I. CREATIVITY IN PHILOSOPHY AND IN SCIENCE

HOW PHILOSOPHY CAN HELP IN CREATIVE THINKING

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In this paper we aim to show that philosophy can be helpful in creative thinking. Although we take into account only selected philosophical concepts and rules, we will try to demonstrate that a person who has a good command over these few ideas can formulate new ideas and projects when confronted with new and demanding situations. Correspondingly, the ability to think abstractly in some specific circumstances can lead to positive and unexpected results. In this way, the mind "plasticity" that results from a philosophical education can become an engine of creativity. This article concerns people who study philosophy (formally or informally) and who in their professional lives are involved in various jobs and activities where creative thinking is needed and even required. In general, the paper is a part of philosophical heuristics.[1]

Keywords: abstract thinking, creativity, inventions, new ideas, philosophy.

Introduction

Nowadays creative thinking is widely promoted. We constantly look for new factors which refresh our thinking and make us ready to face new challenges. Various human activities, both theoretical and practical as well as those sometimes least expected, can bring with them inspiration and support (e.g. sport; see Kačerauskas, Tamošauskas 2015). Consequently, the search for new ideas and solutions should embrace an inclusive approach. We need creative thinking in many spheres of our lives along with the technical and exact sciences, social sciences, art and humanities, in addition to numerous others human activities. In the Western world, we find that the cultural and scientific achievements of the past do not appear to be sufficient for our continued

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[1] For a broader presentation of philosophical heuristics, see the article by Jutta Schickore (2014).

wellbeing. Thus, progress is often perceived as a matter of new discoveries, inventions and ideas. On the one hand, many noble institutions with massive funding and social support are dedicated to this purpose (most notably universities). On the other, we realize that real novelties are not so easily achievable. It is not only a matter of a proper organization, e.g. of the academic world or artistic circles. Although these formal settings are helpful and can be stimulating, the real engine of advancement is the human being with his original thinking and ingenuity. Only the human being can look at things in a new way and recognize that things can work differently. Only the human being can devise new tools that cater to human needs in novel and more effective ways. At any rate, everything starts with the mental capacity to see things in a new or different way. Creative thinking has its source in such an attitude.[2]

Can philosophy provide any assistance in developing and cultivating that attitude? There are two possible but opposing answers. From one point of view, it would appear that philosophy is not particularly well suited to this specific task. It is connected with a complex net of ideas and projects developed throughout the history of human thought. Yet it seems that in order to become creative we must detach precisely from that historical and cultural burden. It is argued that this liberation is what paves the way for new perceptions, new approaches, and new ideas. This theory gains further support with the realization that these days any progress is achieved within narrow fields of scientific or scholarly specializations. Philosophy deals with general ideas so it seems to proceed in the opposite direction.

From the other point of view, it looks as if philosophy may offer a unique advantage because of the hermeneutical character of its discourse. Here, new categories are formulated in a kind of dialectic carried out between the present and the past. The former brings with it new events produced by culture and science while the latter offers us a rich and multifaceted heritage. In this way, the philosophical mind is always stimulated to answer the challenges of the present by drawing upon the resources of past achievements. Nevertheless, although this discourse generally operates within a theoretical dimension, it also occurs in practical philosophy with regard to pragmatic strategies and solutions. It is here that creativity is the result of an encounter between the present and the past, or between what should be done and what has been done.

Generally speaking, philosophy anchors us in the past and its achievements insert us into a kind of cultural background. The latter is indeed a resource insofar as it represents past efforts and successes in addition to offering us a picture of what is

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[2] Of course, animals are also creative and can act creatively. Nevertheless, there is an essential difference between human and animal creativity. The latter stems from instinct, whereas the former comes from rational motives. Michael Tomasello points out in his books (2001; Tomasello *et al.* 2009) that an ability to use various tools is associated with a degree of intentionality. The human being possesses the kind of intentionality that enables him to detach from a thing given in an immediate perception and move to a sphere of thoughts, ideas and theoretical projects. What is worked out here can then be transmitted to the physical world. Animals in turn possess a much more simplistic kind of intentionality, which enables them to manipulate an immediately given environment. Human achievements can be conceptualized and taught, put under critique and modified. Animals cannot learn from each other's experience and thus their creativity cannot be enhanced. Hence, real novelty can only come from human creativity.

