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I. KANT AND C.G. JUNG ON THE PROSPECTS OF SCIENTIFIC PSYCHOLOGY

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INTRODUCTION

As some researchers note (Wilber, 2000, p. viii), one of the most important stages in the formation of scientific psychology is the publication of G.T. Fechner's *Elemente der Psychophysik* (Fechner, 1860). The revolutionary character of Fechner's ideas consisted in the fact that it was the first attempt to apply mathematical methods to examine such a complex and subtle matter as the human soul. In this way it was shown that *a psyche* can be an object of exact sciences, which methods formerly seemed to be suitable only for the studying of natural objects. In connection with this discovery I recall Kant's words², that "in any special doctrine of nature there can be only as much *proper* science as there is *mathematics* therein" (MAN, 04: 470). Immediately afterward I recall the following text in which Kant criticize even a possibility of a scientific empirical or experimental study of the soul (MAN, 04: 470-472). Here it should be noted that Kant's objections have not any instrumental or historical character, as if someday through the improvement of measurement methods psychology could become a 'proper' science. Instead, these objections have a fundamental nature. If so, how was it possible that Fechner and other generations of theorists and practicing scientists overcame Kant's methodological restrictions? To answer this question, it would be fruitful to consider some ideas of C. G. Jung who, despite his own achievements in scientific psychology, shared Kant's views on the issue, although he used somewhat different arguments.

The issue concerning the scientific status of psychology is extremely complex. That is why some common remarks are strongly required.

Firstly, there is a difficulty of determining the criteria regarding the scientific nature for one or another sphere of intellectual activity, particularly psychology. The fact is that scientific criteria have crucially changed since XVIII century. That is why criteria, which were adequate in Kant's time, are inadequate for Jung, not to mention modern science. That is why it may be suspected that the historical-comparative method, which I use here, is inapplicable because of the impossibility to find a common base for comparing Kant's and Jung's views on the scientific status of psychology. But the suspicions are groundless. There is the criterion of *proper* science, common to Kant and Jung, which they applied to clarify the scientific status of psychology. This criterion consists in the applicability of mathematical quantitative methods to the object of one or another science. It is still subject to doubt, whether this criterion is applicable in psychology. One of the main issues of the discussion concerns the objective unit of measurement in psychology (like unit of force in physics), which would help to formalize a description of every investigated phenomenon.

Secondly, the issue concerning the scientific status of psychology in some respect is directly connected with the issue of psychophysical parallelism³. Indeed, as long as scientists do not find out, how exactly body and soul interact, we can believe that it is legitimate to examine the soul through some body signals, but it would remain just a kind of belief. Hence such methods as the pulse curve, the respiration curve, and the psycho-galvanic phenomenon, which have an accurate mathematical apparatus, do nothing to approximate psychology to a proper science. Also, Jung noted that polygraph data cannot be considered as a source of information about *psychic* life, because polygraph detects *bodily* states only (Jung, 1975, pp. 13-14).

It should be noted that the issue of psychophysical parallelism arose a long time ago. For example, the Wolffian follower, F.Ch. Baumeister (1789, pp. 296-298, 310-319) in his lectures on Metaphysics expressed very pessimistic views on the historical and methodological prospects of decision the question how exactly soul and body are connected with. The same was relevant for Platner (1772, pp. ix-xii). According to T. Sturm, Kant also shared such pessimistic view, at least we can find that perspective in his Lectures on anthropology of the first half of the 1770s (Sturm, 2008, p. 499).

Since the second half of the 19th century this topic became very popular among philosophers and psychologists of different schools. L. Busse (1913/2012, pp. 67-118) and other researchers (Hartmann, 1901, pp. 435-444) described this situation scrupulously. Unfortunately, in this article I cannot consider the issue in detail, because it goes beyond my purpose. The only thing I want to point out is that Jung many times attempted to examine the issue of psychophysical parallelism. In the beginning he tried to avoid strict judgments and exact answers (Jung, 1975, p. 17), but later on – with the ‘invention’ of the concepts of *synchronicity* and *psychoid factor* – his judgments became more confident and concrete.

