

Discourses of Ecology and the Sketches of Creative Ecology in the Context of Sustainable Development

Dyskursy ekologiczne a zarys ekologii kreatywnej w kontekście zrównoważonego rozwoju

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Abstract

The paper deals with the different discourses of ecology, including creative ecology, in the context of sustainable development. The author presents a classification of the ecological discourses as follows: meta-ecology, area ecology, educational ecology, linguistic ecology, ecology of novelty, technological ecology, epistemological ecology, approach ecology, political ecology, and ecology of visuality. Additionally, every branch of ecology has been divided into 3 sub-branches. According to the author, ecology has become a problem only after human activity has started to threaten for the very human environment including natural and *ipso facto* for human being, i.e. for social sustainable development. The extension of ecology discourse could be treated as the result for both of the mania of nature protection and of *invasion* of cultural area into natural one. The ecological discourses are also often incommensurable, since they stem from very different scientific rims despite analogous terms (ecology) and approaches (environmental). Even in the cases when they do not deal with the nature and natural environment, the laws of nature and the relationships between the organisms within it, serve as a model for an ecological discourse. Some features are characteristic for different discourses of ecology: 1) reference to certain environment; 2) suggested protection of a natural or cultural area; 3) systematic approach; 4) the attitude that the parts of a system are fighting for their survival like the organisms in the nature; 5) dynamic approach towards both the system and its parts under the evolution; 6) conviction that the human activity should be regulated and limited. Creative ecology could be treated both: as a branch in ecology of novelty and as a kind of meta-discourse, since every discourse requires creative thinking.

Key words: creative ecology, ecological thinking, classification of ecologies, creative and cultural industries, discourses of environment

Streszczenie

Artykuł omawia różne dyskursy ekologiczne, włącznie z ekologią kreatywną, w kontekście zrównoważonego rozwoju. Przedstawiono klasyfikację dyskursów ekologicznych uwzględniając: meta-ekologię, ekologię przestrzeni, edukację ekologiczną, ekologię lingwistyczną, nową ekologię, ekologię techniczną, ekologię epistemologiczną, ekologię polityczną i ekologię wizualną. Ponadto w ramach każdej z wymienionych dyscyplin ekologii wydzielono 3 sub-dyscypliny. Zdaniem autora, ekologia stała się problemem, gdy ludzka aktywność zaczęła zagrażać środowisku i *ipso facto* samemu człowiekowi, w tym społecznemu filarowi rozwoju zrównoważonego. Rozszerzenie dyskursu ekologicznego bywa traktowane jako *odchylenie* ochrony środowiska i *inwazja* sfery kultury w sferę natury. Dyskursy ekologiczne są zwykle niewspółmierne, ponieważ wywodzą się z różnych nauk, pomimo analogicznych terminów (ekologia) i podejść (do środowiska). Jednakże, nawet w przypadku gdy nie dyskutują one przyrody i środowiska naturalnego, praw natury i relacji pomiędzy organizmami – i tak służą za model dyskursu ekologicznego. Można wskazać tu na cechy charakterystyczne dla różnych dyskursów: 1) odniesienie do środowiska; 2) sugerowana ochrona naturalnej lub kulturowej przestrzeni; 3) podejście systematyczne; 4) przekonanie, że części systemu walczą o swe przetrwanie w sposób analogiczny do organizmów w przyrodzie; 5) dynamiczne podejście wobec zarówno systemu, jak i jego podlegających ewolucji części; 6) przekonanie, że ludzka

działalność powinna podlegać regulacji i być ograniczona. Kreatywną ekologię można traktować zarówno jako dziedzinę nowejologii, jak i rodzaj meta-dyskursu wymagającego kreatywnego myślenia.

Słowa kluczowe: ekologia kreatywna, myślenie ekologiczne, podział ekologii, przemysł kreatywny i kulturowy, dyskurs środowiskowy

Introduction

Usually, the discourse of ecology refers to natural order under the attack of human activity. First of all, it means that the nature is an environment of human being, who is also a part of nature to be protected. As a result, the discourses of environment and of ecology cover each other. However, these discourses are not monolithic. Besides natural environment, we deal with the social, economic, cultural environments and the correspondent scientific discourses including one of sustainable development. Similarly, the scholars speak about the different ecologies including urban, educational, linguistic, technological, epistemological, political and other ecologies. Despite the fact that the most of these ecologies are meta-discourses, i.e. do not deal anymore with the nature and the organisms within it, they appeal to certain analogy concerning basic ecological discourse. First of all they speak (at least in metaphorical way) about the environment and its agents that fight for survival. Although the agents of certain ecosystem are the competitors, the cooperation in different forms is even more important. Finally, the ecological discourses refer both to the mutations of the organisms and dangers for the whole system, collapse of which threatens the organisms within it and their sustainable development. As a result, the ecological thinking appeals to both systemic and dynamic approaches.