possible according to established models of knowledge. Of course, we can be over-whelmed by this heritage and even, in a certain sense, imprisoned by it. In this case, the achievements and ideas of the past will be construed as imposing limits on our thinking and action. But the opposite scenario is also possible. Past accomplishments and inventions can play positive and constructive roles, especially when we are con-fronted with new challenges of various kinds. These roles can be liberating – as, for example, when they help us to avoid certain errors and traps in our investigations; at the same time, they can also be inspiring, inviting us to assume pro-creative attitudes.

In this article we are going to concentrate on the latter approach to creativity, show-ing that there are some traditional philosophical concepts[3] that can play both roles. In so doing, we are closer to those metaphorically oriented theories than the scientifically oriented ones which motivate creative thinking according to a distinction introduced by Aaron Kozbelt, Ronald A. Beghetto and Mark A. Runco (2010: 22). Of course, the philosophy we reference does employ methodologically strict thinking. Even so, in many cases it is not an investigative approach typical of scientific thinking given the latter's concentration on facts and scientific methods. In contrast, philosophy deals with general and theoretical concepts but can also work out many less general notions and projects.[4] It can be applied to problems which arise outside its well-defined subject matter. For example, philosophical methods can successfully capture problem situations in techno-logy, biotechnology or business. This enables us to look at them in a different light or from new angles. Moreover, philosophy seems to be particularly well-equipped to help us "focus more on hypothetical or 'as if' modes of thinking" (Kozbelt *et al.* 2010: 22), which in turn fuel a creative approach to various problems.

Taking into account various philosophical concepts and other strategies, we do not want to claim that these are the one-and-only true tools that can describe an existing reality. Such an assertion would take us too far afield from our focus in this paper. Here, we only want to emphasize that the person who is familiar with these specific theor-etical factors is uniquely well-equipped to think creatively. Thus, our focus is on the subjective side of creativity.[5] We want to show that the mindset of such an individual

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[3]   By "traditional philosophical concepts" we mean the concepts associated with the philosophy of Plato and Aristotle and their commentators as well as with thinkers inspired by these ancient figures. The essence of the philosophy we have in mind in writing this paper is also associated with such concepts. Philosophy is for us a kind of theoretical knowledge that cannot be confirmed or rejected by the exact sciences. On the contrary, the latter contain some indispensable philosophical presuppositions. Thus understood philosophy plays a heur-istic role. We are convinced that philosophy will also provide some conceptual tools in the process of solving theoretical and practical problems. In this way, it plays an essential role in critical and creative thinking.

[4]   Ethics is a good example. Thus, general ethics is concerned with general principles for moral action, whereas applied ethics is about less general rules and imperatives. Usually one is connected with the other although in various, sometimes complex, ways.

[5]   In discussing "the subjective side of creativity" we do not refer to the subject's idiosyncrasies. We are also aware that a subject can belong to a non-human family. Nevertheless, we limit our understanding of creative subjectivity to humans and their activities. Human creativity is strictly associated with thinking and lan-guage, which is an indispensable tool in basic classifications. We are interested in what way a subject uses creative thinking, while looking for new heuristics, in solving given problems. Moreover, we are concerned with creativity considered from the first-person perspective.

can produce a creative personality. Of course, this is a possibility not a necessity. With regard to novel and creative thinking we want to emphasize the so-called context of discovery, namely how new ideas and projects are formulated. This includes highlighting the necessary presuppositions and basic conditions of creative thinking. Consequently, we will not be concerned with emotions but instead, the rational and intuitive elements. In this way, we will try to avoid the accusation of any kind of subjectivism.

