THE PHENOMENON OF CREATIVITY: PHILOSOPHICAL AND SYNERGETIC INSIGHTS

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Abstract

The paper focuses on the analysis of the creativity phenomenon and it adopts a transdisciplinary approach. The knowledge of synergetics, socio-synergetics and cognitive sciences combined together with philosophical reflections suggest that creative abilities of a human being make the core of reality.

Keywords: Creativity, synergetics, socio-synergetics, transdisciplinary approach

Introduction

It is obvious that the phenomenon of creativity has been analyzed from different perspectives and at great length: the impact of imagination, impact of emotions and feelings on the process of creativity, the importance of motivation in creativity, the development of creativity, the role of creativity in implementation of innovations, the relation between creativity and mental disorders, etc. These issues have been analyzed within the framework of psychology, sociology and cognitive sciences (Beresnevičius 2010: 15–16). However, it has to be admitted that studies employing a transdiciplinary approach are somewhat scarce. Also, philosophical reflection on this phenomenon tends to be rare. Although creativity is seen as related to discovering something new or to something new emerging, there is still no plausible answer to the question *how it happens that something new is discovered or something new emerges*. Moreover, it seems that neither there is an answer to the question *what is new* nor to the question whether this new is related to *the past* and *future*.

This paper does not aim at presenting straightforward answers to the challenging questions provided above. The aim of the paper is to show that transdisciplinary approach, which allows providing feasible solutions, might be particularly useful for attempting to find reasonable answers to the questions posed. The term ‘transdiciplinary approach’ encompasses cognitive sciences, synergetics and socio-synergetics, which are considered

as the sciences where the knowledge of natural and social sciences are closely intertwined with philosophical reflection. Thus, in the analysis of the phenomenon of creativity, the insights of these sciences will be applied. As the philosophical issues of synergetics, socio-synergetics and transdisciplinary discourse have been extensively discussed in the monographs *The Contours of Synergetic World View. Philosophical and Scientific Aspects* (Kanišauskas 2008) and *Philosophical Problems of Social Modelling: Theory, Practice and Values* (Kanišauskas 2013), this paper introduces only the main issues, briefly summarises the key ideas of the transdisciplinary approach and points to conclusions.

On transdisciplinary approach, synergetics and socio-synergetics

The term 'transdisciplinary' was first used by the eminent Swiss psychologist Piaget in 1972 and it was defined as development of a system of integral sciences. Piaget's suggested transdisciplinary project was fervently supported and developed further by the French physicist of Romanian descend Nicolescu who was the founder of the International Centre for Transdisciplinary Research and Studies (CIRET), which was set up in 1987. It has to be admitted that at present there are two prevailing trends of transdisciplinary approach: *the weak* one and *the strong* one. The weak trend of transdisciplinary approach is seen as the application of *methods* used in *systemic* scientific researches to practical needs. The strong trend, on the other hand, seems to emphasize the relation of the scientific research to the very nature of the real world and attempts to encompass all levels of reality at the same time. The followers of the latter trend, Nicolescu including, consciously reject *disciplinary purity* and they are likely to believe in *science transgression*. The postmodern term 'transgression' means violation of prohibitions and trespassing boundaries. In science, this term has to do not only with trespassing disciplinary boundaries and intertwining with philosophical reflection but also with confrontation of the science with non-scientific forms of rational experience, for example, religious, esoteric, everyday, etc. Transdisciplinarity remains strongly oriented towards pragmatism of science or, in other words, towards the solution of particular unresolved issues having practical application (Max-Neef 2005, Mediscus 2005, Mittelstraβ 2010, Nicolescu 1997, 2002, Pohl 2010, Киященко 2005, 2006).

The term 'synergetics', introduced by the German physicist Haken, prevails in the West Europe and Russia, whereas the US scientists prefer the term of 'Complexity Theory'. Furthermore, Prigogin, as one of the founders of synergetics, used the term 'New Science'. Alongside, the term 'Theory of Self-organization' has been used interchangeably. However, sometimes the term 'Chaos Theory' is incorrectly used instead of synergetics. It has to be

noted that the terms 'Chaos Theory', 'Theory of Catastrophes', 'Fractal Theory' and 'Theory of Autopoiesis' make up only a part of synergetics. Also, synergetics is closely related to the Theory of Information, Cybernetics and General System Theory and it applies nonlinear mathematics. This paper uses the term 'synergetics'.