The theorists of sustainable development (Hull, 2008) refer to certain analogy between natural and social environments, as well as to the fact that human being is a part of natural eco-system. However, some of them (Heilig, 1997) present the arguments that the term *sustainability* reflects a biologicistic approach not proper for development of human society. The concept of creative ecology is a kind of the ecological discourses that refers to human activity beyond natural order. On the other hand, human creativity depends on the natural processes inside and outside us. By defining the creative ecology, Howkins (2009) refers to free thinking, circles and cores of creativity, creative niches, creative education, and changes of the ideas. On the one hand, creative ecology deals with certain environment of the creative workers. For example, it could be the social or economic environment of creative industries analysed by Howkins elsewhere (2013). On the other hand, such characteristic of creative ecology as creative thinking penetrates all human activities. As a result, we can

speak about creative ecology as a kind of meta-discourse.

Almost all researchers of creativity face the questions about the environment (Baltrėnas *et al.*, 2015; Lee *et al.*, 2015; Dul, Ceylan, 2014), the limits (Kačerauskas, Tamošauskas, 2015; Kulbytė, 2014; Yang, 2012), and the ethics (Steen, 2015; Gino, Wiltermuth, 2014; Skorupa, 2014; Valivonytė, 2013) of creativity, although not all of them reflect these questions in the perspective of ecological thinking. First of all, I shall analyse the different ecological discourses and suggest certain classification of them (1. Etymology, origin and classification of the ecological discourses). Later, I shall analyse the certain ecological discourses from the perspective of creativity (2. Towards creative ecology: The ecological problems in the perspective of creativity). In this way, the aim of the paper is to present the sketches of creative ecology.

1. Etymology, origin and classification of the ecological discourses

The term *ecology* stems from two Greek words *logos* and *oikos*. While *logos* refers to scientific discourse, *oikos* means a home, i.e. environment of a home, certain home order and finally balance of incomes and outcomes within a home (a kind of sustainable development). As a result, etymology of ecology refers to certain relationship between a human being and his (her) environment created by him (her). Even speaking about natural environment of human activity we understand this environment only in the perspective of human creativity. The paradox is as follows: ecology has become a problem only after human activity has started to threaten for the very human environment, including natural and ipso facto for human being, i.e. for social sustainable development. Not by accident, economy and ecology refer to the same ancient word, *oikos*. However, as distinct from ecology, economy has been developed since hundred years. On the one hand, industry has wasted the natural environment of human being. On the other hand, the human being has started to consider the nature as his (her) home to be nourished.

Hironaka, Schofer (2000) showed that the interest in environmental protection ipso facto in ecological approach has emerged only in the beginning of the 20th century¹. It could be treated as a response to the challenges of natural sustainable development. For ex-

¹ According to Hironaka, Schofer (2000), the indicators of ecological approach are as follows: 1) the number of national parks, 2) chapters of international environmental

nongovernmental organizations (INGO), 3) state memberships in intergovernmental environmental organizations

ample, the number of national parks has increased from 40 by 1900 to 7 000 by 1990 worldwide. We face similar dynamics of INGOs and IGOs. Similarly, *the numbers of environmental impact assessment laws grew from only 1 in 1969 to more than 50 by 1990* (Hironaka, Schofer, 2000, p. 98). Additionally, the environmental ministries grew from 1 in 1971 to at least 109 by 1995. This dynamic of interest towards natural environment and ecology shows both the response to the challenges raised by human economic (industrial) activity (Petersen *et al.*, 2008) and the attempt to make nature as a subject of governmental policy. In other words, nature has become a human home (*oikos*), the order of which and especially the relationships with which should be regulated by governmental policies. The extension of ecology discourse could be treated as the result both of the mania of nature protection and of invasion of cultural area into natural one.

Figure 1 exhibits at least 10 areas of scientific ecological discourses, each of which is divided into 3 sub-areas. It does not mean that there are only 30 scientific ways to develop the ecological ideas and this list is finite. The branches of science develop in very different and often unpredicted ways, which do not intersect each other. The ecological discourses are also often incommensurable, since they stem from very different scientific rims despite analogous terms (ecology) and approaches (environmental). What concerns approach, all these discourses appeal to certain environment, but not necessary natural. Even in the cases, when they do not deal with the nature and natural environment, the laws of nature and the relationships between the organisms within it, serve as a model. As a result, at least two features are characteristic for different discourses of ecology: 1) key word ecology and 2) systematic approach when the components of the system (*oikos*) have been treated as the organisms that both collaborate with each other and compete trying to survive.

In Figure 1, the basic discourse of ecology has been indicated as area of ecology that covers first of all country side ecology (Wang *et al.*, 2013; Zhao *et al.*, 2011) and marine ecology (Baziuke *et al.*, 2014; Taelman *et al.*, 2014). Such areas as country side and marine are the most untouched by human activity. Anyway, discourse of ecology even in these *untouched* areas presupposes always human activity in two senses: 1) human activity threatens natural system; 2) regulation of natural system including regulation of the relationships with it is already a human activity. Urban ecology has been developed in two-fold ways. On the one hand, it deals with the rests of natural environment (such as parks or several trees) in urban space (Caruso *et al.*, 1993) that is under the

danger of pollution followed from human activity. On the other hand, urban ecology deals with the social groups analogous to the animal groups that should survive (Cohen-Rosenthal, 2004) in such anthropological environment as city.

