

THE ROLE OF CONSCIOUSNESS IN HUMAN COGNITIVE ACTIVITY

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The problem of consciousness is examined in the article. It is argued that all the existing approaches to consciousness do not explain the role consciousness plays in human life. An attempt of revealing and describing the principles of the mind's work is made. Experimental phenomena observed by the author and his followers, particularly, the tendency of previously non-realized ideas not to be realized subsequently, are reviewed. The discussion of these phenomena allows to formulate a novel view on the nature of consciousness.

Keywords: consciousness, cognition, awareness, adequacy, emotions.

Setting up the problem

Consciousness is the most important heritage of human beings. Would anybody want to live forever, if this long life had been elapsed in the unconscious state? Nevertheless we know neither what consciousness is, nor how it has appeared and what consciousness does. Philosophers admit that “nowadays members of the sciences, traditionally related to consciousness research, consider it to be one of the most complex problems, far from being solved” (Mamchur, 2008, p.31). No one knows how to approach the problem of “qualia”, the problem of subjective experience. It always tormented psychologists. At the close of the past century D. Chalmers (1996) declared it to be the most complicated problem in psychology. Many repeat this Chalmers’ statement nowadays. Not having any other ideas some consider consciousness to be the quality essential to any matter. Nonetheless they realize that nobody knows, how to discover this quality, because it’s impossible to define what exactly this quality is (Velmans, 2007). M.K. Mamardashvili fairly said (Mamardashvili, 1996, p. 215), “consciousness is something, that as human beings we know everything about, but we know nothing about it as scientists”.

During the last decades the power of cognitive unconscious is demonstrated in a huge amount of beautiful experiments. Everybody agrees: unconscious processes have considerably larger resources and the more powerful computing ability, than consciousness (Bargh, and Morsella, 2008) The unconscious decision about realization of some action often appears earlier than the conscious intention to act (Libet, 2003; 2006). A person unconsciously perceives, stores and processes much more information, than consciously; s/he unconsciously finds the regularities in the environment far quicker; s/he can regulate the power and accuracy of his/hers actions much better without the conscious control. We are not aware of the causes of our own thoughts. (In Balzac’s words, “thoughts come to our head without asking us about it”). These nonconscious processes govern the majority of our social behavior – from perception and interpretation of the social world to interpersonal interactions and goal pursuits (Bargh, and Williams, 2006).

Why are we aware of our cognitions, if they appear and develop unconsciously? We can single out several types of answers. The first one: awareness is useful (contributes to survival, to adequate reflection of reality and so on). It is the way they often write in handbooks: they say consciousness saves us from the informational overload by means of reducing the information flows and cutting off the unnecessary information; it stores the information selectively; it plans the behavior, giving the great resources for flexible reactions to the changing demands of life. All such descriptions just give us an illusion of understanding. To cut off the unnecessary information you firstly need to receive it, process it, and only then cut it off. How does it reduce the information load? The suggestion that a human is able to make a conscious decision about the information to be realized, contradicts any logic: how can we consciously be unaware of something? Thus, gaining information should take place at the unconscious level at first. Conscious planning on the basis of the limited information cannot be better than the planning on the basis of the whole received one. The suggestion that consciousness with its rather limited informational capacity lets us react in a more flexible way than unconscious looks strange as well. On the whole this answer leads to the deadlock, because all activity ascribed to consciousness is accomplished unconsciously at first. And what’s more, this answer doesn’t explain why the result of all this unconscious work should be realized.