To begin, being creative cannot be constituted by the above-mentioned elements. Something more is needed as an additional resource, i.e. specialist knowledge associated with a given field of research. Nevertheless, it is difficult to determine, in positive terms, how much knowledge is needed in order to be creative. At the very least, we can exclude the proposition that greater knowledge equals greater creativity. The connection between the two is complex and intricate, and we are not going to solve their interaction in this paper. Let us assume therefore that a good level of specialist knowledge is required. As concerns the creative approach, the former may be considered the matter while the latter (creative thinking) the form. Correspondingly, the philosophy-oriented personality that we will sketch in this essay is only a prerequisite of being creative, though, as we sustain, a very important and promising prerequisite.

Theoretical notions in *action*: a first approach

At first glance, theoretical concepts employed by philosophy seem detached from and alien to practical thinking. They appear to have more to do with cognition for the sake of cognition rather than with cognition for the sake of practice. But an attempt to understand them in depth often reveals the opposite. Let us take the principle of finality. It has its origins in the thought of Aristotle who pointed out that "action for an end is present in things which come to be and are by nature" (1941b: II, 8). In contemporary interpretations, there are three ways the term "end" can be understood: we can point to the end of a given action; the end of an acting agent; and the end of an action as its actual consequences (Herbut 1997a: 550). In a certain way, these distinctions form a part of very advanced philosophical discussions, especially within metaphysics. As a result, any attempt to understand the term "end" from within this context is both a complex and difficult endeavor which can distract us from the action–oriented attitude. However, these are not the only possible ways in which this term can be construed. We can, for instance, think of it as that which orders our perceptions in any given enterprise.

An example may help lend some clarity to this definition of "end". Let us assume that the inventor is someone who tends to discover something new. Evidently this desire for "something new" is that which motivates him in the course of his research. In one sense, the end here is fundamentally understood as a final outcome of his efforts. But before the final stage is achieved, the researcher has in mind a certain kind of subjective intuition that a new thing can indeed be invented (subjective end). This intuition is usually conditioned by a paradigm within which the researcher operates. In other words, the paradigm amounts to a kind of background of these basic intuitions. The inventor employs also the various experimental strategies and tools, which have their own ends (*viz*. consequences to which they usually lead). Yet these ends

are not mutually exclusive; rather, there exists of interplay between them. First, it can happen that even if the researcher is convinced that a given strategy assists him in fulfilling a personal end, the same strategy may produce other results, e.g. unintended side-effects. Second, it is also possible – at least in a number of cases – to ignore the intended ends of the tools altogether in order to obtain a result to which those tools usually do not lead. In this way, subjective ends (intended ends) can be achieved despite the ends prescribed by the tools themselves. Third, ends understood as consequences of actions are not usually strictly deterministic; often they are probabilistic. Correspondingly, it is not always possible to avoid unintended consequences.

To summarize, subjective ends are our projections, while employed tools serve as methods of verification. At the same time, consequences can be unexpected in the sense that they all cannot be foreseen. When we adopt an approach that assumes that many subjective ends should be taken into account at the very outset (at least hypothetically) then we become open to a multiplicity of results. Creativity starts from our well-grounded imagination and an attitude of openness.

Another example of a theoretical concept employed by philosophy is the principle of non-contradiction. Aristotle in his *Metaphysics* puts it in the following way: "the same attribute cannot at the same time belong and not belong to the same subject and in the same respect; or […] it is impossible for any one to believe the same thing to be and not to be" (1941a: IV, 3). This rule helps purify our thinking from mistakes concerning the same thing. Applied to new theories, it warns us against using ideas which exclude or contradict each other within the same project. Employed to new things and inventions, it prevents us from setting up functions which exclude, contradict, or attenuate each other. With regard to creative thinking, this principle helps us to design things that are integrated and coherent in and of themselves. They are to offer us something new, that is to give us a better quality of applicability and enhance our dealing with, e.g., everyday problems and difficult situations.