However, so called meta-ecology is the most remote from the subject of natural environment. It could be divided into three sub-areas sometimes incommensurable: Philosophy of ecology, Ecological ontology and Ecological thinking. The first one deals with the ecological ideas in history of philosophy (Paden *et al.*, 2013; Botha, 2003; Zimmerman, 1993) or with philosophical considerations on ecosystem, part of which is human being (Christensen, 2014; Colyvan *et al.*, 2009). The systemic ecology analyses the issues of a system in general, as well as the questions of the mutual relations within a system (Cohen-Rosenthal, 2004). The ecological ontology or ecological cosmology deals with the abstract principles of the universe and with relations between these principles (Cranwell, 2010). Although the discourse of ecological thinking can neglect philosophical tradition and philosophical methods, it deals with most general questions, how to think in ecological way (Howkins, 2009). In other words, the certain thinking or viewing is the first in the ecological movement.

Educational ecology deals with relationships between the teachers and the students, as well with educational environment. The different perspectives of it result from the three parts of educational ecology: ecology of learning, ecology of teaching (Pennington, Hoekje, 2014; Rusby *et al.*, 2013), and teaching ecosystems (Cokadar, Yilmaz, 2010). Linguistic ecology treats the components of the language as the parts of certain ecosystem that should be under protection. Since there are very different regions in linguistic areal, we have ecology of language in general (Fowler *et al.*, 2011) or ecology of certain language, ecology of the concepts or ecology of logic (Gabora *et al.*, 2008), as well ecology of the metaphors (Richards, 1936; Newell, Cousins, 2014).

Ecology of novelty presupposes an idea that every novelty should be harmonized with tradition. In other words, novelty should serve sustainable development. On the other hand, every novelty emerges in a certain system of views, believes, attitudes, aims etc. As a result, this cultural environment should be open enough to encourage the new ideas, while these ideas should not be too destructive towards the system of culture. It seems, ecology of discovery is a part of physical geography (Fitzhugh, 2001). Nevertheless, we discover and invent only after we have a correspondent request, i.e. a social niche for it². The same may be said about ecology of innovations,

(IGO), 4) environmental impact assessment laws, 5) national environmental ministries.

² A good example is discovery of America supposedly discovered by the Vikings some hundreds ago. This discovery had been made actual by the surplus of population in Western civilization and by a need of new regions for the extension of this civilization by the end of 16th century.

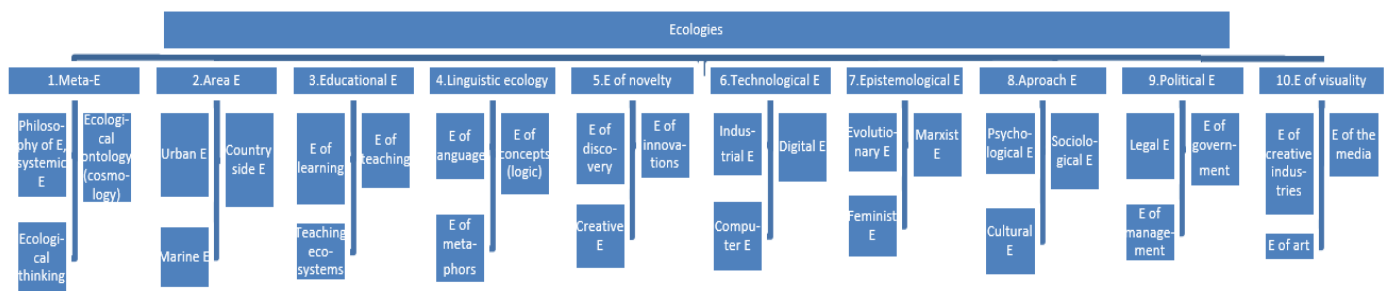


Figure 1. Classification of the ecologies

usually developed in technological discourse. Creative ecology could be treated both: as ecology of novelty and as a kind of meta-discourse since every discourse requires creative thinking (Howkins 2009).

The mentioned 3 branches of technological ecology do not exhaust all possible ecological discourses in technologies. Industrial (Newell, Cousins, 2014), digital (Bruni, 2015) and information (Johri *et al.*, 2014) ecologies being inseparable could be treated as the parts both of technological knowledge system and of corresponding discursive systems. Additionally, these ones like any ecological discourse are inseparable from social attitudes and aims to be preferred. As a result, the ecological discourses function also as the crossing points of different scientific knowledge. This issue leads to epistemological ecologies that prefer certain scientific point of view: evolutionary (Cranwell, 2010; Fitzhugh, 2001), Marxist (Newell, Cousins, 2014), Feminist (Tschakert, 2012) etc. This list could be added by psychoanalytic, phenomenological, structuralistic and other ecologies. Epistemic ecologies divide the system of ecological knowledge into the discrete (incommensurable) regions. On the one hand, this *narrowness* of the different *episteme* is a condition of any scientific discourse. On the other hand, it threatens to the very system of ecological knowledge. We have a similar situation in so called approach ecologies that use the different scientific approaches of psychology, sociology, cultural studies etc. However, approach ecologies deal first of all with the systems of the corresponding sciences and the niches for their development. So epistemic and approach ecologies deal with the subjects from the different levels.