The attempts to ascribe some intelligible sense to the work of consciousness occur, but do not seem persuasive. Here is one of the most interesting hypotheses. B.J. Baars, U. Ramamurthy и S. Franklin (Baars, Ramamurthy, and Franklin, 2007) argue that human cognition is accomplished by a great number of relatively small, special purpose “processors”, almost always unconscious. These “processors” are comparatively simple, and communication between them is relatively rare, but they can unite into the coalitions. They compete for access to a global workspace (and subjectively into consciousness). This limited capacity global workspace serves to broadcast the message from the winning coalition to all the unconscious “processors”, in order to join the recruited resources for gaining the current goal. From this point of view consciousness function is to make different unconscious knowledge sources (“processors”) interact with each other in solving novel problems. The suggested hypothesis is interesting, though it is absolutely speculative. But the main question is still open: why is this mechanism considered to be consciousness? In the explanation given it is just postulated that the work of the mechanism described is accompanied by the feeling of awareness, while awareness itself does not have any reason. Awareness is present at the work of this mechanism for some purpose or other. Such an approach brings us closer to another answer to the question about the nature of consciousness. This answer is even stranger than the previous one. They say the process of awareness is absolutely useless. It has no function, it just accompanies some processes. Psychological literature is filled with discussions whether consciousness is an epiphenomenon or not (Dulany, 2008). There are suggestions to reject the idea to research consciousness at all. They say our thoughts and feelings entirely consist of the physiological activity of the brain and they are nothing less than that, and our “Self” is just an illusion. At the times of John Watson it could have been justified by the positivist climate of the epoch. But in my opinion nowadays such a position resembles the behavior of an ostrich: having encountered a problem they hide their heads in the sand and pretend the problem does not exist at all. Considering consciousness to be the epiphenomenon contradicts the methodological principle of simplicity, basic for the science. Nature doesn't create anything in vain or, in Newton's words, “does not luxuriate with excesses”.

Sometimes there is an allusion of the answer about the function of consciousness (though it is not evidently expressed) among psychother-

apists: it is harmful. They say it slants reality in favor of its notions and thus leads to the misrepresentation; it includes the information which *is not relevant* to the situation or excludes the one which *is relevant* and so on. A lot of psychologists show in their experiments that we see only things we understand; that the world in our perception is misrepresented *to a degree of recognition*; material which *does not correspond* to our expectations is repressed, and so on. Though it remains unclear why, in the opinion of the same psychotherapists, consciousness nevertheless contributes to healing. Furthermore, considering consciousness to be an obstacle also contradicts the principle of simplicity: nature doesn't create any “monsters” with a special goal to spoil something.

Here is the deplorable result: the problem of consciousness which has been raised in ancient times and was taken hard during the Age of Enlightenment became only more mysterious today as the result of a great number of experiments. The discovered power of cognitive unconscious has prejudiced all the previous ideas about the function of consciousness. The more contemporary works about research of consciousness you read, the keener is your feeling of the latent perplexity of the authors – whenever they try to ascribe consciousness as the function, it turns out that consciousness is not needed for this, either. It means we should look for another way to answer that question. Consciousness is the specific mechanism of our mind, intended for implementing some unknown goal still needed to be found. Before the start of the search we will try to generalize everything we know about the work of mind and consciousness and to describe some general principles of their work (for more complete description of these principles see: Allakhverdov, 2000).

Principles of the mind's work

Even G.W. von Leibniz has formulated “the great principle of reasonableness”: nothing happens without a cause or sufficient grounds. D. Hume has ascribed the ability to find reason for every event exclusive to human nature. The empirically verified principle can be drawn from that Hume's position: even accidental events cannot be perceived as the causeless ones; the mind always finds reasons for them. Observing the behavior of little children shows that they find causal explanations for everything “at any cost” (the term of J. Piaget). In primitive societies everything is related to everything as well. Their spiritual life is the giant

variation on the theme of causality (the term of A. Huber and M. Moss). The truth of this principle is also confirmed by various experimental data received during the last century (it is enough to mention the causal attribution and probabilistic forecasting research). People do react to chance events as if they were not accidental even though they might be unaware of it. For example, the anchoring effect found by D. Kahneman and A. Tversky (Tversky, and Kahneman, 1974). The subjects were asked a question: what is the percentage of the African countries in UN? One group of subjects was given the number 65% to compare with, the chance they were convinced in (the number “accidentally” appeared in roulette). Another group of subjects was similarly given the number of 10%. It was found that those quasi accidental numbers influenced the subjects’ answers: the average values of the answers in the first group were significantly higher, than in the second one. Particularly it means that even the numbers generated by the roulette are nevertheless perceived not as the accidental ones, but as somehow related with the asked questions.