Thirdly, Kant's objections against the possibility of scientific psychology have a fundamental, not instrumental, character. Their core lies in the radical inapplicability of mathematical methods to the study of the soul. Paradoxically enough, Jung agrees with this statement. Despite he was a practicing psychiatrist as well as an experimental psychologist,

having made his major discoveries on the basis of empirical material, Jung insisted on the impossibility of using mathematical *quantitative* methods in psychology (especially in studying the unconscious⁴) and considered that psychology could not replicate the epistemology of physics. Thereby he shares Kant's views on the prospects of scientific psychology. In particular Jung writes with regret that "the tragic thing is that psychology has no self-consistent mathematics at its disposal, but only a calculus of subjective prejudices" (Jung, 1975, p. 216). Furthermore, Jung underlines another fundamental obstacle for psychology to become a strict science, i.e., the coincidence of subject and object in psychological studies. He wittily notices:

The psyche ... observes itself and can only translate the psychic back into the psychic. Were physics in this position, it could do nothing except leave the physical process to its own devices, because in that way it would be most plainly itself. (Jung, 1975, p. 216-217)

Below I will predominantly focus on issues, pertaining to the third remark.

KANT ON THE PROSPECTS OF SCIENTIFIC PSYCHOLOGY

Many attempts to explicate Kant's views on psychology have been undertaken since the 19th century. One of the first fundamental researches on the topic can be found in J.B. Meyer's *Kants Psychologie* (Meyer, 1870) and E.F. Buchner's *Study of Kant's Psychology with Reference to the Critical Philosophy* (Buchner, 1897). Today the interest in Kant's psychology remains strong. For example, his attitude to rational psychology was thoroughly examined by K. Ameriks (2000) and C.W. Dyck (2014). Kant's views on empirical and transcendental psychology were considered in various works by G. Hatfield (1992), P. Kitcher (1990), and C.M. Schmidt (2008). Unsurprisingly, there are specific works devoted to the issue of the scientific status of psychology in Kant's writings. In this respect one should mention several articles by T. Mischel (1967), T. Sturm (2001, 2008), R.A. Makkreel (2001), A.C. Nayak and E. Sotnak (1995), and V.V. Vasilyev (2010). Relying on these materials and directly on Kant's works, I will try to summarize the main objections against the possibility of scientific psychology, which subsequently were reflected in Jung's ideas. Before that, two preliminary points should be highlighted.

Firstly, when Kant writes about the impossibility of psychology as a 'proper' science, he means not *rational*, but *empirical* psychology. The difference is a crucial one. For, according to Kant, *rational* psychology takes nothing from the experience, but merely the fact that human beings have a soul. Everything else is a metaphysical cognition of the soul (Kant, 1821, p. 197). Empirical psychology, in contrast, shows how cognitive faculties are used, not how they should be used (Vasil'ev, 2010, p. 337)⁵. It stands on the foundation of experience, which absolutely cannot give an apodictic reliability, while rational psychology in its 'natural-scientific' function sets apodictic principles for empirical psychology (Vasil'ev, 2010, p. 336). That is why Hatfield underlines that scientific rational psychology is possible (Hatfield, 1992, pp. 218-219). Here are his arguments:

Kant admits that there are only a few principles with the required generality, but he is able to name two: “the proposition that ‘substance is permanent’, and that ‘every event is determined by a cause according to constant laws’.... Although Kant does not go on to give examples of these principles as applied to inner sense, presumably the presence of the “I” as the ground of the empirical unity of the self – not as simple, spiritual being, but merely as a permanent substance in time – is an example of the first principle, and the law ... of association of representations is an example of the second principle. In any event, it is evident that Kant is committed to the view that the representations of inner sense, no less than the objects of outer sense, are subjects to universal natural laws. (Hatfield, 1992, p. 219)

Under the term ‘empirical psychology’ Kant, according to Vasil’ev, conceives two different disciplines: the doctrine of causal connectivity of inner sense phenomena and the descriptive doctrine of the general forms of inner sense, i.e. the faculties of soul. In this respect, Kant, speaking about the specificity of empirical psychology, usually refers to the first doctrine, but factually deals with the second one (Vasil’ev, 2010, p. 338)⁶. Such ‘double-entry bookkeeping’ somehow complicates the reconstruction of Kant’s genuine point of view.

Secondly, when Kant discusses the impossibility of *scientific* psychology, he means the *proper science* or *science in the strict sense of the word* (eigentliche Wissenschaft) (MAN, 04: 468), i.e. science, whose certainty is *apodictic*. The last one is provided by the presence of a *pure* element, which contains *a priori* principles (MAN, 04: 468-469). On the other hand, Kant notes that “cognition that can contain mere empirical certainty is only *knowledge* improperly so-called” (MAN, 04: 468).