The pragmatic value of such a principle can be seen when we take into account the character of contemporary machines and computers, which are increasingly complex systems. Take, for example, the many different tablets and cell phones. It is very easy to be confused as to their adequate and proper usage. They are like small computers possessing a wide rage of functions. To be creative here is to design things which harmoniously join two essential features, namely a multifaceted, complex character with compatibility and coherence between these aspects. The higher the level of complexity in new machines and devices, the stronger the need to follow the principle of non-contradiction. Correspondingly, as complexity increases this becomes ever more difficult and demanding.

The ability to think abstractly along with its concomitant operations may prove indispensable here. The early 18th century idea of possible worlds may help make this clear. Formulated by Gottfried Wilhelm Leibniz, it originally concerned alternative worlds in the mind of God and today it serves as an important idea in the field of modal logic. We will limit ourselves to the theory's original meaning. Such worlds were considered "possible at least in the sense that they are logically consistent and […] complete in that they are possible totalities of creatures" (Adams 1999: 724). When we embark

on a comparison of such possible worlds with human inventions (and creativity), we actually compare macro worlds with micro worlds. Understandably, there are some important differences and incompatibilities. Nevertheless, by making comparisons and highlighting differences we can reveal some similarities. With regards to creativity in contemporary sciences and technologies, the ability to design theories and things that are logically consistent is vital. This is a kind of axiom. Furthermore, an analogy can be made between the Leibnizian notion of possible totalities of creatures and the notion of a set of constituents. New inventions – in contrast to possible worlds – are realities complete in themselves but only in a relative sense. Maintaining the essential features of the invention, their formula can be changed and improved. In practice this means that many new component parts may be constantly added, modified and replaced. The ability to work out new elements, provided that we adhere to rules of logic and compatibility, is a form of creative imagination enabled by understanding and learning.[6]

Also, the idea of possible worlds is a mind "opener" and brings with it the message that the same thing (i.e. an artifact) – while keeping in mind its essential features – can exist in various different forms. Consequently, it can be designed in multiple ways where there exist alternative compositions of the same thing.[7] In many respects, such a thing has an open formula. None of the working solutions concerning a given artifact exhausts the range of possibilities. Rather, the opposite is true: namely the implementation of the given solution usually reveals its own limits and calls for its own modification and a new version. Thus, we can devise both new ways of realizing the main features or functions of the thing, as well as new sets and additional characteristics. In this way, a relative openness in designing projects and things indeed plays the role of "stimulant" and when treated seriously may result in a novel approach to previous solutions, things and ideas.

Other interesting insights are delivered by the principle of *tertium non datur*, or the law of excluded middle. Aristotle put it this way: "there cannot be an intermediate between contradictories" (1941a: IV, 7). Or, "of opposites, contradictories admit of no middle term" (1941a: X, 7). In contemporary discussions this principle has a threefold interpretation: any being exists in its determined content or does not exist at all; any being exists or does not exist, and possesses a feature *c* or does not possess it; between being and non-being there is nothing intermediate (Herbut 1997b: 558). This principle with its contemporary developments serves as a "cleaner" of our thinking. It helps us to avoid various fallacies concerning the inner structure of a given project or thing. Looking from the other side, we can claim that the more we apply this principle, the more a given novelty is congruent as far as its parts and constituents are concerned.

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[6] This thesis can be controversial and hence it has its limits. We do not claim that every reality can be constantly changed and modified. Neither does everything have an open formula, as it is claimed next. There are some natural or ethical limits to such enterprises. But this is not the subject of this paper.

[7] But what is important here is that there is a kind of passage from one composition to the other. It is so because in the theory of possible worlds a conviction is entertained that "intuitively, one world is accessible from another if and only if the former is possible in (or from the point of view of) the latter" (Adams 1999: 724).

Nevertheless, we can entertain some doubts as to a validity of the principle in the process of searching for various novelties. It seems that at times new ideas and inventions appear in and occupy a middle ground between things known and used already. It sometimes happens that a new discovery is a collection of elements coming from various opposites. Such possibilities as an animal-human hybrid or genetically modified organisms come to mind.