If really nothing in the world happens without a reason, then the search for reasons becomes easier due to this principle. Here is the example of my old research. One group of subjects was to find the rule enabling them to continue the sequence of binary digits as far as possible. That instruction set up an attitude for determinacy: there can be no accidentally appearing digit in the sequence. The other group was to find the longest possible succession of digits repeated with no changes in different parts of the sequence no less than three times. That task allowed the presence of the accidental digits (“noise”) the subjects were permitted not to pay attention to during the performance of the task. The subjects of both groups were presented with the same sequence: a set of 14 digits repeated three times in succession. The exact performance of the instruction in both groups was to lead to the same answer: to the extraction of the 14-digit sequence. Such an answer made it possible to continue the sequence and at the same time it was the longest group of digits repeated three times in succession. During the set 5 minutes the problem was solved by 81% of subjects in a group with the attitude for determinacy, and only by 11% of subjects in another group. This example shows that knowledge about determinacy promotes efficient action in a strictly determined environment. Such knowledge does not prevent from realizing the chance, but makes us interpret it as a result of influence of still unknown reasons, that’s why it doesn’t complicate the

process of cognition even if the environment is not entirely determined. It is clear that hypotheses about the concrete reasons of some phenomena can be wrong. That’s why mind should verify them empirically and correct them.

Description of the determined world cannot be contradictory. That’s why the reviewed principle may be expressed as the urge towards concordance, consistency of the existing cognitions. Such characteristic of human nature also has been noted by many philosophers and psychologists. Sometimes it is formulated as “a human necessity to live in a rational world” (Poducka, 1980, p. 409). If your slippers once told you “Good morning”, you would search for a hidden tape recorder or think that you had not woken up completely, but you wouldn’t believe that the slippers talk, because it would contradict your knowledge of the world. Having encountered with contradictory information a person begins to work with it immediately and tries to reconsider it so as to get rid of contradiction. Sometimes s/he devalues the information by means of increasing the contradiction to the state of unreal grotesque. Research show us the way a person distorts information to remove or decrease the contradiction. (Psychologists use different terms to designate such phenomena: rationalization, reducing of cognitive dissonance, etc.). If s/he doesn’t manage to do it, sometimes s/he totally represses this information from consciousness.

A person can react to the emerging contradictions even without being aware of the fact that contradiction exists. Let’s consider the anchoring effect. People shift their answers towards the imposed number comparably with normal answers given in the control group. In other words, the subjects, being not aware of it, conflict with their own opinion which they would have probably expressed in the absence of the imposed number. Our research demonstrates that they do react to this contradiction and in a rather peculiar way – they increase it. V.L. Volokhonsky and E.A. Vishnyakova (Volokhonskyi, and Vishnyakova, 2006) have retested the influence of anchoring effect in three weeks and have found that the subjects demonstrate the significantly larger shift of their answers towards the anchor than right-about; in case of a shift towards the anchor their confidence in the correctness of the answers was estimated higher. The subjects ostensibly devalue the contradiction by means of increasing it, demonstrating that their previous shift from the normal answer has been right, but insufficient. Here is an example of research in the

field of illusory perception. V.J. Karpinskaya (Karpinskaya, 2006) has showed that the mere *illusory* change of the stimulus size (in H. Ebbinghaus, M. Ponzo, A. Charpentier illusions and others) also changes the threshold of the stimulus detection. It means that while watching the visual illusion the visual acuity of the observer seems to be changing. Such results may be explained by the hypothesis that the visual system adequately reflects the size of all the images including the illusory ones, but only the illusory size is realized rather than the real one. If it is really so, then the illusory perception of the size contradicts the real estimation of the size made by the visual system. How do the subjects react to this unconscious contradiction? A.G. Prichislenko has presented the cards with the images of visual illusions to her subjects (the illusion of a star, the Müller-Lyer illusion etc.) and has given them the task to estimate the length of the lines or the distance between the objects in millimeters. During the retest in a week the size of the illusion (the illusory distortion of the size) decreases. Visual estimates of illusory images' size accuracy are significantly worse in comparison to the estimates of non-illusory. It seems that the subjects estimate the size of illusory images with such a low accuracy, that their previous mistake is in the area of error, so this value is negligible.