So, maybe we should stop considering this topic, because the mere name of this science, ‘*empirical psychology*’, brings us to an analytical truth that such science like a *proper science* is impossible, according to Kant’s definition. But even Kant writes that there are many different types of sciences, including empirical sciences. By the way, ten years before the *Metaphysical Foundations of Natural Science*, Kant maintained in the *Foreword* to his lectures on psychology that psychology is the ‘physiology of inner sense or reasoning beings’ (Kant, 1821, p. 130). However, as we know, physiology is quite a proper science even through the prism of Kant’s strict criteria of scientific knowledge, e.g. criterion of systematicity (MAN, 04: 468). Therefore, is it possible that empirical psychology has a chance to be a science in Kant’s system? To answer this question an analysis of Kant’s fundamental objections is required.

Kant’s objections against even the possibility of scientific psychology may be reduced to two moments. The first is the problem of the coincidence between subject and object of cognition in psychology. The second one is the inapplicability of mathematical methods to *the inner sense*⁷ phenomena.

Regarding the first objection, Kant unambiguously asserts that all attempts made by any reasoning being to study itself as well as to study other reasoning being, are doomed to failure, for the observation distorts and transforms the state of the observed subject (Kant 1903, p. 471). There is another one obstacle, closely connected with the nature of the subject itself. Hatfield shows that, according to Kant, “although the ‘I’ is the *logical* subject of all our thoughts, it cannot be regarded as a substance because it cannot be given in intuition, the pure

category of substance can be properly applied only to objects that can be given in experience, that is, to objects of possible experience (A 349-50)” (Hatfield, 1992, p. 203). But if there is no experience, then there is no possible science.

With the second of Kant’s objection the situation is more entangled. On reading the *Metaphysical Foundations of Natural Science* it seems that, indeed, empirical psychology as a ‘proper’ science is impossible. Furthermore, it is impossible even in a status of a *systematic art* or *empirical doctrine*, such as the ‘non-science’ called chemistry (MAN, 04: 470-471). By the way, Kant considers more likely for chemistry to become a ‘proper’ science in the future, than for psychology.

So, what are Kant’s arguments? As we already know, the first is that mathematics is inapplicable to inner sense phenomena and their laws (MAN, 04: 471). Why? Because, as we remember, the form of inner sense is *time*, which has only one dimension, and time is indivisible, unlike 3D spatial objects, for example, apples, which are obviously separated from each other and easily counted.

The second is that “the manifold of inner observation can be separated only by mere division in thought, and cannot then be held separate and recombined at will” (MAN, 04: 471). That is why we cannot use such an operation as systematical analysis in psychology (MAN, 04: 471), primarily because of the indivisibility of time.

Summarizing all objections Kant concludes:

Therefore, the empirical doctrine of the soul can never become anything more than an historical doctrine of nature, and, as such, a natural doctrine of inner sense which is as systematic as possible, that is, a natural description of the soul, but never a science of the soul, nor even, indeed, an experimental psychological doctrine. This is also the reason for our having used, in accordance with common custom, the general title of natural science for this work, which actually contains the principles of the doctrine of body, for only to it does this title belong in the proper sense, and so no ambiguity is thereby produced. (MAN, 04: 471)

Analyzing all Kant’s arguments, Buchner underlines⁸ that “Kant has always stood the great champion of the valuelessness of introspection and nullity of exact methods in their application to the inner sense” (Buchner, 1897, p. 49). Makkreel and Sturm agree with him. The first writes that “in the Friedländer anthropology lectures of 1775-76 we see Kant beginning to note that self-observation is much more difficult than the observation of things outside us: ‘Self-observation is difficult, unnatural, can lead to revision and must not last long’ (25:478)” (Makkreel, 2001, p. 186). Sturm, in his turn, notices that Kant “from at least the 1780s ... advances a methodological claim against introspection as the primary method of knowing the human mind” (Sturm, 2001, p. 174). Instead of introspection Kant offers to focus on human’s behavior, which can be given for outer observation. As A. Brook underlines, “Kant’s rejection of introspection and turn to behavior have a very contemporary feel to them” (Brook, 2014, p. 64).

In addition, as Vasil’ev mentions, an analytical empirical psychology, i.e. the descriptive doctrine of the general forms of inner sense, gives the material for all divisions of transcendental

philosophy and plays the role of a fundamental science in Kant's system (Vasil'ev, 2010, p. 334). Kant, probably, to some extent applies an unjust treatment to empirical psychology and, consequently, defends that for psychology to become a science it must pass through 'the eye of a needle'. More specifically, Kant writes that mathematics is inapplicable to the inner sense, with one single exception, i.e. application of the *law of continuity* to the flux of inner sense. However, Kant adds that this "would be an extension of cognition standing to that which mathematics provides for the doctrine of body approximately as the doctrine of the properties of the straight line stands to the whole of geometry" (MAN, 04: 471). This notice has an important consequence. Vasil'ev writes that in the *Critique of Pure Reason* the law of continuity is closely connected with the *principles of pure understanding* and consequently this law is applicable to the inner sense. It entails that a priori cognition of the soul as a phenomenon is possible (Vasil'ev, 2010, p. 336). Otherwise, the categories would have no general validity. Hence, "all a priori concepts of the understanding, with possible exception of Substance and Community, should be applicable to the phenomena of the inner sense" (Vasil'ev, 2010, p. 336).