Political ecology deals with legal system, as well with levels of government and management. Legal ecology results in at least two kinds of systems, including hierarchy of national legal acts with the constitution above and the whole of ecological initiatives to be regulated by legal means. Similarly, ecology of government deals with the effective principles of government and with still ecological environment to be governed. Sometimes, the certain areas of social life should be free from governance in order

to keep them ecological. Not by accident, ecology of management (so called micro-governance) usually prefers *soft* control instead of *hard* one.

Visual or pictorial turn (Mitchell, 1994) in postmodern culture results the ecology of visibility (Gibson, 1979; Ivakhiv, 2007). Since most of the creative industries (CIs) like the arts and the media are visual, they could be attributed to the same class. We can speak about an analogy to ecology of visibility, even in the case of audio culture (such as music industry or radio media). Ecology of the media could be developed in twofold ways. On the one hand, it deals with cultural and social context (system) of the media and the relationship between the different media that should survive like any organism³. On the other hand, the media channels (at least some of them) reflect the natural ecological system (Cottle, 2004). Similarly, ecology of the CIs deals with their economic, social and cultural environment (Lange *et al.*, 2008; Sunley *et al.*, 2008). Besides this, ecology of the CIs deals with the creative niches for the cultural products (Bourdieu, 1993) in the social environment. Ecology of art deals both with the art system and with place of art in the life-world.

2. Towards creative ecology: The ecological problems in the perspective of creativity

Table 1 exhibits some ecological problems related to creative approach. As mentioned before, the creative ecology could be understood in twofold ways: as a meta-strategy applied to the different ecological discourses and as one autonomous branch in the family of the ecological discourses. By analysing the creative problems, I shall have in mind both moments. On the one hand, I shall analyse the specific problems in the different scientific contexts in order to sketch the creative ecology. On the other hand, the creative ecology is a frame for interpretation of these problems. Table 1 covers not all ecological discourses mentioned in Figure 1. First, some of the mentioned ecological discourses are hypothetical. Second, not all of them are useful for sketching the creative ecology. The succession of analysis is the

³ The example of the dead media is the telegraph.

Subjects	Problems	References
Ecological cosmology Ecology of love and death Evolutionary ecology	<p>What are the perspectives of ecological cosmology?</p> <p>What current does the universe possess – a creative or a destructive?</p> <p>What is the relationship of creative (eros) and destructive (thanatos) principles?</p> <p>What is the role of chaos (destruction) in the evolution? What is the primary and secondary organising principle – eros or thanatos?</p> <p>Why does the ecological order require a balance of the existence of life forms with their death? May we talk about the ecology caused by death? What is the sense of evolution – creation or death? What about the agents of thanatos in society? What kind of dialectical connection is between killing and creation? How does eros enable evolution? What is the sense of the thanative moments in our lives? What are the deeper and more expanded ecologies of being and inter-relations? What does ecology refer to? What kind of dialectics is among thanatos, eros, and ecology? What is evolutionary ecology?</p>	Cranwell, 2010
Systemic ecology; Ecological thinking; Industrial ecology	<p>Is the industrial environment (IE) a kind of social environment to survive? If all ecologies reflect the relationships, what kind of relationship does IE presuppose? What about entropy – is it a problem or a solution? How to treat pollution in the perspective of IE? What is ecological thinking? How to coordinate consumption tendency and an ecological imperative to use less? What is the hierarchy of material use and reuse?</p>	Cohen-Rosenthal, 2004
Teaching ecosystems	<p>What is the role of community atmosphere during learning and teaching?</p>	Cokadar, Yilmaz, 2010
Ecology of language (EL)	<p>What kind of activity does EL presuppose? What is the environment of language? What kind of interactions do we have in language system? What do complex dynamical systems of language refer to?</p>	Fowler <i>et al.</i> , 2011

Subjects	Problems	References
Ecology of concepts (logic)	<p>What is the context of the concepts – the internal structures or life-world? What about the factors of conceptualization? What role of worldview is in the process of conceptualization? What is the condition of existence of the concepts and categories?</p>	Gabora <i>et al.</i> , 2008
Evolutionary ecology; Ecology of invention and innovation	<p>What is the relationship between technology and social evolution? What is the difference between invention and innovation? What is the content of evolutionary ecology in the context of systemic and epistemic uncertainty, parametric and strategic variability?</p>	Fitzhugh, 2001
Ecology of innovations	<p>What is innovation? How to understand the innovations in certain epistemological context? What kind of network and collaboration do the innovations presuppose?</p>	Adkins <i>et al.</i> , 2007
Industrial ecology (IE); Marxist ecology (ME); Urban (political) ecology (UE); Ecology of metaphors	<p>What kind of ecologies emerge in the context of social metabolism and urban ecosystem discourses? Are the industrial systems analogous to the organisms and in what terms? What are the epistemological differences between the ecological perspectives of IE, ME and UE? What are the organismic qualities of the city and mass-balance model? What is ontological base of industrial ecology in the context of urban metabolism? What is the model of UE? What does ME emphasize? What is the condition of metaphors' surviving?</p>	Newell, Cousins, 2014
Psychological ecology; Ecology of visibility	<p>What is the relationship between perception of oneself and one's environment? What about the environment of visual perception?</p>	Gibson, 1979
Political ecology; Feminist ecology (FE); Legal ecology	<p>What role does the feminist political ecology have? What characteristics of social relations does FE refer to? How does the climate discourse encompass the legal questions? What does the right-based discourse cover? What are the right questions about?</p>	Tschakert, 2012

