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SCIENCE AND OUR EFFORT TO FIND MEANING IN OUR WORLD. REFLECTIONS ON A SYMPOSIUM HELD DURING THE SECOND BIENNIAL MEETING OF URAM IN EUROPE, 1987

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Can science contribute to the human quest for meaning in this world? This question was submitted to some participants on the URAM conference with the request to think about the matter and then to present briefly some of their reflections as members of a symposium panel. Ultimately, the panel included Professors Marc E. Carvalho (Philosophy of Religion with special interests in systems sciences and process thinking), George Panco (Chemistry, Biology and Mathematics with special interests in Logic and Philosophy of Science), Maria-Luisa Silvestre (Ancient Philosophy) and Jean-Biigtärma Zaongo (Ethnolinguistics) with myself (Experimental Social Psychology) as chairman.

The presentations of the panel and the subsequent discussion yielded a number of ideas that we shall not present in chronological order but try to synthesize in a systematic account. Thereby we shall refer to the contributions of the panel members by the names of their authors while interventions during the discussion, which involved also members of the audience whose identity could not always be clearly established, are simply referred to as 'made by participants'. In a first section we shall briefly deal with some conceptual ambiguities that showed up especially during the discussion and might be due to the heterogeneous composition of the panel and the audience. In the subsequent sections we shall focus on the specific contributions by the members of the panel. Rather

than providing literal transcriptions we shall try to render the gist of their communications as we understood them. In this way we are able to establish some links and outline some perspectives that otherwise might not become apparent. However, the depth of understanding we gain involves the risk that our accounts detract from the messages originally intended by the speakers. Hence, they have to be credited for the ideas that will be connected with their names but cannot be declared responsible for them.

1. SOME CONCEPTUAL AMBIGUITIES REGARDING 'MEANING' AND RELATED TERMS

The initial question concerning the contribution of science to the search for meaning was formulated in a very general way allowing it to function as a white screen on which participants from various disciplines could project their ideas. Not surprisingly, these ideas sometimes clashed. Nevertheless, when overhearing the recordings of the discussions, it became clear that, at least to a certain extent, disagreements were due to terminological confusion rather than to substantial incompatibilities between the views that were expressed. Apparently, key terms such as 'meaning' and 'truth' did not always carry the same loads and even when used by the same speaker, the meanings of terms might show subtle shifts during the discussion. It seems to us that a good deal of the variety of meanings underlying the discussion might be covered by two dimensions that corresponded to two conceptual dichotomies: (a) *signification* versus *significance*, and (b) *immediate* versus *ultimate*.

The first dichotomy concerned the meaning of 'meaning'. Some participants conceived of it as the *signification* of signs or sign-systems such as morphemes, texts, etc. 'Meaning' in this sense is the object of specific disciplines such as semantics, semiotics and hermeneutics. Other participants, however, were dealing with 'meaning' as an emergent existential category connected not so much with the interpretation of signs as with the experience of reality as *significant* in that, for instance, it appeals to certain values.

The second dichotomy had to do with the aims of the congress requiring concepts developed with respect to *immediate* reality to be transposed to the level of *ultimate* reality. For instance, transposing the concept of 'signification' to the ultimate would mean that reality or 'the world' is considered as a gigantic sign or sign system the 'meaning' of which has to be deciphered as that of a text. Certain participants who conceived of 'meaning' as 'signification of the immediate' clearly felt uneasy when considering 'ultimate meaning' as an object of knowledge arguing that in order to interpret the 'meaning' (read: 'signification') of 'reality' (add: 'as a sign') would require us to take a point of view outside reality which is impossible by definition. Participants who understood 'meaning' as 'significance' clearly had less problems with 'ultimate' concepts regarding 'meaning'. Those who defined meaning as 'signification' even objected against connecting 'meaning' with science as was done in the title of the symposium. Science, they said, did not produce 'meaning' but 'understanding'. This understanding can be conceived of as a partial revelation of reality to which some participants referred using the term 'meaning' while others preferred 'truth'. It was

From: Ultimate Reality and Meaning. Interdisciplinary Studies in the Philosophy of Understanding, 1988, 11, 150-156.

evident from the discussion that 'meaning' and 'truth' here belonged to the immediate rather than the ultimate level and certain disagreements resulted from one participant reserving the term 'truth' for the ultimate level and 'meaning' for the immediate level, while another participant might do just the other way around.

Combining the two dichotomies as two orthogonal dimensions, we obtain a semantic map displaying four concepts of meaning:

- 1 Immediate significance
- 2 Immediate signification
- 3 Ultimate significance
- 4 Ultimate signification

The discussions left us with the impression that 1 and 4 were felt to be respectively the most and the least accessible for the scientist, 2 and 3 having intermediary positions. Notice that the meaning-concept students of URAM are interested in may correspond to 3 and thus belongs to the intermediary positions which may make of it a controversial topic.