To clarify this issue, we should introduce further distinctions. It seems reasonable to discriminate between various elements that can possibly come to a new composition and elements that are clearly in opposition to each other, and hence exclude each other. A researcher is naturally inclined to experiment on various elements trying to establish if they can end up within a new whole. In the same respect, those elements cannot contradict each other or – as we said already – attenuate each other because the new whole will then be unachievable. That is why the exclusion of a middle ground is vital. However, such a middle ground can take place when we consider various aspects of the same thing. For instance, something can be active in one respect and passive in the other.

Even if we consider elements that oppose each other, we should ponder several possibilities. First, the opposition can be apparent but not real, that is a deeper insight into a relation between given elements can reveal that there indeed is no opposition between them. Second, opposing elements can be complementary from a different perspective. It depends on a leading idea, that is the idea that is to gather and organize them. One idea can make some elements opposed to each other, whereas another idea can make them coherent within a structure constituted by that idea. Thus, in the case of the problem we tend to solve, the main idea we employ is really vital. The latter can lead to a configuration of various elements in a way that they cooperate with each other, at least in some aspects. Finally, we can underline a twofold role of contradiction in solving a novel situation or in inventing a new thing. At the outset, contradiction among candidates aspiring to this job is a positive sign because it stimulates thinking and research. The researcher is pressed, in a sense, to overcome the contradiction and this can put him on the verge of something novel. But gradually when we acquire a stage of new invention, any contradiction must be eliminated even at the expense of some aspects of that newness (Woleński 1996). Here the role of the principle of the excluded middle is vital.

Theoretical notions in *action*: a second approach

Thinking through the prism of analogy can be very helpful in our analyses. This is a very old philosophical term and the theory of analogy is quite complex. We are only going to stick to a general description of that. Within this philosophical attitude, we assume that the world we live in is pluralistic, that it is not a one-dimension reality, hence we cannot directly and thoroughly compare many things and objects. We can do that by employing a strategy, which enables us to perceive similarities despite essential differences. Without analogical thinking we will be imprisoned in the details and particulars, and a synthetic grasp of reality would be impossible. Thus, to formulate a complex vision and project we really need to draw on analogy.

There are various kinds of analogy. For instance, the analogy of proportionality helps us to claim, as W. Norris Clarke, S. J. puts it, that "a worm *knows*; a human being *knows*; God *knows*". However, he adds:

> "that the similarity expressed is not directly between two essences or natures as such, which in themselves are just different, but between their respective activities, what they do, as somehow truly similar, while at the same time these natures are quite different in how they exercise this activity" (2001: 46–47).

The analogy of proportionality can help us to not only perceive similarities but also dissimilarities. The latter constitute a starting point in our perception: we look for similarities because what strikes us at the beginning is a clear set of dissimilarities. Shedding some light on the latter or realizing fully what they are about can pave the surer way for perceiving the former. Moreover, a good command of this theory should result in the ability to discern what the essence of a given thing is and what the accident, the nature and the function are. As a first consequence, it should help us to introduce proper and precise distinctions. At any rate, it is a necessary starting point in any creative and innovative attitude.

The analogy of proportionality can be an engine of creative thinking in a many ways. We want to sketch here only one of them. We take as a starting point an entity that is characterized by its advanced functions. Understandably that can be the human being with his various activities and functions. Then we can realize that other things – e.g. artificial machines – can resemble this model, of course not in a literal sense. This "mirroring" can take place not only in a formal way but also in a material way. In the former approach, we can see how those machines are linked with their respective activities and functions; and consequently we can improve those relations. Within the material approach, we can undertake an attempt to translate human perfections into artificial realities via analogical thinking drawing upon possibilities delivered by contemporary sciences and technologies. The same can be done between other things: those more advanced can serve as an inspiration and models for those we want to construct. Of course, there are clear limits as to the applicability of various functions. Not everything that is entertained by the human being can be translated into artificial things. Nevertheless, the theory of analogy stimulates our imagination in this respect.