Subjects	Problems	References
Ecology of CIs governance; Ecology of the creative industries (CIs); Ecology of culturepreneurship	What are the limits of governance ecology towards the CIs? What is the definition of CIs? What is the environment of CIs – cultural economy, state or society? What is role of social and geographic space in the development of the CIs? What about gentrification? What are the reasons of creative places' attractiveness? How to define the term culturepreneur? What kind of context does it presuppose? What are the factors of culturepreneurs' ecology? May we treat self-governance as an ecologic niche in CIs?	Lange <i>et al.</i> , 2008
Ecology of design	What does innovation in design involve? What is the role of design market? What values do the CIs refer to? What is the role of the designers in cultural environment?	Sunley <i>et al.</i> , 2008
Ecology of the media; Ecology of cultural (TV) production	What is the production ecology in the context of the media? What is cultural production? How to manage cultural production within the creative industries? What kind of policy should be used towards cultural production? Why are the themes of surviving (sex, violence and death) the most attractive ones in TV production? How should TV channels survive in the context of <i>rating thinking</i> (Bourdieu 1998) of TV channels' competition? What do the TV producers pursue?	Cottle, 2004 Bourdieu, 1993

same like in Figure 1, i.e. from more abstract and general discourses to the specific ones.

Usually, the philosophical discourse is considered to be the most general. In his philosophical considerations, Cranwell (2010) raises the questions about cosmological order and its creative impulses – eros (principle of love) and thanatos (principle of death). On the one hand, the cosmological order needs a balance and stability (sustainable development) for evolutionary creativity; on the other – it needs the changes presupposed by thanatos. Hence, the niche of love's ecology is namely death. As a result, ecological cosmology serves theodicy, i.e. justification

of good and omnipotent God in the environment of world's evils. Unlike Platonic considerations⁴, ontological ecology attributes systemic characteristic to the evil and to its source of death that has creative outcomes.

Cohen-Rosenthal (2004) raises the question about ecological thinking in an industrial environment and consumer society. Similarly, we can raise a question about the role of art in an industrial environment and consumer society. On the one hand, art having vague perspectives of consuming is a secondary product of human activity, i.e. a kind of pollution. On the other hand, art disturbs this economic thinking and creates a niche for alternative life-art. Not by accident, Cohen-Rosenthal speaks about the role of entropy in systemic ecology. In other words, entropy as a kind of system's death could be a solution for the system (industrial or consumer) to be renewed.

A kind of ecological thinking has been developed in ecology of both teaching and learning (Cokadar, Yilmaz, 2010). Teaching and learning are inseparable in the same creative eco-system. It is not enough to say in phenomenological manner that a teacher should be intentional and a student should be open. We can speak about the niches of learning in teaching and vice versa. In this way, we face also a kind of creative entropy while changing the roles between a teacher and a student. However, this dynamics is not as dis-balance of education system, inseparable from the social environment, but as the result of renewal of it.

Ecology of language (Fowler *et al.*, 2011) and ecology of concepts (Gabora *et al.*, 2008) face similar logical problems. First of all, there a question arises in both of them: what is the environment of language in general and of concepts in particular. Is it a linguistic system, human thinking (and viewing) or life-world? Actually, the interaction of these different environments (systems) creates the niches for human activity that changes the systems in turn of both logic and ontological levels. As a result, logical ecology could be a key for solving logical problems since Zeno of Elea. Ecology of metaphors (Newell, Cousins, 2014) could be treated as a kind of language ecology with the similar problems of interaction between poetic language and poetic being. Last but not least, ecology of metaphors refers to creative environment of different levels.

As Fitzhugh (2001) shows, evolutionary ecology could be developed from two different perspectives. One of them is philosophy of science including the above mentioned questions of discovery and invention in certain social environment. Another one is physical geography, inseparable from the social perspectives. Evolutionary ecology refers to the dynamics of the systems and the agents within them. On the other hand, it refers to the principle of hard compete-

⁴ According to Plato, evil is only a defect of the system, i.e. has no independent ontological base (*malum as privation*) See Plato (2013).

tion and fight for surviving. These principles characterize the creative environment better than, say, R. Florida's (2002) principle of tolerance. Every new creative idea should fight for its surviving in a hostile environment despite intolerance that makes the idea stronger. Finally, there arises the question: what is a creative or innovative idea (Adkins *et al.*, 2007) presupposed in certain social environment?