The very term 'synergetics' describes the essence of it – it is a science which studies collective processes and actions (The Greek word *syn* means collective and the word *energia* means an action and energy). As processes evolve in time, we can say that synergetics studies the *development, evolution or behaviour of complex systems*. Although synergetic processes are extremely complex, their essence can be rendered fairly easily. Due to natural dissipation of energy and material, any complex system inevitably undergoes some kind of crisis, or in other words, catastrophe, chaos, phase transition or bifurcation. These terms applied in synergetics focus on different characteristics of evolutionary process. In chaos, the old structures deteriorate and new orderly structures displaying different quality occur immediately. Often such processes are called *emergent evolution*, and F. Varela, the author of *autopoiesis* theory, relates them to creativity. What concerns creativity, the states of chaos or, in other words, crises are often considered as creativity's torment, which are followed by some kind of epiphany, breakthrough to the depth of a new understanding of reality. Therefore, it comes as no surprise that specialists who studied the processes of creativity admit unanimously that the source of creativity and innovation is the *lack of stability* (Liedka 2005). Also, synergetics provides an answer to the posed question whether this new is related in one or another way to something that has already happened or is going to happen. The newness related to the past is linked to the initial programme of the system (or *operational closure*), and the newness related to the future is linked to *strange attractors* and feedback systems.

The term *socio-synergetics* was suggested by Cheryl Clark around 30 years ago and it is defined as applying universal methods, which are characteristic of statistical physics and synergetics, in social sciences (Weidlich 1991). It can also be described as application of principles and regularities of synergetics to social processes (Branskii 2004), self-organization theory of social processes (Хиценко 2005), systemic sociology (Давыдов 2006), etc. Socio-synergetics is a transdisciplinary science which covers a wide range of practical and theoretical approaches. Davydov (Давыдов 1994: 9–10) maintains that there are thirty seven approaches, for example, adaptive management, the theory of algebraic systems, cellular automatons, artificial intellect, communication systems, management systems of intellect, the theory of signal detection, graph theory, design, etc.

The levels of creativity and the theory of *autopoiesis*

In the monograph *Reality and Creativity*, Lithuanian philosopher Kačerauskas (2008: 64) poses a question *In what way does the existential creativity manifest?* and attempts to address it by applying the approaches of phenomenological ontology and hermeneutic epistemology. However, the question remains unanswered. Most probably, the answer lies in transdisciplinary socio-synergetics, and to be more precise, in F. Varela's theory of *autopoiesis*. Varela developed the theory together with his teacher U. Mutarana, who worked in the field of physiology of vision.

Aristotle contended that practical application (*praxis*) and creativity (*poiesis*) are two completely different things (Aristotelis 1999: 173–175). Although this idea prevails up to now, Varela and Mutarana's researches into neurophysiology showed that in nature such phenomena as self-organization, i.e. *autopoiesis*, and *praxis* coexist. Moreover, *poiesis* is not considered as a process but as a completely unexpected occurrence of a new quality.

Varela's definition of *creativity* allows differentiating it into the following hierarchical levels (Kanišauskas 2011):

1. *Absolute creativity*, which is considered as creating of absolute newness, i.e. something that did not and could not exist before.
2. *Essential creativity*, which is supposed to be as an occurrence or creating of something which did not exist before but what could or can exist.
3. *Regular creativity*, which is thought as remaking of something that exists providing the reality with new (not existent before) elements.
4. *Adaptive creativity*, which is considered as improvement and adaptation of newly created things to practical needs.

Absolute creativity can be attributed only to God, who is understood in a theistic sense. Thus, the phenomenon of absolute creativity belongs to the domain of theology and religious philosophy; therefore, it will not be addressed in this paper. *Essential creativity* is attributed to both God (here this notion is understood in theistic and pantheistic senses) and a human being (society). It is implied in the vedantic formula "Atman equals Brachman" and in the Christian conception where the humanity is made in the image God. Most scientific and philosophical researches, this paper including, mainly focus on *regular creativity*. *Adaptive creativity* has to do not only with a human being but also with all living things. Varela devoted most of his attention to this level of creativity.