Philosophy can be helpful in fostering creative thinking because of its main feature, namely that it tends to encompass the whole. It was a very basic idea of Plato and Aristotle that philosophy should overcome particular aspects and help us to cognitively grasp the whole. Nowadays, there are two problems with such an approach, especially in the realm of exact or technical sciences. First, it seems that those sciences celebrate their triumph just because they concentrate on particular aspects. The spirit of scholarly specialization is the engine that leads to new discoveries and inventions. Thus, the approach characterized by looking at the whole can be easily considered as a distraction from this trend. Second, it seems that knowledge concerning the whole of reality is so complex that it seems almost unachievable. Many exact sciences are involved in its enquiry and we are far from a unified picture of that reality. In this paper,

we are not going to question or play down these difficulties but we want to show that the attitude directed to the whole is possible and can be complementary and inspiring.

This is definitely the case when we investigate realities that go beyond the methodology of empirical sciences. Although there are a good number of philosophers who claim that everything should be treated in the light of a naturalistic methodology, a more cautious approach seems reasonable. A good example of such an approach is given by Roger Scruton. His thesis goes as follows:

> "there is a widespread habit of declaring emergent realities to be 'nothing but' the things in which we perceive them. The human person is 'nothing but' the human animal; law is 'nothing but' relations of social power; sexual love is 'nothing but' the urge to procreation; altruism is 'nothing but' the dominant genetic strategy […]; the *Mona Lisa* is 'nothing but' a spread of pigments on a canvas; the Ninth Symphony is 'nothing but' a sequence of pitched sounds of varying timbre. And so on. Getting rid of this habit is, to my mind, the true goal of philosophy" (2014b: 39–40).

Here, Scruton does not recommend a kind of escape from particulars to generalities but he warns us against a position of reductionism. The latter can block out investigation and we can avoid it in our proceedings only when investigating particulars we keep our eyes on complex wholes. Humanistic mentality, where philosophy plays its major role, can be indispensable here because it conveys the important message that information is usually associated with its parts but meanings with the whole. And thus one cannot replace one with the other or compensate one for the other.

Aristotle was aware that general knowledge is always gained at the expense of particular knowledge. Describing one of the basic attitudes of the philosopher, he pointed out that "the wise man knows all things, as far as possible, although he has not knowledge of each of them in detail" (1941a: I, 2). We can even put it stronger: the greater the body of general knowledge, the poorer particular insights, and *vice versa*. Nevertheless, they do not exclude each other and it seems that they are rather complementary. At the first glance, we can claim that general knowledge is fueled by particular expertise and the latter would be very local and limited in its application if detached from general knowledge. But there are further and more intricate relations between each other.

Let us assume that a researcher possesses a specialist knowledge concerning his area of expertise. His main aim is to increase the body of this knowledge because such a move can be a prerequisite of discoveries he is going to make in the future. Yet at the same time, let us suppose that he is embarking on acquiring knowledge concerning other fields of inquiry or, say, general knowledge unrelated to his field. As Aristotle suggested, that general knowledge will be not so specialist as the knowledge concerning the researcher's field. But this combination can bear fruit in unexpected ways. First, it can provide the researcher with a kind of distance from his subject and in this way it can help him to remain more critical in his scientific endeavors. Second, with regard to his own research, the scientist can draw inspiration from other fields of exact sciences or from other seemingly unrelated realms. Creative imagination is indeed the fruit of the perception of the same thing coming from various angles. Moreover, the human mind can be attributed with a kind of plasticity. This means that

approaching a new thing, the mind identifies with it for the sake of its cognitive penetration. But doing that, the mind is already equipped with other ideas and insights. Thus the interplay of the new coming from the thing and the set of ideas possessed already by the mind can bear a real novelty. Usually it is a new synthesis that caters to our needs but, in the longer run, it can be a starting point for further research (it can constitute the background for further research).