It turns out that even empirical psychology may hypothetically have its own pure part, which is based on usage of the law of continuity to phenomena of the inner sense, and thus may possess some mathematical apparatus. However, an application of exact mathematical methods to the inner sense phenomena does not guarantee resolving the problem of inseparability of the manifold of inner observation.

Some indications that, in the last analysis, there is no definitive answer to the question of the possibility of scientific psychology can be found in other Kant's works. Thus, for instance, in the *Preface* to his *Lectures on Metaphysics* Kant writes on the nature of 'I' that "I can be taken in a twofold sense: *I as human being*, and *I as intelligence*. I, *as a human being*, am an object of *inner* and *outer* sense. I *as intelligence* am an object of *inner sense only*" (Kant, 1821, p. 131). Kant repeats this idea almost verbatim a few times in the chapter on *Rational psychology* (Kant, 1821, pp. 200-201). Furthermore, Kant asserts that "the soul is ... not merely thinking substance, but rather constitutes a unity insofar as it is connected with the body" (Kant, 1821, p. 131). The properties of this connection are defined by principle: "alterations of the body are at the same time alterations of the soul, and alterations of the soul are at the same time alterations of the body" (Kant, 1821, p. 189). Thus a way towards psychology as 'proper' science can be paved through the cognition of physiological processes, something that modern neurophysiologists try to undertake.

Maybe, there were some other possibilities for empirical psychology to become a 'proper' science, upon which Kant meditated in 1780s. As rightly mentions Sturm, "in a letter to Christian Gottfried Schütz, written in September 1785, Kant promises that the *Metaphysical Foundations* will treat the metaphysical foundations of the 'doctrine of the soul' (Seelenlehre) in addition to that of matter (10: 406).... It is, therefore, clear that Kant changed his mind with regard to the scientific status of empirical psychology and that he did so between September 1785 and the appearance of the *Metaphysical Foundations* in 1786" (Sturm, 2001, pp. 164-165). Sturm notes that the fact "that Kant changed his mind so late and so suddenly should

make one cautious with regard to the question of how convinced he was by his own arguments and, moreover, how strong an impossibility claim he really wished to make” (Sturm, 2001, p. 165).

It should be noted, that later on Kant did not change his views on the connection of the body with the soul. For example, in the letter to S.T. Soemmerring (10 Aug 1775) *On the Organ of the Soul* he writes that the study of the soul should be undertaken by two faculties: the medical faculty and the philosophical faculty, because, on the one hand, it possesses a sensory receptivity, and, on the other hand, it possesses a faculty of motion (Br, 12: 31). But the agreement between the medical and philosophical faculties on the definition of *a seat of the soul* is impossible, and it would be better not deal with this issue¹⁰, “since the concept of a seat of the soul requires *local presence*, which would ascribe to the thing that is only an object of the inner sense, and insofar only determinable according to temporal conditions, a spatial relation, thereby generating a contradiction” (Br, 12: pp. 31-32).

If so, how can we answer the question of the relationship between body and soul, if we cannot even define a point for their connection, or an organ where the soul is present, which would be available to be studied through scientific methods? It seems that there is no answer to this question. That is why there will never be any agreement between the medical and philosophical faculties, not only on the location of the soul, but also on the fundamental properties of the interaction between body and soul. Therefore, I conclude that in his later works Kant prefers to avoid not only the issue of the ‘organ’ of the soul, but also the issue of psychophysical parallelism in general.

Kant’s reflections on the organ of the soul are interesting, showing how clearly Kant’s evasiveness emerges over time. In one of his footnotes he strictly distinguishes, what we can explore rationally and systematically, and what we should avoid. To illustrate it Kant allocates two different meanings to the concept of ‘soul’ or ‘mind’ (Gemüt)¹¹: “By *mind* one means only the *faculty* of combining the given representations and effectuating the unity of empirical apperception (*animus*), not yet substance (*anima*) according to its nature, which is entirely distinct from that matter” (Br, 12: 32). Thus, it turns out that the doctrine of *animus* was developed by Kant in the *Critique of Pure Reason*, while the issue of *anima* never extended beyond the frames of his lectures on psychology. At least it seems to be so.