However, the levels of creativity can be classified in other ways. For example, Boden (2004) distinguishes two types of creativity: *improbalist creativity and impossibilist creativity*. The former type of creativity is related to new combinations of positively valued familiar ideas, whereas the latter is

attributed to researches into conceptual spaces, their development and transformations, which lead to completely new ideas. It has to be noted that the second type of creativity corresponds to *essential creativity*, while the first type conforms to *regular creativity*.

It has to be noted that Varela's *autopoiesis* theory can be applied to all living beings. As Varela puts it, human beings are inevitably biological beings, thus their creative faculty obey the laws which govern activities of any living beings. Due to peculiarities of the closed cycle of the occurring processes, all living beings, human beings including, establish the domain of all interactions with the environment in which they are able to maintain their identity. Varela addressed the closure and responses to different stimuli as *operational closure*. In cognitive processes, *operational closure* is nothing more than *self-reference*, whereas in synergetics it is considered as an *initial programme*, which together with feedback systems and ability of the system to adapt to the changing environment determines the course of teleonomic and emergent invariant evolution. According to Varela, creativity is an emergent (sudden, saltatory) qualitative change.

It has already been demonstrated (Kanišauskas 2011) that the term *operational closure* which is used in synergetics stands in synonymical relation to the term *initial programme*. Furthermore, if we apply the latter term to the human being, it becomes a genetic and social code (Степин 2010). The social code is comprehended as information and cultural heritage which are consciously or subconsciously passed and acquired from one generation to another and which handle social relationships. On the one hand, this *initial programme* (or *operational closure*, or *self-reference*) allows living systems to maintain their identity. On the other hand, self-reference is the outcome of physical and symbolic complementarity of the inner structures. Within contextually conditioned cycles of receiving signals from the environment, they acquire distinctive meanings of signs and symbols in a fractal way, and *operational closure* turns into *semantic closure* while interpretations of signs lead to a *self-referential loop* (Хиценко 2005: 65–66), which in philosophy is known as a *hermeneutic cycle*. Thus, comprehension as well as creative processes are regulated by *acquired environment* – this is the essence of self-reference. Human beings cannot truly comprehend what they have not been able to acquire and what has not become a part of their life. Apparently, completely new is likely to be something what has not been comprehended or acquired yet. Creativity as an occurrence of something what is *partly* or *completely new* is conscious or subconscious destruction of the acquired environment, transition to the state of *determined chaos*. As a result of these transformations, entirely new structures are being established spontaneously. Coming back to Kačerauskas question considering the ways in which *existential creativity* manifests, it has

to be admitted that manifestation of creativity of human existence depends on a range of synergetic processes which are immanent to the reality. These processes are not only inherent in human existence but also in all levels of creativity. It is interesting that creative processes are intrinsically characteristic of the *destruction* in the *acquired environment*, which often manifests in digression to a *non-mind* sphere, and thus in the interaction of *mind* and *non-mind* existential freedom and creativity appear (Kačerauskas 2008: 164–165).

The lack of stability and the states of transformed consciousness as sources of creativity

In the book *States of Consciousness* one of the founders of transpersonal psychology Charles Tart (Тарт 1994) asserts that *destruction of the acquired environment* is closely related to *altered states of consciousness*. The normal state of consciousness can be destabilized by alcohol, psychotropic drugs, extreme emotions, stresses, meditations, hypnosis, sensory deprivation and so forth. This can be illustrated by an example from my personal interaction with the Russian astronaut V. Zudov, who confessed that while being in a *sensory deprivation* tank, he started painting pictures which later were lavishly praised by professional artists although he could not paint even the most common things before. Moreover, he could perform complex mathematical calculations (doing sums, subtracting, multiplying, extracting square and cube roots with eighteen-figure numbers) accurately. However, when he left the sensory deprivation tank, he lost all these abilities. Thus, it has to be acknowledged that higher levels of reality, which are often considered as dreams or hallucinations, unfold to people not only when they are under stress or affected by alcohol and psychotropic drugs but also during the state of sensory deprivation (Ротенберг, Аршавский 1984) and they become the source of creative inspiration.