So, mind lives in a strictly determined world and ascribes reasons to everything, it constructs the system of consistent knowledge of the world. It reduces the emerging contradictions and devalues them; and it does all of that and many other things being unaware of its own actions. In D. Hume's words, these actions cannot be either created or suppressed with reasoning. Consciousness arising in the depths of mind submits to these principles too. Let's try to single out the specific principles of consciousness. But at first we should note: awareness is the only thing to be experienced as the phenomenon of consciousness. And it is the existence of such an experience that gives us the right to verify correlation of the theoretical constructs with consciousness empirically. We all know a classical metaphor of a continuous consciousness flow by William James. It means that the consciousness content is always continuously changing; a person is not able to realize the same thing without any changes. However even W. Goethe has formulated the principle of the continual changing of impressions. H. Spenser wrote about the same thing in such words: "When the change in consciousness ceases – consciousness ceases too... Changes make up the raw material of con-

sciousness" (cit.: Bekhterev, 1999, p.203-204). It comes from the above that the invariable stimulation should either entirely escape consciousness or transform itself. The examples are numerous. A subject does not realize an image without any changes in color or brightness and stabilized to the retina in just 1-3 sec from the beginning of the presentation. The permanent irritant of moderate intensity acting on the ear or skin is not being noticed after very little time. The colored background loses its coloration during the long-lasting fixation. The volume of the same sound presented to the subject as the standard also changes subjectively. The multiple repeating of the same word or a group of words leads to a subjective feeling of the loss of sense of these words. A set of elements presented to be remembered is being forgotten very rapidly, not remaining in actual awareness. The whole invariable context of the situation also is not realized. Thus, it is unlikely that the reader of this text is simultaneously aware of his/hers own name and where s/he is.

Let's try to understand the reason of such phenomena. Every stimulus needs some reason of its emergence to be explained. Consciousness finds such a reason necessarily and regardless of whether this reason is right or wrong. If the stimuli don't change later on, consciousness stops working with them because now there is nothing to explain. Therefore the stimuli are not realized any longer. If such reasoning is correct, then the hypothesis is liable for empirical verification results: consciousness works longer with rare and sudden stimuli than with the frequent and expected ones. In order to explain the emergence of the unexpected stimuli it would take consciousness more time to work with them. That is why they would remain in consciousness longer. Indeed, it is well-known that the emergence of the absolutely unexpected stimuli brings a peculiar influence on the subjects – they are embarrassed to some extent, and the difficulties in performing current activity arise. The reaction to the rare signals is slower, than to the frequent ones (Hick's law); the sudden stimulus remains in memory for a longer time, i.e. is being realized longer (von Roestorff effect) etc. If the stimuli are presented in a sequence constructed according to some rule which is not realized by the subjects then the implicit learning is observed – the subject processes the stimuli in consciousness faster and faster. Thus, in the experiment of our group (Moroshkina, 2006) the subjects were to add and to subtract the pairs of digits presented. In a case when these digits proceeded in a complicated non-realized sequence, the time of the simplest arithmeti-

cal operations gradually decreased to a significantly greater extent than in control group, where the sequence of the digit pairs was not observed. If the sequence of the digit pairs changed and in a place where the subjects had previously had to add they now had to subtract, the time of arithmetical operations became even longer than before the learning at all. If a person is aware of only the part of the information presented (in case of great amount of information or its uncertainty), then during the next presentation s/he is usually aware of the same part of information. Gestalt-psychologists called such a phenomenon the law of figure after-effect. In general, the fact is that the decision to realize something being made once (a positive choice) tends to have the aftereffect. This effect is evidently shown in memory research. When the set of stimuli exceeding the memory capacity is presented to a subject, the part of this set will be recalled, the other won't. During the repeated presentation of the same set the subject will firstly recall the elements which s/he has previously recalled. According to our research the other statement is also true. If a person is aware of only the part of information presented, then during the next presentation of the previously non-realized information s/he tends not to realize it again. It is striking, because in order not to realize something repeatedly you should remember what are the elements not to be realized, recognize these elements in the presented material and make a decision about non-realizing them after all. According to our data the elements which have not been recalled or recognized once, being presented in a new set are recalled and recognized worse than the elements that have not been presented earlier (the negative choice aftereffect). Besides, the non-realized meaning can even complicate the solving of the related tasks and, thus, it is still perceived by the subject, but, so to speak, with negative mark.