Thinking through the prism of the whole can bring with it further benefits. Someone who has the mental disposition to look to the whole but spends a good deal of his time working on particulars can experience a kind of tension and discomfort. Nevertheless, it can be a constructive and creative feeling. Advancing his research on a detail, he can ask himself about the purpose of it within the whole. Further, he can inquire into the relationship between this detail and other details, namely how they are or should be linked. Thus, knowing the limits and borderlines of the particular he is working on, the researcher is more disposed to perceive the meanings and roles of other aspects. Moreover, a mature awareness of the purposes of the particulars will only be ascertained when we know the purpose(s) of the whole as such, where the details usually play the role of constituents or aspects. Being aware of the purpose of the whole, the researcher gains additional control over the purpose of the respective particular as if from on high. Consequently, he can design that particular in such a way that it is in harmony with the given whole but at the same time it can also be accommodated within another whole (a new composition, invention). Seen in this way, functionality and creativity do not exclude each other but can be complementary.

The outlook on the whole yields a general knowledge and this is usually the terrain in which less general ideas can appear. The creative mind is aware that general knowledge has the capacity to stimulate a very broad set of particular ideas prompted by a need for practical solutions and innovations. Particular ideas and applications very rarely exhaust the potential of the former. They constitute, in a sense, the intersection between what the knowledge already had and the demands presented by a given context and situation. Thus sticking to the general view, even if we are chiefly interested in particular aspects, is very important.

Conclusions

Philosophy gives us a specific approach to the world. It informs the philosopher's investigation concerning the theoretical aspects and possibilities of the object of his inquiry. This mode of investigation has its advantages and can be considered as the background of creativity. But when we want to use philosophy for practical purposes, arising here and now, we need to enlarge this approach. As Aristotle put it: "a man err if he knows the major premise and not the minor, which is the position when our knowledge is merely general" (1949: Bk. I, ch. 21). Dealing with practical things we must complement and specify general knowledge. This can be done by taking into account the context determined by specific needs and expectations. We can even claim that the practical demands put in front of a person with a philosophy-oriented mind can stimulate her creativity, thus making use of theory for the sake of innovative

practice. We do not want to claim that all such persons put in similar situations will become original inventors. Nevertheless, they are in a sense prepared to do that, even though, as it may happen, they do not, at first, realize it.

In general, the essential factors leading to creative results are these: a good command of general concepts and rules, which are usually acquired via philosophical education; a knowledge concerning the specific field of research; an intuition of novelty; an ability to make a synthesis of things and in this way to work out new compositions. With regard to the latter, we can point out that novelty stems from the joining of seemingly unrelated things or of old ones with new ones. Thus creativity never starts from nothing. The researcher must draw on things existing so far but it is a matter of his ingenuity whether he can propose new creations and solutions.

In conclusion, many sciences and the humanities can lead to the formation of a creative personality. Interestingly this has been shown by Scruton, who pointed to the study of Latin and Greek, algebra and logic, and even of astrophysics.[8] Pursued for their own sake, these specialist branches of knowledge can yield unexpected results when a human subject is confronted with sudden situations in demanding circumstances. This is even truer when we think about philosophy and its role in the formation of the human mind. Philosophy offers a complex apparatus of general notions and methods, which can be a starting point for a multitude of specific solutions and novelties. It can do thus because it takes us beyond the given data to a set of presuppositions, on the one hand, and to new fields of possible applications, on the other. Philosophy helps us to look at specific things from a distance and in this way it can enormously empower the researcher in his pursuits. Thus, further inquiry into the philosophical foundations of creative thinking presents itself as both attractive and promising.

References

Adams, R. M. 1999. Possible Worlds, in Audi, R. (General Ed.). *The Cambridge Dictionary of Philosophy*. New York: Cambridge University Press, 724–725.

Aristotle, 1941a. Metaphysics, in McKeon, R. (Ed.). *The Basic Works of Aristotle*. New York: Random House, 689–934.

Aristotle, 1941b. Physics, in McKeon, R. (Ed.). *The Basic Works of Aristotle*. New York: Random House, 218–397.

Aristotle, 1949. Prior Analytics, in Ross, W. D. (Ed.). *Prior and Posterior Analytics*. Oxford: Clarendon Press, 105–180.