On the other hand, the *destruction of acquired environment* or the *lack of stability* tends to become not only a rich source of inspiration for creativity and innovations but it has to be admitted that they pose a major threat to vitality of any system. The system can enter a qualitatively new stage of its development or it can be completely destroyed. It seems that creative personalities quite often undergo such tragic personal crises. Hence, the scientists working within the field of socio-synergetics bring up the question: *How is it possible to match the lack of stability, which is necessary for creative development, with stability which is not less important in order to ensure the vitality of the system?*

This problem has been addressed in detail in Kanišauskas' (2010) while this paper briefly summarizes it by asserting that in order to maintain

stable diversity within the society, it is necessary for the society to have a variety of people having different abilities: geniuses and madmen, altruists and egoists, religious people and atheists, etc. This idea is also supported by the Russian sociologist and socio-synergist Davydov (Давыдов 1994, 2006), who demonstrated that social systems are not unique and 96% of their behaviour is not determined by synergetic processes which are intended for maintaining stability. However, if we want to combine *diversity* and *stability* in the ever-changing society, some kind of *disharmony* is indispensible. On the one hand, it cannot be too big because the crisis will inevitably turn into a catastrophe and destruction; on the other hand, it cannot be too small because it can lead to stagnation of the society and an individual. The *necessary disharmony* should be moderate and the boundaries of being moderate can be established by using the *constant of necessary disharmony* which equals to 6%. Too big digressions from this constant to one or another side can arouse complete destruction of the system (Давыдов 1994, 91–100). This conclusion seems to be very significant to individuals whose work has to do with creative activities.

The problem of grounding the levels of reality and emergent nature of creativity

In fact, all above presented theories tend to be grounded on the idea or belief that reality is hierarchically subordinated. This paper shares the same idea about the *levels of creativity*. However, the idea of *hierarchy* in social relations which was existent in the ancient Egypt and which is concurrent with *emergency* seems to have a number of followers as well as adversaries. Discussions on this issue (Dagys 2007, Grenda 2006, 2007, Jenkins 2008, Lehmann 2010, Makin 2006, Persson 2006, Schwenk 2006, Stephan 2002, Юлина 2010) have highlighted several essential viewpoints: dispositional reductionism, panpsychism, methodological naturalism, weak emergence, mental logic, supervenience physicalism. Nagel's panpsychism theory is the only one which claims that there are not any levels of hierarchy and emergence in reality; rather, everything is determined by promental characteristics of the Universe. Conversely, other scientists tend to acknowledge the hierarchical character and emergency and, consequently, they maintain that *creative powers* lie within reality. Alas, it has to be admitted that the scientists attempt to prove the same idea applying different methodologies and, as a result, they come up with a lot of disagreements (Юлина 2010). As a matter of fact, the long-running disputes concern the relation between ideal and material, between consciousness and body as radically different levels of reality. Although they employ different methodologies, they arrive at the same conclusion – this type of relation exits and it is determined by *downward causation* which can be understood as a

powerful impact of the higher levels of reality on the lower ones (Paranjpe 1984: 285). This conception allows admitting that *essential* and even *absolute creativity* are really existent. Although the term 'downward causation' seems to be ambiguous (Hulswit 2005), researches in cognitive neuropsychology (R. W. Spery, R. van Gulick) allows us to demonstrate that different higher levels of reality considerably influence, direct and rule only those lower levels of reality which are similar to them in terms of their quality, i.e. they are analogous. In its own turn, the lower level quality arouses only such higher level quality which is analogous to the lower one (Kanišauskas 2011). This explains why some creative individuals are only interested in mathematics, whereas the others prefer, for example, arts or philosophy.

Conclusion

1. The recent ontological, epistemological and transdisciplinary researches allow maintaining that the powers of an individual's creativity are within reality. The occurrence of something new is inevitably related to emergent characteristics of reality.

2. Transdisciplinary cognitive sciences and socio-synergetics not only confirm this claim but also define particular limits of the creative process.

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