation" (Fuchs 2003; 164).

Accurately predicting the future of human complex systems could be considered as a rather epistemologically weak, irresolvable riddle. But the irreducible social, cultural and historical potential of dynamic social human networking, re-creation, co-action, co-operation and self-organisation is nevertheless here, for better or for worse.[10]

Lessons from Chaos

The inherent human tendency towards order often makes us treat various instabilities, fragilities and uncertainties as fully predictable. In other words, it makes us suffer from the so-called "illusion of control", which assumes predictability and implicitly pervades all aspects of our "fluid" daily lives (with perhaps innumerable negative implications for our psychosocial well-being); it silently fools all of us "into thinking the future is more predictable and less uncertain than it really is" (Makridakis et al. 2009; ix).

The chaos/complexity analytic framework might possibly help us to critically and responsibly reflect upon this catastrophic social "illusion", as well as to better understand and explain (in a non-reductionistic way) the overwhelming, speedy, interdependent/interconnected and relational phenomena that increasingly surround us, such as globalisation, cultural diversity (multiculturalism), religious or national fundamentalism, ethnic conflicts, technoscientific change, etc.

Within the wide field of debate provided by chaos theory, in general, we can clearly see that contemporary human complex systems are not predictable – at least, not beyond a relatively short "predictability horizon". In fact, even if we know the very initial conditions of any system to an astonishingly high degree of accuracy, unpredictability still reigns. But nevertheless we do not actually need predictability, periodicity, stability and equilibrium exactly because we do not need a hopeless, colourless, dull and boring world.

Without suffering from an "illusion of control", social scientists (researchers) have to always keep in mind that human societies are mostly fluid and complex/chaotic and, of course, do not work like a Swiss clock (cause and effect are not proportional any more).

The essential principle of "sensitivity to initial conditions" makes us better understand the overwhelming existence of criti-

[10] Although the scientific "ability to predict unpredictability" would be a very useful tool in policy making (Saperstein 1986), unpredictability itself cannot be predicted (see Katerelos and Koulouris 2004).

cal turning points everywhere in the social structure (e.g. the spread of a small piece of information may cause a stock market or a government to fall). In other words, it makes us better understand what our society really is.

Subsequently, chaos theory might indeed boost our "sociological imagination" (as defined by C. Wright Mills). Most importantly, it might turn out to be very central to our future knowledge explorations, as well as to the further genuine development of critical social thought, including the genuine development of social science theory and methodology (see Cilliers 2005).

Drawing from Sandra L. Bloom's innovative thoughts (2000), as well as from J. Briggs's and F. D. Peat's original work (1999),[11] social/sociological theory can and should eventually learn many useful and interesting "life lessons" from the science of chaos.

First, the output (effect) is not proportional to the input (cause) – that is, the principle of *non-linearity*.[12] Thus, small local re-arrangements may somehow bring unforeseen, unintended and unanticipated global transformations and chaotic side-effects (for the better or for the worse). This perhaps generalises Anthony Giddens's sociological notion of "unacknowledged conditions/unintended consequences of action" (Giddens 1984).

Second, human behaviour, individual or collective, is not predictable (even if simple and fully explainable) – at least, not beyond a relatively short *predictability horizon*. The very making of our world is intrinsically fractal, asymmetrical, ephemeral, disparate, discontinuous and contingent. In fact, we do not actually need predictability, certainty, stability and social equilibrium. The absence or eclipse of all these should not terrify us anymore. Of course, an extremely unstable, unpredictable, uncertain and risky social world would be equally undesirable for our inherent will to "ontological security" (R. D. Laing).