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[8] Scruton puts it this way: "Nobody would have guessed that ten years of Latin and Greek was exactly the preparation required by those British civil servants, as they travelled around the globe to administer a multicultural empire; nobody would have foreseen that the abstruse workings of Boole's algebra and Frege's logic would lead to the era of digital technology; nobody, least of all Rev. Thomas Bayes, had any idea of what Bayes' theorem in the calculus of probability would mean for our understanding of statistics. All such knowledge arises because people pursue it for its own sake, in the context of institutions that are maintained by our curiosity and not by our goals. [...]. Astrophysics needs a lot of funding, and has produced wonderful and awe-inspiring results. Maybe it will solve the problem of climate change. But so far it has proved entirely useless, and is indeed a model illustration of the use of useless things" (2014a: 125).

Herbut, J. 1997a. Zasada celowości, in Herbut, L. (Ed.). *Leksykon filozofii klasycznej.* Lublin: Towarzystwo Naukowe KUL, 550–551.

Herbut, J. 1997b. Zasada wyłączonego środka, in *Leksykon filozofii klasycznej*, Lublin: Towarzystwo Naukowe KUL, 558–559.

Kačerauskas, T.; Tamošauskas, P. 2015. Sport as Factor of Creativity, *Filosofija. Sociologija* 26(1): 64–71.

Kozbelt, A.; Beghetto, R. A.; Runco, M. A. 2010. Theories of Creativity, in Kaufman, J. C.; Sternberg, R. J. (Eds). *The Cambridge Handbook of Creativity.* New York: Cambridge University Press, 20–47. http://dx.doi.org/10.1017/CBO9780511763205.004

Norris Clarke, S. J. W. 2001. *The One and the Many: A Contemporary Thomistic Metaphysics.* Notre Dame, IN: University of Notre Dame Press.

Schickore, J. 2014. Scientific Discovery, *Stanford Encyclopedia of Philosophy* [online], [cited 2 September 2016]. Available from Internet: http://plato.stanford.edu/entries/scientific-discovery

Scruton, R. 2014a. *How to Be a Conservative.* London, New Delhi, New York, Sydney: Bloomsbury.

Scruton, R. 2014b. *The Soul of the World.* Princeton and Oxford: Princeton University Press. http://dx.doi.org/10.1515/9781400850006

Tomasello, M. 2001. *The Cultural Origins of Human Cognition.* Cambridge, MA: Harvard University Press.

Tomasello, M.; Dweck, C.; Silk, J.; Skyrms, B.; Spelke, E. 2009. *Why We Cooperate.* Series: Boston Review. Cambridge, MA: The MIT Press.

Woleński, J. 1996. *W stronę logiki.* Kraków: Aureus.

KUO FILOSOFIJA GALI BŪTI NAUDINGA KŪRYBINIAM MĄSTYMUI

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Santrauka

Straipsnyje siekiama parodyti, kad filosofija gali pasitarnauti kūrybiniam mąstymui. Nors remiamasi tik tam tikrais pasirinktais filosofiniais konceptais ir taisyklėmis, stengiamasi įrodyti, kad asmuo, patekęs į jam nepažintas ir sudėtingas situacijas bei gerai įvaldęs šias idėjas, gali generuoti naujas ir kurti naujus projektus. Atitinkamai gebėjimas abstrakčiai mąstyti tam tikromis ypatingomis aplinkybėmis gali nuvesti pozityvių ir nenumatytų rezultatų link. Taip mąstymo „plastiškumas", kurį formuoja filosofijos studijos ir įgytas išsilavinimas, gali tapti kūrybingumo varikliu. Šiame straipsnyje gilinamasi į žmones, kurie studijuoja filosofiją (oficialiai ar neoficialiai) ir kurie savo profesiniame gyvenime yra įsitraukę į įvairias darbo bei veiklos rūšis, kuriose kūrybinis mąstymas yra reikalingas ir netgi būtinas. Šis straipsnis – tai filosofinės euristikos dalis.

Reikšminiai žodžiai: abstraktus mąstymas, kūrybingumas, išradimai, naujos idėjos, filosofija.