However, concerning the issue of application of the quantitative methods in psychology, we should consider another of Kant’s works, in which about a hundred years before Fechner’s *Elemente der Psychophysik* he describes such mechanism as the *repression* of one content of the psyche by another to an unconscious area¹². I mean his *Versuch den Begriff der negativen Größen in die Weltweisheit einzuführen* (1763). In this work Kant considers a phenomenon of forgetting through the prism of a conservation law (NG, 02: 194-197) that allows us to conceive not a simple disappearing or *coming-away* of some contents of consciousness, when they are fading because of the influence of other more bright and vital contents, but rather a negative emergence or negative *coming-to-be* by analogy with the concept of negative magnitudes in mathematics (NG, 02: 190). That is why, Kant says, we can remember and recall contents of our psyche, which we are not holding in our consciousness at every moment of our life.

Thus, I cannot confidently assert that Kant possessed a firm position on the issue concerning the possibility of application of mathematical methods in psychology and, consequently, the possibility of a scientific empirical psychology (unlike rational psychology, which seems to be a ‘proper’ science, based on a priori principles). For example, in the *Essay on the maladies of the head* (1764) and in the *Dreams of a Spirit-Seer Elucidated by the Dreams of Metaphysics* (1766) Kant appears as an adherent to the physiological determinism of the psychic processes, which is consistent with the scientific worldview. Later, in the *Metaphysical Foundations of Natural Science* (1786) he becomes strictly against even a possibility of empirical psychology as a ‘proper’ science. At last, in his reflections on the organ of the soul (1795) Kant avoids the issue on the interaction between the body and the soul at least from a physiological or natural-scientific point of view.

As surprising as it may be, it is true that many directions, which Kant pointed as ‘dead ends’, led to revolutionary discoveries in different realms. This happened with an ‘improper’ science called chemistry, which D.I. Mendeleev provided with a priori principles leading to the construction of the system of chemical elements, his famous periodic table. The same happened with logic, which was ‘condemned’ by Kant to eternal stagnation. So, is it possible that psychology had the same lucky fate? To answer this question, let’s turn to Jung’s ideas.

JUNG ON THE PROSPECTS OF SCIENTIFIC PSYCHOLOGY

On the relation between Kant – a champion in the study of conscious processes – and the philosophical and psychological theories on the unconscious two collective monographs have been written in the recent past (Nicholls, A., Liebscher, M., 2010; Giordanetti P., Pozzo R., Sgarbi M., 2012). After reading these monographs, it becomes obvious that “with the possible exception of Leibniz, Immanuel Kant arguably determined the way in which unconscious phenomena were understood in nineteenth-century German thought more than any other philosopher of the eighteenth century” (Nicholls, A., Liebscher, M., 2010 p. 9).

I should add that Kant and Leibniz in general determined the way in which unconscious phenomena were understood not only in the 19th century in Germany, but also in some respect in the 20th century all over the world. This assertion is based on the fact that Jung was deeply influenced by Kant’s philosophy¹³. I note briefly that Kant and Jung had in common their apriorism, which gave rise to Jung’s concept of the archetypes of collective unconscious – a priori conditions of any psychic experience. Also both of them shared the methodological presupposition, according to which a clear distinction between constructive and regulative usage of notions and ideas is strongly required. In addition, Kant and Jung inclined to avoid definite assertions, when they dealt with the reflective power of judgment. Furthermore, both of them were against innatism. There were many other features common to Kant and Jung. One of them was the negation of the possibility of scientific psychology. Although Kant’s and Jung’s arguments were somewhat different (mostly because of the sharp differences in their scientific and cultural contexts), the general features of their arguments were quite similar.

When Jung writes on the impossibility of psychology as a ‘proper’ strict science, he allocates the same fundamental difficulties as Kant. The first one is the coincidence of subject and object, and the second consists in the impossibility of using mathematical quantitative methods to study the psyche. Some of Jung’s arguments were presented above. They are very characteristic for Jung, and we can find them in many places of his works. I will show another few examples below.

On the first difficulty Jung writes that “there is no medium for psychology to reflect itself in: it can only portray itself in itself, and describe itself” (Jung, 1975, p. 217). That is why Jung is forced to determine psychology as “the coming to consciousness of the psychic process, but it is not, in the deeper sense, an explanation of this process, for no explanation of the psychic can be anything other than the living process of the psyche itself. Psychology is doomed to cancel itself out as a science and therein precisely it reaches its scientific goal” (Jung, 1975, p. 223).