Third, there are no such things as: the "will-less, painless, timeless knowing subject" (in Nietzsche's words), value freedom, disinterested description and explanation,

[11] Specifically, John Briggs and F. David Peat (1999) analytically formulate and develop seven "lessons" for fruitfully embracing chaos in daily human life:

1. Be Creative: how to actively engage with chaos to find new imaginative solutions and perhaps live more dynamically.
2. Use Butterfly Power: how to let chaos grow small-scale local efforts into large-scale global results.
3. Go with the Flow: how to use chaos to work collectively and creatively with others.
4. Explore What's Between: how to meaningfully discover life's rich subtleties and avoid the traps of stereotypes.
5. See the Art of the World: how to appreciate the real beauty of life's chaos.
6. Live Within Time: how to productively utilise time's hidden depths.
7. Rejoin the Whole: how to fully realise our fractal interconnectedness to each other and the world.

[12] "Linear relationships can be captured with a straight line on a graph…. [Relationships within and among] nonlinear systems generally cannot be [mathematically] solved and cannot be added together" (Gleick 1987; 23-24).

neutral observation, pure data,[13] impersonal knowledge, innocent method, and access to totality (Karl Mannheim's and Pierre Bourdieu's secret aspiration). All these are actively replaced by "creative doubt" (Briggs and Peat 1999). But we should always look for a small measure of *synthesis and objectivity*, within a constantly changing and increasingly antagonistic social world.[14]

Fourth, chaos is *neither* avoidable *nor* destructive; instead, it can be imaginatively theorised as a unique *opportunity and capacity* to think, co-act and change, as well as something we should responsibly accept, acknowledge, embrace, celebrate and live with. Life is increasingly chaotic and chaos is indeed a very exciting thing.[15] So, don't panic over chaos! Sociology should ultimately focus on the systematic study of uncertainty, rather than the infertile and unproductive attempt to overcome it. It should also empower the individuals to realise themselves (as parts of a social network or system) in a more reflexive and self-determined way.

Fifth, we should permanently suspend the "old", "traditional" or "received" (substantialist) notion that anything can be merely understood and explained in isolation from anything else. On the contrary, all life is truly, irrevocably and unpredictably *interconnected*. From this *relational* analytic viewpoint, we can clearly see that "particular tensions and dislocations always unfold from the entire system rather than from some defective 'part'. Envisioning an issue as a purely mechanical problem to be solved may bring temporary relief of symptoms, but chaos suggests that in the long run it could be more effective to look at the overall context in which a particular problem manifests itself" (Briggs and Peat 1999; 160-161).[16]

Current Considerations

The on-going, playful and unpredictable *interdependency* of all being surpris-

[13] According to Paul Cilliers, there are indeed "facts that exist independently of the observer of those facts, but the facts do not have their meaning written on their faces. Meaning only comes to be in the process of interaction. Knowledge is interpreted data….Knowledge as something that has meaning for a subject will always be contextualised. It will form part of our experience of the world, and will therefore be influenced by relationships of power. Knowledge cannot be symmetrical, pure, complete or ahistorical. It is always bounded" (Cilliers 2005; 609, 610).

[14] Chaos theory therefore does not refrain from (reflexively) claiming truth, social factuality and objectivity (but not objectivism). Of course, this definitely involves *weak* epistemological claims. In addition, the above means that there is no *single* social or analytic/epistemological (privileged) standpoint from which to reach absolute truth (*aletheia*), or the "cosmic envelope" (Bhaskar). *Synthesis and engagement are always indispensable*. It seems then that the famous Mannheimian quest for an ideal epistemic standpoint (Mannheim 1968) is more adequately answered by the Nietzschean radical dialogical approach of reaching objectivity by gaining as many "eyes" (perspectives) as we can on a matter.

[15] Chaos is the very structure of nature and like any structure is *both* enabling *and* constraining. Again, Giddens's (1984) "structuration theory" seems to be generalised.

[16] In some sense, "we are always a part of the problem" (Briggs and Peat 1999; 160).

ingly gives us enormous hope that there is indeed something beyond a short-sighted, fragmented, reductionistic and exploitative view of human nature. In addition, it is chaos/unpredictability itself that profoundly guarantees the very possibility of human cooperation, synergy, synthesis, pluralism, critical reflexivity, creativity, spirituality, free will and choice.