Since urban ecology (Newell, Cousins, 2014) deals not only with *green* environment in a city (1st level of ecology), but also with competition of the cities in global urban system, creativity has been treated as an advantage to survive (2nd level of ecology). As a result, we have a concept of creative city (Florida, 2005; Florida, Tinagli, 2004; Cetindamar, Günsel, 2012; Gong, 2013), which is more attractive for both investors and the society. By the way, one of the indices of urban creative environment could be the number of the parks and other *green* places in a city. In this case, we have intersection of 1st and 2nd levels of urban ecology that is inseparable from political ecology.

Similarly, psychological ecology (Gibson, 1979) deals with two realities that are outside and inside us. The first one could be treated as the environment of the latter one. However, so called objective reality does emerge after a reflection in so called subjective reality. Consequently, we can speak about mental reality as an environment of the world. The task of psychological ecology would be to avoid these both extreme interpretations by appealing to cultural (creative) environment. On the one hand, we belong already to our cultural environment; on the other – we change it by creating our reality of desires, objectives, imaginations etc. As a result, we face here the creative niches between two extreme interpretations of the world, as well as between collective cultural tradition and individual creative aspirations. Not by accident, creativity is one of the most important subjects of psychology (Torrance, 1966; Feist, 1998; Runco, 2004; Runco *et al.*, 2005; Kornilova, Kornilov, 2012).

Ecology of visuality could be developed in twofold ways: in the frame of psychological discourse and by appealing to the creative industries or to the media, the most of which have the visual dimension. Speaking about the visual media, the same question of *rating thinking* has been raised from Plato (1988) to P. Bourdieu (1998). For example, an expansion of visuality in the TV channels means the orientation to bigger audience measured by the ratings. Ecology of visuality would refer to creativity deficit of such mass-production. By analysing the animal channels on TV, Cottle (2004) refers to different levels of ecology. On the one hand, animal channels show the nature *as it is* and the fight for surviving in the natural environment. However, the channels have been oriented to such *attractive* topics as violence, sex and death in order to survive in the environment of the media competition. According to P. Bourdieu

(1998), we face similar content (deficit of creativity) of the TV channels under the conditions of severe competition in the media. As a result, creativity, to be precise, deficit of creativity, is the key problem in both – ecology of visuality and ecology in the media.

Conclusions

Classification of the ecological discourses exhibits the variety of scientific approaches often incommensurably concerning each other. Only area ecology deals with the nature and its protection. Since many other ecological discourses deal with cultural environment instead of natural one, they are more or less removed from this basic discourse and could be called meta-discourses. The different ecological discourses contain the common features as follows: 1) reference to certain environment; 2) suggested protection of a natural or cultural area, as well as the ways of sustainable development; 3) systematic approach; 4) the attitude that the parts of a system are fighting for their survival like the organisms in the nature; 5) dynamic approach towards both the system and its parts under the evolution; 6) conviction that the human activity should be regulated and limited.

Creative ecology could be treated both – as a branch in ecology of novelty and as a kind of meta-discourse, since every discourse requires creative thinking and creative niches for further development (more or less sustainable). For example, ontological ecology refers to the creative principles in an ontological or cosmological system. Even death could be treated as necessary moment in renewing a system. In ecology of education, the scholars speak about the creative niches while changing the roles between a teacher and a student. The recreating of education system is inseparable from the renewing of social environment. Ecology of language and its branch ecology of metaphors refer to the relationship between poetic language and creative being. Urban ecology deals with the concept of creative city by referring to the basic ecological discourse. Psychological ecology refers to the creative niches between two extreme interpretations of the world that is inseparable from human creative aspirations. Ecology of visuality, and such branches of it as ecology of the media and ecology of the creative industries, deals with creativity deficit in mass-production. Ecology of management inevitably faces the question – how to manage the creative workers. Ecology of politics raises the issue about the creative subjects (classes and the individuals) in certain social environment.

References

1. ADKINS B., FOTH M., SUMMERVILLE J., HIGGS P., 2007, Ecologies of innovation – Symbolic aspects of cross-organizational linkages in the design sector in an Australian inner-