In this fragment Jung’s typical position is expressed. According to him, psychology is not an empty abstraction, or a school discipline, or an exact science indifferent to its subject, but rather it is *the goal, the way and the essence* of the psychic process. The last sentence from the citation above, at first sight, looks like a Buddhist kōan or one of Heidegger’s misty assertions. Actually, Jung discerns the goal of psychology as a science in revelation of the entity of psychic process, but this revelation may be achieved only within the psychic process, to which nothing is external. The final or ultimate goal of this process is *the individuation* – a special stage of one’s psyche development, in which a constructive integration of conscious and unconscious contents of the psyche occurs (Jung, 1975, p. 223).

Following Kant’s anthropological revolution and his concept of inner sense, Jung writes that psychic reality – *esse in anima* – is “the only form of being we can experience directly. We can distinguish no form of being that is not psychic in the first place. All other realities are derived from and indirectly revealed by it” (Jung, 1992, p. 60). In other work he adds that even “mathematical thinking is also a psychic function” (Jung, 1975, p. 217).

Developing Kant’s argument that in psyche’s cognition the observation distorts and transforms the state of the observed subject, Jung extends this argument also to the material world. He writes that “the psyche is the world’s pivot: not only is it the one great condition for the existence of a world at all, it is also an intervention in the existing natural order, and no one can say with certainty where this intervention will finally end” (Jung, 1975, p. 217).

Also, Jung insisted on the necessity of creating a new model of being, which would take into account a great scale and degree of intervention of the psychic factor into the fiber of everything that exists. This model should consider “the uncontrollable effects the observer has upon the system observed, the result being that reality forfeits something of its objective character and that a subjective element attaches to the physicist’s picture of the world” (Jung, 1975, p. 229).

By the way, Jung’s ideas that psyche influences matter and that there is not only one ‘standard’ causal type of relationships between events, but also an acasual (synchronistic),

trans-temporal and trans-spatial, type of relationships, provides a convergent horizon between analytical psychology and quantum physics. This fact was examined by W. Pauli's and P. Jordan's works (Jung, 1980, p. 473).

As for the objection that mathematical methods of measurement are inapplicable to the cognition of psychic processes, Jung is not less categorical than Kant. First of all, such bold position is explained by the specificity of the unconscious. Particularly, Jung underlines that a psychological theory cannot "be formulated mathematically, because we have no measuring rod with which to measure psychic quantities. We have to rely solely upon qualities, that is, upon perceptible phenomena. Consequently psychology is incapacitated from making any valid statement about unconscious states, or to put it another way, there is no hope that the validity of any statement about unconscious states or processes will ever be verified scientifically" (Jung, 1975, p. 214).

Therein lies the main difference between physics and psychology, since while "physics determines quantities and their relation to one another; psychology determines qualities without being able to measure quantities" (Jung, 1975, p. 232). At the same time, Jung focuses on the fact that regardless this fundamental difference and other difficulties, physicists and psychologists tend to converge in their ideas (Jung, 1975, p. 232). If so, has Jung considered somewhat possible for psychology to become a 'proper' science, as Kant did?

Jung writes that in psychology a precise measuring of the quantities is replaced by an approximate measuring of the degree of intensity of psychic processes. For this, unlike physicists, psychologists use the function of feeling or valuation (Jung, 1975, p. 234). In order for psychology to become a 'proper' science, Jung maintains, following the Russian philosopher and psychologist N. Grot (1898, p. 266), that we should consider the psyche in its dynamics and thereby be able to apply *the energy formula* to the cognition of psyche (Jung, 1975, p. 234). Only then would some quantitative aspect of the psyche become accessible for research. Nevertheless, the main difficulty remains: it is impossible to break through the boundaries of the psychic process and convert its content into a form, convenient for exploration.

Regarding the possibility of psychology becoming a strict science, it should be noted that years of research and observation led Jung to the awareness that psyche is not chaos, but an *objective* reality, which can be researched by the means of natural sciences (Jung, 1975, p. 233). Moreover, in one of his articles he insists that psychology is not a kind of worldview, but a science (Jung, 1975, p. 376). However, it is necessary to clarify that in this context analytical psychology is presented as a science in order to avoid the merely spiritual stance of those who perceived psychology as a way of self-improvement in an excessively dogmatic way. Jung ironically notes that "there are many people today who think they can smell a *Weltanschauung* in analytical psychology. I wish I were one of them, for then I should be spared the pains of investigation and doubt, and could tell you clearly and simply the way that leads to Paradise" (Jung, 1975, pp. 376-377).