Finally, it was not always clear which of these meaning-concepts was being used during particular interventions. Neither was it evident that no other meaning-concepts were used in addition. Hence in the subsequent sections we shall not always force the ideas expressed by participants into one of the four above mentioned categories. However, keeping those categories in mind may be helpful to understand the various views that were presented.

2. FROM SCIENCE TO MEANING

Until recently there was a widespread expectation that sooner or later science would solve all problems inclusive of the metaphysical ones. Some people expected that science would outlive existing philosophical and religious doctrines (scientism), while others claimed that in the end science would prove their present convictions to be the only right ones. All of them considered science as a royal avenue towards meaning in the sense of the right appreciation of the significance of the world. At present, this optimistic belief in the power of science has largely declined, partly because of philosophical criticism (e.g. by phenomenologists and existentialists), partly because scientists themselves become aware of their limitations. Science is still believed to be a valuable source of knowledge concerning the immediate reality we confront in the daily struggle for life. The search for URAM, however, would extend beyond science, scientific knowledge providing at best part of the raw material from which this search may proceed. The latter view seemed dominant among participants and was most elegantly rendered by George Panco.

2.1 George Panco: Meaning beyond science

In order to have meaning, Panco argued, the world should be intentional. Something that just occurs cannot have meaning. Hence, looking for the meaning of the world means: looking for intentionality behind the world. In the most rigorous sense, this search is

impossible in that it would require us to deal with events localized outside the world while, being part and parcel of the world ourselves, our knowledge is confined to the world. In order to have our knowledge reach beyond the world we should assume that the principles of epistemology established within our world have absolute validity. However, even if we would relax our initial rigor and take this assumption for granted, then we might not yet be able to establish whether the world is intentional or just occurs. In addition, we should have at our disposal a principle allowing us to discriminate between intentional and merely occurring events. A similar principle may be provided by 'probability' an event being considered as intentional if it is extremely improbable. Proceeding from the probability principle, a demonstration of the intentional character of the world can be developed (see Panco, 1982).

Being intentional, the world may have a meaning. However, would this meaning be accessible to science? Panco, who presumably associated meaning with signification, denied it. However, he suggested that there might be a *scientific equivalent of meaning* – which would be: the *motive* that underlies the intention – apparently a concept of 'meaning as significance'. Could we reach this motive? A direct search for the motive behind the world was disqualified by Panco as even not being 'science fiction' but 'philosophy fiction'. As a more acceptable alternative he suggested that scientists could try to establish other characteristics of our world, apart from life, which seem intentional. From those characteristics a hypothetical picture of the world 'as if it was intended' could be derived. Proceeding from this picture, specific hypotheses may be derived and hoped to be testable. In this way a genuine scientific contribution to the search for meaning in our world would be realized. However, Panco believed that this contribution may be extremely difficult to be accomplished and reminded of the initial aim of the society for the study of human ideas on URAM being not to find meaning in our world but to inventory the meanings that have been accorded to it throughout the ages, which is a much more accessible task.

2.2 Marc C. Carvalho: Meaning through science after all

Panco was quite reluctant to view science as a means to produce meaning. Only if there was a relaxation of scientific rigor, could he conceive of a scientific way to reach meaning which, however, he considered as a dream rather than as a realistic expectation. Quite surprisingly Carvalho advanced a different view allowing for reaching meaning through science without backsliding into the scientism of the old days. Whether or not science can find meaning in our world, Carvalho argued, depends on whether the world and ourselves (among whom are the scientists) are viewed as *being* or as *becoming*.

Taking the perspective of *being* means that the world, ourselves, science, and meaning are regarded as *separate entities*. If this is the case, then Carvalho accepts, in full agreement with Panco's initial 'rigorous position', that finding meaning through science is impossible in that the scientist being part of the world he describes must lead towards paradoxes. The scientist might only reach meaning being given a concept of science that allows for *self-description*. The point of Carvalho's communication was that a similar concept of science might be impossible if we only deal with the world and ourselves as *being* but not if we deal with them as *becoming*.

Taking the perspective of *becoming*, Carvalho distinguished between three basic

attitudes underlying science. He elucidated them using a metaphor in which the object of science was represented by the stream of water in a river. First, the *classic* scientific attitude corresponds to watching the stream from one of the banks. The second attitude is the *relativistic* and *uncertaintistic* one. It is represented by studying the stream from a canoe that is steered by the scientist and itself influences the currents that constitute the stream. All description then is relative to the canoe which is our point of view or coordinate system (Einstein) and our uncertainty is absolute (Heisenberg). Finally, according to the third attitude we are not floating in the stream but we *are* the stream. This attitude implies that describing the world we necessarily describe ourselves. It is associated with the *process idea* and the theory of the *dissipative structure* from the Brussels school with Prigogine who was awarded the Nobel prize for chemistry after he had shown that his theory accounted for apparent exceptions to the laws of thermodynamics.