Mind reacting to correct and incorrect answers

It was shown in numerous research, that the time of the correct solution of simple cognitive tasks (recognition, counting and categorization) is usually faster than the incorrect solution time even at the same level of confidence. Confident answers are usually faster than the uncertain ones, but the confident right answers are faster than the confident wrong ones; the uncertain right answers are faster, than the uncertain

wrong ones (Allakhverdov, 1993). Thus, the subject is able to discriminate between his/hers correct and incorrect actions, even when s/he cannot subjectively assess if s/he has been doing right or wrong. The neurophysiological research also reveal the reaction of a subject to a mistake, even if s/he is not aware of this mistake (Bekhtereva, 2006). Though according to our data there are two exclusions, which do not cancel the conclusion derived: the same repeated incorrect answers are faster, than the rare correct ones¹; during the subject's conversion to a guessing strategy the uncertain incorrect answers may appear to be the fastest ones.

This ability of discriminating between the correct and incorrect answers is especially striking, when the subject solves the problems, which, as assumed, cannot be consciously solved at all. In my experiments the participants were to define without any calculations what day of the week corresponded to the date given. All of the dates were scattered at random all over the twentieth century. As it was expected the average probability of the right guesses was close to the theoretical result of a random choice, i.e. 1/7 (and even less than that). Nevertheless, if the subjects guessed the day of the week correctly, then during the presentation of the next date they gave the right answer significantly more frequently (in 22% of cases). In O.V. Naumenko research (Naumenko, 2006) the subjects were to choose without any calculating, which of the two presented digits should appear after the dot while dividing a 7-digit number by a 6-digit-number. The subjects were given no feedback about the correctness of their answers. It's not surprising, that during the first presentation of stimuli the subjects gave almost random answers. Nevertheless, when the same digits were presented in a week the subjects repeated their right answers almost two times more frequently than if it were a random choice. In N.P. Vladykina research (Vladykina, 2008) the subjects compared the presented stimulus with a standard. Within the zone of undistinguishing, i.e. the zone where the differences were lower than the threshold, the subjects usually considered the stimulus to be equal to standard. They rarely gave another answer, i.e. they answered that the stimulus was larger or smaller than the standard. But – it is strange – if that answer was right, then during the next presentation of

¹ I would like to note, that the probability of repeating ones' own mistake as a rule is significantly higher than the probability of making the mistake at all.

the same stimulus (though they could not realize that the stimulus was the same) they demonstrated an evident tendency to repeat exactly that answer.

An interesting result was found by N.S. Kudelkina (Kudelkina, 2008). The subjects were solving the anagrams. Before solving the task (500 msec before the emergence of the anagram) the subject was presented with a prime for 25 msec (with a subsequent masking for 50 msec). The content of the prime was either answer to the anagram (the “right” or “valid” prime) or another word (the “wrong” or “invalid” prime). The average anagram solving time when presented with the right primes appeared to be significantly less than the time when presented with the wrong primes. Usually this fact is interpreted in such a way: the non-realized prime gives a hint to the subject; and if the hint is right the speeding-up of solving the task is observed; if the hint is wrong – it leads to slowdown. But Kudelkina goes further. She gives one group of subjects a series of 20 anagrams with the right primes and then a series of 20 anagrams with the wrong primes. The sequence of the series for the other group of subjects was the opposite. The time of solving the anagrams accompanied by the right primes was significantly less in the first group than in the second one. Thus, there is a kind of distrust emerging for any primes of the subject. It means that s/he can somehow estimate the correctness of the hint, though s/he does not notice it and, of course, is not able to realize, that this hint has helped or hindered him. There is a question here: if a person can discriminate between correct and incorrect answers when solving simple cognitive tasks, then why does s/he make mistakes at all?