But there is another moment that explicitly and obviously indicates the possibility of scientific psychology in Jung's doctrine. It is connected with an idea, according to which spirit

and matter interact closely between each other. A similar idea can be found in Kant's lectures on psychology. However, Jung goes much further than Kant. In his late works Jung formulated the concept or doctrine of *unus mundus* (Jung, 1977, pp. 533-543). The general meaning of this concept was borrowed from alchemists and can be reduced to the postulate, according to which physical and psychic processes obeyed one and the same principles, because these processes take place in the initially united Universe, where separation between the physical and psychic is most likely the result of our imperfect perception. The phenomenon of *acausal connection* between contents of the psyche and events of the objective reality, which Jung calls *synchronicity*, relies upon the fact that the psychic element can manifest itself as physical and vice versa.

Of course, critics may say that the necessity of introducing such a misty principle as synchronicity may harm psychology as a science. But we should remember that the soul is not a material point, moving uniformly in a straight line in vacuum. In this sense, the requirements for psychology to be a science must differ from those presupposed, for instance, by physics.

I try to assume that Jung did not see any hard problem in the fact that cognition of the psyche is different from cognition of the material world, because psychology can satisfy a crucial methodological principle, such as *comprehension* or *understanding*. Here Jung (at least he seems to think so) turns to Kant's definition of 'comprehension', which means "to cognize a thing to the extent which is sufficient for our purpose" (Jung, 1982, p. 181).

But as we already know, psychology is the way of revealing that psyche has one purpose – individuation, and in the process of achieving this purpose we gain enough data for comprehension. So, in this respect analytical psychology can be represented as the practical science of individuation, in which comprehension replaces the characteristic features of knowledge produced by natural sciences.

Last but not the least, Jung, much like Kant, thought that the future of psychology as a 'proper' precise science would be closely connected with finding the way to make psychic processes and contents intuitive and presentable a priori in *space*, despite the fact that, according to Kant, they exist only in *time*. The point here is that Jung was influenced by representatives of *the energy theory*, first of all by Grot¹⁴. The energy theory takes an important place among Jung's ideas. At the first time it is brightly revealed in the article *On the Psychic Energy* (1912), and then in *On the Nature of the Psyche* (1947, republished in 1954). Such devotion to the energy theory may be explained by the assumption that the mature Jung tried to avoid Kant's restrictions, concerning the possibility of mathematical cognition of the contents of inner sense, which are given only in time. As we remember, according to Jung only the application of the energy formula can allow us to resolve this task, "since mass and energy are of the same nature, mass and velocity would be adequate concepts for characterizing the psyche so far as it has any observable effects in space: in other words, it must have an aspect under which it would appear as mass in motion" (Jung, 1975, p. 234).

However, it should be noted that if psychologists would be able someday to find a principle for representing the psychic processes in space, they should decide what to do with

synchronicity and, consequently, with the trans-temporal and trans-spatial nature of the psyche as it really is, not as it appears to us. On the other hand, this task is not topical, because it goes beyond the transcendental area and refers to the transcendent, given that its decision is closely connected with the *psychoid factor*¹⁵, which delimits the borders of the phenomenal world and the sphere of possible experience.

Jung perfectly realized that any direct correspondence between the principles of physics and those of psychology is impossible. However, he believed that the study of analogies between them had a great heuristic potential, and that these analogies “are significant enough in themselves to warrant the prominence we have given them” (Jung, 1975, p. 234).

At the same time, according to Jung, there was nothing to discuss seriously in his epoch: he had a very low opinion of the level of modern scientific psychology. Jung compared psychology with medicine in the 16th century, when there was no physiology at all, and with natural sciences in the 13th century, when the first experiments took place (Jung, 1975, p. 356).

So, what should new generations of psychologists do? Jung gave only a common principle. He wrote that if at the end of the 19th and beginning of 20th century psychology were focusing predominantly on the physiological determination of psychic processes, the task for future psychology should be to clarify how psychic processes are governed by the spirit, e.g. by archetypes and archetypal plots.

CONCLUSION

Kant's and Jung's in their works considered explicitly the issue of possibility of the scientific psychology. After a brief analysis it seems obvious that both thinkers share the position, according to which psychology as a ‘proper’ science is impossible. Moreover, they rely on similar arguments.

Firstly, Kant and Jung thought that a serious obstacle for psychology to become a ‘proper’ science lies in the coincidence between subject and object of cognition, which makes almost impossible even such a fundamental scientific procedure as observation, because the observer can distort and transform the state of the observed subject.