- city area, in: *American Behavioral Scientist*, vol. 50, no 7, p. 922-934.
2. BALTRĖNAS P., BALTRĖNAITĖ E., KAČERAUSKAS T., 2015, Social environment of creativity, in: *Filosofija. Sociologija*, vol. 26, no 1, p. 46-54.
 3. BAZIUKE D., JUSCENKO N., SIAULYS A., 2014, Switching to numerical scale in marine environmental decision support systems: Fuzzy logic approach, in: *Ocean & Coastal Management*, vol. 101, no SI, p. 35-41.
 4. BOTHA C. F., 2003, Heidegger, technology and ecology, in: *South African Journal of Philosophy*, vol. 22, no 2, p. 157-172.
 5. BOURDIEU P., 1998, *On Television*, The New Press, New York.
 6. BOURDIEU P., 1993, *The Field of Cultural Production*, Polity, Cambridge.
 7. BRUNI L. E., 2015, Sustainability, cognitive technologies and the digital semiosphere, in: *International Journal of Cultural Studies*, vol. 18, no 1, p. 103-117.
 8. CETINDAMAR D., GUNSEL A., 2012, Measuring the creativity of a city: a proposal and an application, in: *European Planning Studies*, vol. 20, no 8, p. 1301-1318.
 9. COHEN-ROSENTHAL E., 2004, Making sense out of industrial ecology: a framework for analysis and action, in: *Journal of Cleaner Production*, vol. 12, no 8-10, p. 1111-1123.
 10. COKADAR H., YILMAZ G. C., 2010, Teaching ecosystems and matter cycles with creative drama activities, in: *Journal of Science Education and Technology*, vol. 19, no 1, p. 80-89.
 11. COLYVAN M., LINQUIST S., GREY W. *et al.*, 2009, Philosophical issues in ecology: Recent trends and future directions, in: *Ecology and Society*, vol. 14, no 2, p. 1-12.
 12. CARUSO C., COLORNI A., PARUCINI M., 1993, The regional Urban Solid Waste management System: A Modeling Approach, in: *European Journal of Operational Research*, vol. 70, p. 16-30.
 13. CHRISTENSEN C. B., 2014, Human ecology as philosophy, in: *Human Ecology Review*, vol. 20, no 2, p. 31-49.
 14. COTTLE S., 2004, Producing nature(s): on the changing production ecology of natural history TV, in: *Media Culture & Society*, vol. 26, no 1, p. 81-101.
 15. CRANWELL C., 2010, Embracing Thanatos-in-Eros: Evolutionary ecology and pantheism, in: *Sophia*, vol. 49, no 2, p. 271-283.
 16. DUL J., CEYLAN C., 2014, The impact of a creativity-supporting work environment on a firm's product innovation performance, in: *Journal of Product Innovation Management*, vol. 31, no 6, p. 1254-1267.
 17. FEIST G. J., 1998, A meta-analysis of personality in scientific and artistic creativity, in: *Personality and Social Psychology Review*, vol. 2, no 4, p. 290-309.
 18. FITZHUGH B., 2001, Risk and invention in human technological evolution, in: *Journal of Anthropological Archaeology*, vol. 20, no 2, p. 125-167.
 19. FLORIDA R., 2002, *The Rise of Creative Class. And how it's transforming work, leisure, community and everyday life*, Basic, New York.
 20. FLORIDA R., 2005, *Cities and Creative Class*, Routledge, New York.
 21. FLORIDA R., TINAGLI I., 2004, *Europe in the creative age*, Europe, Demos.
 22. FOWLER C. A., HODGES B. H., 2011, Dynamics and languaging: Toward an ecology of language, in: *Ecological Psychology*, vol. 23, no 3, p. 147-156.
 23. GABORA L., ROSCH E., AERTS D., 2008, Toward an ecological theory of concepts, in: *Ecological Psychology*, vol. 20, no 1, p. 84-116.
 24. GIBSON J. J., 1979, *The ecological approach to visual perception*, Houghton-Mifflin, Boston.
 25. GINO F., WILTERMUTH S.S., 2014, Evil genius? How dishonesty can lead to greater creativity, in: *Psychological Science*, vol. 25, no 4, p. 973-981.
 26. GONG X., 2013, The Modeling of China City Creativity Index and an Empirical Research, in: *20th International Annual Conference on Management Science and Engineering (ICMSE)*, p. 2289-2295.
 27. HEILIG G. K., 1997, Sustainable development – ten arguments against a biologicistic 'slow-down' philosophy of social and economic development, in *International Journal of Sustainable Development & World Ecology*, vol. 4 (1), p. 1-16.
 28. HIRONAKA A., SCHOFER E., 2000, The nation-state and the natural environment over the twentieth century, in: *American Sociological Review*, vol. 65, p. 96-116.
 29. HOWKINS J., 2009, *Creative ecologies: where thinking is a proper job*, New Brunswick and London, Transaction Publishers.
 30. HOWKINS J., 2013, *The Creative Economy: How People Make Monet from Ideas*, Penguin, London.
 31. HULL Z., 2008, The philosophical and social conditioning of sustainable development, in: *Problemy Ekorożwoju/Problems of Sustainable Development*, vol. 3, no 1, p. 27-31.
 32. IVAKHIV A., 2007, Green film criticism and its futures, in: *Foreign Literature Studies*, vol. 29, no 1, p. 46-65.
 33. JOHRI A., TEO H. J., LO J. *et al.*, 2014, Millennial engineers: Digital media and information ecology of engineering students, in:

- Computers in Human Behavior*, vol. 33, p. 286-301.
34. KAČERAUSKAS T., TAMOŠAUSKAS P., 2015, Sport as factor of creativity, in: *Filosofija. Sociologija*, vol. 26, no 1, p. 64–71.
 35. KORNILOVA T. V., KORNILOV S. A., 2012, Is it possible to create a model of creativity without psychology of creativity?, in: *Psichologičeskii žurnal*, vol. 33, no 6, p. 76-83.
 36. KULBYTĖ A., 2014, Romantizmo transformacijos postmodernizmo estetikoje: tapatumo požymiai ir ribos [The transformations of romanticism in postmodern aesthetics: The signs and limits of identity], in: *Logos*, vol. 78, p. 170-179 (in Lithuanian).
 37. LANGE B., KALANDIDES A., STOEBER B. *et al.*, 2008, Berlin's creative industries: Governing creativity?, in: *Industry and Innovation*, vol. 15, no 5, p. 531-548.
 38. LEE D. S., LEE K. C., SEO Y.W. *et al.*, 2015, An analysis of shared leadership, diversity, and team creativity in an e-learning environment, in: *Computers in Human Behavior*, vol. 42, no SI, p. 47-56.
 39. MITCHELL W. J. T., 1994, *Picture Theory*, The University of Chicago Press, Chicago.
 40. NEWELL J. P., COUSINS J.J., 2014, The boundaries of urban metabolism: Towards a political-industrial ecology, in: *Progress in Human Geography*, vol. 12, p. 1-27.
 41. PADEN R., HARMON L. K., MILLING C. R., 2013, Philosophical histories of the aesthetics of nature, in: *Environmental Ethics*, vol. 35, no 1, p. 57-77.
 42. PENNINGTON M.C., HOEKJE B.J., 2014, Framing English language teaching, in: *System*, vol. 46, p. 163-175.
 43. PETERSEN T., KLAUER B., MANSTETTEN R., 2009, The environment as a challenge for governmental responsibility – The case of the European Water Framework Directive, in: *Ecological Economics*, vol. 68, no 7, p. 2058–2065.
 44. PLATO, *Lysis* <http://www.gutenberg.org/files/1579/1579-h/1579-h.htm> (19.05.2015).
 45. PLATO, *The Laws*, Chicago, The University of Chicago Press.
 46. RUNCO M. A., 2004, Creativity, in: *Annual Review of Psychology*, vol. 55, p. 657-687.
 47. RUNCO M. A., ILLIES J. J., EISENMAN R., 2005, Creativity, originality, and appropriateness: What do explicit instructions tell us about their relationships?, in: *Journal of Creative Behavior*, vol. 39, no 2, p. 137-148.
 48. RUSBY J. C., JONES L. B., CROWLEY R. *et al.*, 2013, The child care ecology inventory: A domain-specific measure of home-based child care quality to promote social competence for school readiness, in: *Early Childhood Research Quarterly*, vol. 28, no 4, p. 947-959.
 49. SKORUPA P., 2014, Shocking contents in social and commercial advertising, in: *Creativity Studies*, vol. 7, no 2, p. 69-81.
 50. STEEN M., 2015, Upon opening the black box and finding it full: Exploring the ethics in design practices, in: *Science Technology & Human Values*, vol. 40, no 3, p. 389-420.
 51. SUNLEY P., PINCH S., REIMER S. *et al.*, 2008, Innovation in a creative production system: the case of design, in: *Journal of Economic Geography*, vol. 8, no 5, p. 675-698.
 52. TAELMAN S. E., DE MEESTER S., SCHAUBROECK T., *et al.*, 2014, Accounting for the occupation of the marine environment as a natural resource in life cycle assessment: An exergy based approach, in: *Resources Conservation and Recycling*, vol. 91, p. 1-10.
 53. TORRANCE E. P., 1966, *The Torrance Tests of Creative Thinking*, Personnel Press, Lexington, MA.
 54. TSCHAKERT P., 2012, From impacts to embodied experiences: tracing political ecology in climate change research, in: *Geografisk Tidsskrift-Danish Journal of Geography*, vol. 112, no 2, p. 144-158.
 55. VALIVONYTĖ I. M., 2013, Plagijavimas reklamoje: kūrybinio mąstymo trūkumas ar perpildytos rinkos pasekmė? [Plagiarism in advertising: Lack of the creative thinking or result of saturated market?], in: *Santalka: filosofija, komunikacija*, vol. 21, no 2, p. 128-139 (in Lithuanian).
 56. WANG Y.; FANG Y.; ZHANG J. *et al.*, 2013, Dezert-Smarandache theory for multiple targets tracking in natural environment, in: *Iet Computer Vision*, vol. 7, no 6, p. 456-466.
 57. ZHAO SH., QIN Q., ZHANG F. *et al.*, 2011, Research on using a mono-window algorithm for land surface temperature retrieval from Chinese satellite for environment and natural disaster monitoring (HJ-1B), in: *Data, Spectroscopy and Spectral Analysis*, vol. 31, no 6, p. 1552-1556.
 58. ZIMMERMAN M. E., 1993, Rethinking the Heidegger – Deep ecology relationship, in: *Environmental Ethics*, vol. 15, no 3, p. 195-224.
 59. YANG H., CHATTOPADHYAY A., ZHANG K., 2012, Unconscious creativity: When can unconscious thought outperform conscious thought?, in: *Journal of Consumer Psychology*, vol. 22, no 4, p. 573-581.