The epistemological problem

Before searching for the answer, we should firstly formulate the more general problem, having succeeded in tormenting many philosophers (J. Locke and others): how is mind able to compare its own ideas with reality, if reality is given to mind only as the mind’s own ideas? It is impossible to compare something being in consciousness with something being out of consciousness. Some authors claim that this problem is unsolvable in principle. But then we should refuse to talk about accuracy of perception, correctness of the memories, truth of the motives and efficacy of actions, adequacy of self-esteem etc. and thereby from

psychology itself. There is no doubt that people can solve this problem. Even William James wrote about it. The cited data confirm the idea that mind does really solve it, being unconscious of how. But this ability still needs some logical grounds. Without a logical solution of epistemological problem no theory of mind and consciousness is possible at all.

Contemporary attempts of the solution of this problem go back to I. Kant. The essence of the solution is this: the ideas given to mind cannot be compared directly with reality; but they can be compared with other ideas of mind. If similar ideas are produced on the basis of different ways of cognition, independent from each other (i.e. on the basis of different information, different principles of processing, and so on), then we have a hope that this similarity is determined by reality cognized, rather than the way of cognition. It is what modern philosophers say: knowledge should be verified by means of comparing it with knowledge obtained in another way. Concretization of the independent ways may be of different kind. Kant told about two independent stems of human cognition: sensuality and reason. In the twentieth century physiologists and psychologists suggested the sensory systems which reflect reality each in its own way for the role of those independent ways of cognition. In my opinion, we should recognize the independence of the sensory cognition and the motor cognition. Then the comparison of sensory and motor notions about reality becomes the way of mutual verification of these notions, because coincidence of the notions would mean not so much the work of the sensory or motor cognitive systems, as the real things around. A lot of modern models show us the existence of autonomous “processors”, which are the solving tasks the mind is facing (though not always paying attention to the necessity of processors existing that solve the same tasks). Man’s own ideas about reality are compared during the process of social interaction also: people construct their independent conceptions of reality and are partially able to correct each other. It is important: the matter is about constructing different descriptions of reality, independent from each other, which could be compared together.

Such an approach to the solution of epistemological problem has one fundamental difficulty. Let us assume that sensory notions about the environment are compared with the motor ones about the same environment. But the collation cannot occur directly in the sensory or motor field – otherwise the result of the comparison depends on it.

Nonetheless, the initial cognitive structures have to get feedback about the result of their activity. The problem is solved firstly if we allow the existence of an additional block which accomplishes the collation (according to our assumption – the sensory-motor one); and secondly if we allow the initial cognitive structures receiving only the qualitative signal about the coincidence/non-coincidence of ideas from this new block. Otherwise the independence of verification is lost. What if an emotional signal is a such qualitative signal? Let's think of data, received by O.K. Tikhomirov School (Tikhomirov, 1969): while solving a chess problem the state of emotional activation, which is revealed through a GSR shift, anticipates the naming of the crucial move for several seconds. Tikhomirov himself suggested that there emerges a feeling of close solution. But how can the subject know that s/he is just about to find a right move, if this move does not exist in any form? We may assume that the succession of the problem solving process is different: the subject finds the solution at first, but s/he is not aware of it. If the solution, found in some way, corresponds to the solution of the problem, made by means of another way, then the emotional signal emerges, informing that the solution was found, and thereupon the realization of the solution itself occurs.

Such a view is partly confirmed in the research of our group. M.G. Filippova (Filippova, 2006) presented the ordinary and the ambiguous figures in the left part of a screen to her subjects. At first the subject was to note, what a category or categories that image belonged to (was it a human or a bird, or an insect etc.). That answer helped define what kind of meaning of the ambiguous figure the subject saw. Then in the right part of the screen different tasks were presented (anagrams solving, recognizing images by their fragments etc.) that were either related to the presented figure or not (neutral). The presentation of the initial figure continued in the left part of the screen. And if the subject noted only the one meaning of the ambiguous figure, then the figure was gradually changing into the image with another meaning. As soon as the subject noticed the change, s/he was to say what s/he saw now. That moment was regarded as the realization of the previously non-conscious meaning.