Creativity can finally overcome the odds and bend the rules (in an innovative way). It can also help us think more deeply and move forward, decisively freed from the obsessive-compulsive struggle for social engineering, manipulation, Promethean control and prediction. Hence, we should openly recognise and acknowledge *spontaneity, emergence and change*, so that we can become *active co-participants* rather than arrogant and narcissistic masters of our world.

We must after all keep in mind that, although most control attempts are destined to fail, it would be the wrong conclusion that "one would just have to apply more force to get control over the system. This would destroy the self-organization in the system, on which social systems are based" (Helbing 2009; 435).

On the contrary, what possibly remains to us is just obtaining a "better understanding of how to make use of the natural tendencies and behaviours at work. A management that supports and guides the natural self-organization in the system would perform much more efficiently than an artificially constructed system that requires continuous forcing. Companies and countries that manage to successfully apply the principle of self-organization will be the future winners of the on-going global competition" (Helbing 2009; 435).

In a more critical vein, Christian Fuchs and Wolfgang Hofkirchner comprehensively argue that a socially, ecologically and technologically sustainable way out of the current world-wide crisis could potentially be established by "the real self-organisation of the individuals that are confronted by the negative effects of global problems. The breakdown of the world system would mean the destruction of society's permanent re-creation-process. In order to maintain the re-creation of society, people who are excluded from the bottom-up-process, which establishes social information, and who are exploited in order to maintain the exclusive character of society would have to organise themselves, in the political sense of the term" (Fuchs and Hofkirchner 2005; 48).

In this regard, we should collectively respond to the vital need (and desire) to effectively solve or overcome our common, global-scale problems and perplexities, as well as to responsibly prevent humanity (as a whole) from destroying itself and becoming extinct – or just falling back into a new Dark Age. This fundamentally requires a radical qualitative shift towards the dominance of *co-operation and co-action* (rather than sterile competition), as well as towards the dominance of *inclusive social information* (rather than exclusive social information).

And if such a groundbreaking shift can be indeed done successfully, then "a just, good and beautiful society may be established that managed to dispose of its global

problems. The principles of such a society would be true social self-organisation and they would include social information" (Fuchs and Hofkirchner 2005; 48).

Hence, let's openly and imaginatively "think of this period of systemic crisis as an arena of struggle for the successor system" (Wallerstein 2010; 140), so that "we can create a very different order of things" (Badiou 2010; 100) – that is, a bold *counter-order* of things and a global *counter-movement* (see Badiou 2010; 66).[17]

From this strikingly fresh analytic angle, we can hopefully see the current financial, economic and social crisis (that is, *a crisis of capitalism itself*, or a crisis through which capitalism, as a historical system, is finally collapsing or approaching a zero-point) as the unique "chance of a new beginning" (Žižek 2010; xii).[18]

Concluding Remarks

Coping with chaos and unpredictability will possibly allow (altruistic) individuality to flourish freely. This involves relatively autonomous, knowledgeable, self-empowered and self-organising/self-determining individuals, who would be capable to reflexively modify and re-construct their symbolic meanings, as well as to dynamically re-orientate and re-shape themselves, under the constant pressures of an ever-changing and unpredictable social and historical environment.

Such a grand (yet realistic) aspiration is located at the core of any critical theoretical project: "The individuals who shall live in the Great Society must be the ones who build it up – they must be free for it, before they can be free in it. No other power can impose or force their society upon them" (Herbert Marcuse, cited in Fuchs and Hofkirchner 2005; 47).

Ultimately, freedom, democracy and self-organisation converge and match together in a truly agonistic way: "Man's striving for freedom is the search for structures of advanced self-organisation of social systems, this implicates the insurgency against heteronomy" (Hörz 1993; 112).