A dissipative structure is an ordered system that is generated from a lower-level order into a higher-level order where beforehand was only chaos. Carvalho presented the audacious but exciting idea that world, meaning and observer (scientist) might be conceived of as complementary aspects of a dissipative structure. For instance, he suggested that the spatio-temporal world might represent the form of this structure (space) and the changes this structure undergoes (time) while 'meaning' would represent its function. The function, and thus meaning, would transpire into the logical organization of the above mentioned spatio-temporal form and the changes it undergoes (the behavior of the system). It was not clear yet where *we*, the scientists or the observers, should be placed. Carvalho considered the possibility of *we* being 'inside meaning' as 'meaning is inside the world'.

In spite of the preliminary and speculative character of some of the ideas advanced by Carvalho, they are worth taking into consideration because they rely on recent developments in scientific thought which presumably introduce a new paradigmatic shift that some expect to become a new Copernican revolution. Anyway, if Carvalho is right, a science that has the dissipative structure as its object is an avenue towards 'meaning' not only in the sense of 'significance' but also of 'signification'. Indeed, revealing the logical organization of the 'outside' spatio-temporal world, science may establish the signification of this world relative to its 'inside' function. However, the meaning established in this way cannot be epithetized as 'ultimate' because the dissipative structure to which it belongs is embedded in a stream of 'becoming' from which new structures of a still higher order may generate.

3. FROM MEANING TO SCIENCE

The way in which science contributes to our quest for meaning may not be simply reducible to science being a tool to produce or to disclose the meaning we are looking for. Perhaps science contributes more to this quest by being one of its preliminary achievements rather than by being a tool for it. This view was implicitly or explicitly present in the contributions of Maria-Luisa Silvestre and Jean-Biigtärma Zaongo.

3.1 *Silvestre: The relevance of meaning as an unattainable goal*

Referring to the Greek philosophical tradition Silvestre pointed out that philosophy originally originates from surprise. The search for meaning can be viewed as the human response to this surprise and this response has led to the establishment of philosophy and science as well. The surprise in question has existential value, and so has the corresponding search for meaning. Hence, Silvestre concluded, it is necessary to look for meaning, but not necessary to find meaning. It is evident that this necessity is not a logical but an existential one. Responding to the surprise and searching for meaning, we are realizing our nature. This view seems consistent with Carvalho's on 'becoming'. Both seem to imply that we may reach immediate meanings but never the ultimate one which, however, is always present as the horizon towards which we direct our steps.

3.2 *Zaongo: Science in the perspective of URAM*

When Silvestre stressed the search for URAM as a necessity she apparently had in mind an inner necessity connected with curiosity and surprise as fundamental features of the human nature. Also Zaongo stressed the necessity of a search for URAM but for him it was primarily a practical necessity connected with the development of science. As this development is accelerating and has even reached a point allowing for the extermination of the human species by a nuclear disaster, it may be a very urgent task to connect its further course with a perspective on URAM. The realization of this task would require an immense communicative effort involving not only philosophers and scientists but the entire humanity. Indeed, it would not only require interdisciplinary encounters between scholars, but also an exchange of information between scholars and non-scholars, inclusive of the people who are still illiterate. Hence the first step would be an educational one: spreading human knowledge and competence by alphabetization, instruction, good popularization, etc., together with a spreading of the resources necessary to realize this effort.

4. CONCLUDING REMARKS

Can science contribute to our quest for meaning, especially ultimate meaning? Considering the communications by Panco and Carvalho the answer seems to be negative if (a) we understand by 'science' the classic sciences the prototype of which is Newtonian physics, and (b) we understand by 'contribute' the realization of a genuine scientific contribution making of meaning an object of scientific investigation and discovery. However, as it was suggested by Carvalho, a new scientific paradigm may be emerging within which the search for meaning may be a genuine scientific endeavor. Furthermore, sciences may not contribute directly to the establishment of meaning, but they may do so indirectly. Indeed, meaning may be established by a reflection on the experience of ourself and the world in which we find ourself, and this experience is largely conditioned by science. Science does not only affect our experience of the world in that it changes this world by technology but also by the theoretical models it provides. The way we experience our existence and accord meaning to it may indeed be quite different depending on whether we conceive of our world either as a relatively small flat

pancake enclosed by supernatural spheres, or as an immense clockwork within which we function as little wheels, or as an explosion of energy within which we are generated as turbulences or 'dissipative structures'.

Finally, when dealing with the connection between science and meaning, we should consider that science itself might be a product of our search for meaning. Indeed, as indicated by Silvestre, science has evolved from philosophy which in turn evolves from surprise as a fundamental existential feature of man. As philosophy, science attends to the questions that arise from this surprise and at the same time feeds the surprise by generating new questions. In this way science has metaphysical significance: it contributes to the realization of our existence and to our experience of that existence as meaningful. In addition, science does not only have metaphysical significance but, because of its connection with technology, also practical significance. As Zaongo pointed out, this practical significance requires us to put science into the perspective of a search for ultimate meaning. Indeed, science has become so powerful that it enables man to steer his evolution including the possibility to destroy himself. Hence, a perspective of URAM is required in order to determine the direction in which man should steer.

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