Secondly, the fundamental impossibility of using strict quantitative mathematical methods to the psyche cognition prevents psychology to become a science.

Thirdly, the still unresolved issue of psychophysical parallelism creates a ‘grim’ background for any efforts aimed at creating a rigorous scientific psychology.

The agreement between Kant and Jung in these and many other issues, regarding the science of psyche, despite the difference between their epochs and their belonging to very different intellectual contexts, is very impressive. If Kant focused predominantly on the theoretical aspect of the fundamental impossibility of psychology as a ‘proper’ science, because he could not know for sure what results would be supplied by psychology a century later, Jung, for his part, had the opportunity to make sure de facto that all recent discoveries had failed to put psychology on a solid foundation.

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ABSTRACT: This study aims to show a similarity of Kant's and Jung's approaches to an issue of the possibility of scientific psychology, hence to explicate what they thought about the future of psychology. Therefore, the article contains heuristic material, which can contribute in a resolving of such methodological task as searching of promising directions to improve philosophical and scientific psychology.

To achieve the aim the author attempts to clarify an entity of Kant's and Jung's objections against even the possibility of scientific psychology and to find out ways to overcome those objections in Kant's and Jung's works. The main methods were explication, reconstruction and comparative analysis of Kant's and Jung's views.

As a result it was found, that Kant and Jung allocated one and the same obstacles, which, on their opinion, prevent psychology to become a science in the strict sense. They are: 1) coincidence of subject and object in psychology; 2) impossibility to apply quantitative mathematic methods in psychology; 3) pendency of the issue of psychophysical parallelism. However, Kant and Jung indicated ways to resolve formulated by them fundamental difficulties. All those ways lay through the searching a principle of interaction and connection between the psychic and the physical.

KEYWORDS: I. Kant, C.G. Jung, science, empirical and rational psychology, analytical psychology, mathematic methods in psychology

NOTES

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2 Here and below I use the Cambridge edition of the *Metaphysical Foundations of Natural Science* (Kant, 2004).

3 A more rigorous treatment of psychophysical parallelism is offered in Balanovskiy (2015).

4 See, for example, Jung (1975, pp. 9-10: 213-215).

5 Schmidt gives a similar definition (2008, p. 462).

6 Vasil'ev proposes to call the first doctrine *synthetic* empirical psychology, and the second one *analytical* empirical psychology.

7 The inner sense is a way by which the subject observes itself and its own internal states (KrV, 04: 37). The form of inner sense is time (KrV, 04: 37), which has only one dimension, that is why objects of the inner sense (i.e. contents of the psyche with the possible exception of intuition of outer objects) cannot be intuited and presented a priori in space. But the last condition is necessary in order to establish a 'proper' science (MAN, 04: 471). At the same time, the inner sense is closely connected with the transcendental unity of apperception, without which the individual 'I', separated from other things, is unthinkable, and, consequently, psyche as such is unthinkable too. Thus, the difficulties in the cognition of inner sense phenomena automatically become difficulties in the science of human psyche.

8 Buchner notes that Kant could not keep in mind self-observation or introspection in the modern methodological sense (Buchner, 1897, p. 47).

9 Here and below I use the Cambridge edition of Kant's lectures on Metaphysics L₁ (Kant, 1997).

10 Here and below I use the Cambridge edition of Kant's works (Kant, 2007).

11 According to Makkreel, the distinction between mind (*Gemüt*) and spirit (*Geist*) can be found in Friedländer anthropology lectures (1775). He writes that "mind is defined as 'the mode in which the soul is affected by things', whereas spirit 'is the subject that thinks, and is active'" (Makkreel, 2001, p. 193).

12 Sturm maintains that Kant had impact on the formation of the main idea developed by Fechner's *Elemente der Psychophysik*, namely that the intensity of subjective perceptions can be measured by mathematical means (Sturm, 2001, pp. 167-168).

13 More information on the topic in Balanovskiy (*Con-Textos Kantianos*, 2016).

14 More information on the topic in Balanovskiy (*Voprosy Filosofii*, 2016).

15 According to Jung, the 'psychoid' or 'psychoid factor' is the transcendent psychological, the bridge between the matter and the pure spirit (Jung, 1975, p. 216). To be precise, this is the very border itself between matter and spirit, because animate and inanimate nature is available for our direct research, as pure 'spirit' or mental constructions (like ideas and notions) do. At the same time, the psychoid factor, like a thing-in-itself, always remains beyond the frames of possible cognition.

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