One kind of result was obvious. The time of solving the tasks that were related to the realized meaning of the simultaneously presented ambiguous figure was significantly less than the time when the neutral images were simultaneously presented. The closer the associative rela-

tionship was, the faster was the time of task solving. The second kind of result was the expected one for us: the non-conscious meaning of the ambiguous figure interfered with solving of the tasks related to it; the time of solving them was slower. But the most important and the strangest fact was that: in cases when the subjects realized the second meaning of the ambiguous figure, which was not previously noticed, then *all the tasks* – either related with the two meanings of the figure or not – were solved significantly faster.

According to the suggestion made earlier, realization of any solution is anticipated with a signal “the solution is found”. It seems that this signal is not specific for a certain task. The emergence of this signal leads to estimation of all the problems being simultaneously solved (a person does always simultaneously solve a lot of problems in his/hers life) as having been already solved; so a person realizes some phenomena which take place in his/hers unconscious faster. Maybe that is why the realization of the problem during the psychotherapeutical session contributes to healing. It is because the other problems are also being solved at the same time.

Consciousness as the imitator of cognitive activity

We have assumed that a person as the cognizing system receives some emotional signals informing him of success (or failure) of his/her cognitive activity. These signals play the role of criteria of cognitive process efficacy for the whole system. But any system with the efficacy criteria given tunes in to their achievement. As soon as the efficacy criteria are formulated in any social systems, the real goal is immediately substituted with an artificial goal determined by these criteria. Does a person as the cognizing system perhaps begin to urge for receiving of subjectively experienced positive emotional signals and avoiding the negative ones, rather than search for truth? Isn't it the function of consciousness? If it is so, then consciousness may be interpreted as a special mechanism influencing the cognitive processes so as to achieve positive subjective experiences. In other words, consciousness just imitates the successful cognitive activity, rather than cognizes.

The artificial substitution of a true cognitive process with its imitation can rarely lead to intense experiences. A weak (but rather dif-

ferentiated) emotional background, which is achievable here, could be considered to be awareness. One of consciousness aims is to provide itself with the continuous existing of such a background (“consciousness flow”). The consciousness activity cannot, of course, be realized; only the result – the conscious experience – is realized, because the process leading to realizing cannot be realized. The emergence of such a mechanism may certainly lead a person away from reality and even show him/her the way to madness. And it is not surprising that it is a characteristic of human consciousness to make mistakes. But in the overwhelming majority of situations consciousness reveals the new ways of cognition of reality, changing the way of cognition in a revolutionary manner. Consciousness behaves as a scientist constructing the hypotheses about the world and verifying them empirically. Similarly to the scientist it simplifies the real world and reflects it sometimes far from being accurate. Consciousness regulates the activity, but first of all it is the activity of constructing and verifying the hypotheses. It considers the world to be determined and ascribes reasons to everything – even to the random events, though it can only guess about the real causes ruling over the world. The scientist makes theories for the idealized objects, i.e. the ones that do not really exist. Consciousness forms the idealized constructs – notions that do not exist in reality either. And it defends the constructs formed in different structures from disproving in any way possible. And consciousness does it in a very graceful way, because it has the ability of interfering in the process of collation, identifying the non-identical things and distinguishing between the undistinguishable ones.

Certainly the world constructed by consciousness is not absolutely adequate to reality, but it is not alienated from reality either, otherwise it would have not managed to achieve the long-lasting positive emotional states. The scientists guess about the unobservable characteristics of macro and micro world just due to their consciousness. It is due to consciousness that we are able to reason about the processes of Universe origin, which are presented in our direct physiological reflection in no way; we are able of discriminating between good and bad; and we are even able to search for principles ruling over unconscious. The suggested view on the role of consciousness in human cognitive activity is still rather speculative; many things are left not fully clarified in such an approach. Nevertheless it seems that it has fine heuristic potential and is liable to empirical verification.

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