In the very last instance, the mentioned "lessons from chaos" can triumphantly trigger and encourage a genuine reflexive return to the creative transdisciplinary (if not non-

[17] For the French philosopher Alain Badiou, "today we are faced with an utterly cynical capitalism, which is certain that it is the only possible option for a rational organization of society … Today, just as back then, very extensive areas of extreme poverty can be found even in the rich countries. There are outrageous, widening inequalities between countries, as well as between social classes … More than ever, political power, as the current economic crisis with its one single slogan of 'rescue the banks' clearly proves, is merely an agent of capitalism" (Badiou 2010; 258f, 259). Moreover, the current crisis signifies the rapid (and sudden) collapse of the previously established social networks and constitutes a vivid demonstration (or an empirical proof) of our inherent inability to make accurate and long-term socio-economic predictions; both experts and lay people obviously failed to see it coming.

[18] As Slavoj Žižek metaphorically or metonymically writes: "There is a great disorder under heaven, the situation is excellent" (Žižek 2010; xii).

disciplinary) style of thinking and argumentation, which originally inspired the entire sociological enterprise.[19]

Of course, as Giddens perceptively points out, "a little bit more utopian thinking might help too – well, why not? Politics in some ways has become deadly dull. We need more positive ideals in the world, but not empty ones – rather, they should be ideals that link to realistic possibilities of change" (Giddens 2006).

This wholly renewed style (and content) of thinking and argumentation must be definitively *provisional, modest and weak*. In other words, social theory is "still alive, but not in the same way … Perhaps 'theory' has not gone into decline, but rather has dispersed into, and helped construct, various social spaces that now seem to demand explication? Perhaps the only thing that has declined is a certain kind of theory – unified, overarching, certain of itself and its scientific ambitions?" (Reed and Alexander 2009; 25). Nevertheless, nothing could actually be "more important than rediscovering the passion for ideas" (Badiou 2010; 100).

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[19] According to the American sociologist T. R. Young, chaos theory mostly signifies a "postmodern science that sweeps across physics, physiology, psychology and sociology with little regard to discipline boundaries. Oriented to infinite variety, infinite and fractal connectedness and to infinite length in the iterations of any given natural or social system, Chaos theory offers an ontological envelope into which to insert postmodern expressions in music, art, poetry, religion, politics and science itself; indeed, the boundaries between poetry and science, religion and science, politics and science become blurred and intertwined as one inquires into the worlds revealed by chaos research" (Young 1991). By responsibly adjudicating between alternative theoretical/methodological propositions and thereby interconnecting the currently isolated schools of thought, the permanent search for truth and knowledge is arguably becoming "open not closed, dynamic not static, inclusive not exclusive, current not outdated, affirming not denying, innovative not conservative and most of all, living not dead" (Whitworth & Friedman 2009).

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SANTRAUKA

CHAOSAS IR NENUSPĖJAMUMAS SOCIALINĖJE TEORIJOJE: SVARSTYMAI IR PERSPEKTYVOS

Šiame straipsnyje siekiama visapusiškai ir kritiškai apžvelgti chaoso ir nenuspėjamumo vaidmens interpretacijas šiuolaikinėse socialinėse teorijose. Straipsnyje trumpai pristatomos svarbiausios teorinės ir metodologinės koncepcijos, jų raida ir tinkamos perspektyvos, atsirandančios iš sisteminių chaoso tyrinėjimų. Pateikiami argumentai, pagrindžiantys, kad chaosas ir nenuspėjamumas turi būti tinkamai pažinti, suvokti ir sveikintini kaip esminiai visuomenių bruožai ir neriboti kritinių galimybių šaltiniai. Straipsnio pabaigoje teigiama, kad tam tikra valdoma savi-organizacija (socialinėse ar ekonominėse organizacijose) yra žymiai pranašesnė už prometėjišką manipuliaciją ir kontrolę.

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