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***Pontifical Academy of Theology***
***Cracow***

*Joseph Życiński*

# THE NON-TRIVIAL CHARACTER OF THE WEAK ANTHROPIC PRINCIPLE

In contemporary debates on the status of the Anthropic Principle, the Weak Anthropic Principle (WAP) appears noncontroversial from the standpoint of the natural sciences. It states that the observed values of physical parameters belong to the small set of values required for genesis of carbon-based life [1, p. *15],* ***WAP*** *is evidently free of the strong* metaphysical assumptions underlying either the Participatory or the Final variant of the Anthropic Principle. Its critics, however, when trying to question its philosophical significance, argue that WAP is trivial; the very fact of our existence implies that these parameters assume the values necessary for the emergence of carbon-based life. In this approach, stronger versions of the Anthropic Principle could by philosophically significant, but they are physically unfounded; WAP is physically justified but philosophically trivial.

Calling into question the apparent triviality of WAP, I would like to emphasize that in the growth of science a very important role is played by discoveries that, under a certain interpretation could have been regarded as trivial. The very notion of cognitive triviality turns out to be relative to an adopted system of knowledge. The fact regarded trivial in system Sj may not by necessarily trivial in another system S2- The identity 'Morning Star = Evening Star' appears trivial for us; it was, however, scarcely trivial for astronomers of ancient Babylonia. The apparently trivial identity 'Everest = Chomolungma' appears information-laden when we regard its extra-linguistic aspects.

In the context of medieval cosmology the darkness of the night sky seemed at the same time natural, trivial and unimportant for scholarly research. In the 19th century what was previously trivial became paradoxical when H. W. Olbers pointed out that the enormous number of stars evenly distributed in space should result in uniform luminosity of the night sky. After the formulations

 of the famous 'Olbers paradox' the allegedly trivial fact became mysterious and

paradoxical. One century later, when the expansion of the Universe was discovered, one could have explained the paradoxical darkness of the sky by referring to the red shift effect which weakens the light of distant objects. Thus any claim of cognitive triviality (or paradoxicality) of particular physical phenomena presupposes a body of knowledge adopted, at least implicitly, in interpreting the given facts.

The shift in assessment of the possible triviality depends not only on the growth of scientific knowledge but also on epistemological distinctions characteristic of different disciplines at the same stage of research. The equality 'a = a' can be regarded trivial from the standpoint of classical logic. Nonetheless our possibility of determining similar equalities in the domain of the actual certainly possesses non-trivial ontological aspects. Every process of scientific identification implies equation 'a = b' which is trivial in certain respects but at the same time important in its empirical content. The latter depends on identity of two physical designates A and B that previously seemed distinct. Such an identification could be regarded trivial only if in the context of scientific discovery it was originally self-evident that A = B. It cannot be, however, called 'trivial' when we successively discover that ad = c b, and d = c, thus a = b.

What does it mean that WAP is both self-evident and trivial? Such an assessment is formulated in the system of knowledge in which, regardless of recent cosmological discoveries, one refers to the body of common-sense knowledge. In this frame of reference, it is obvious that if a carbon-based life emerged in the past evolution of the Universe, there must have existed physical conditions for such emergence. What precisely 'must' means was never discussed in this common-sensical approach. If we consistently practice such an approach, we could trivialize any actual fact arguing: 'If F is actual, it is trivial that it must have happened'. Such a notion of cognitive triviality cannot be, however, regarded as an invariant independent of the adopted system of knowledge. The growth in both philosophy and science is possible due to our discovery of the amazing content in these facts that earlier appeared trivial.

It is easy to documentate that the astonishing correspondence in the set of independent physical parameters, the correspondence ascertained by WAP, is far from trivial for those cosmologists who study the physical conditions of the evolution in the early Universe. Continuous attempts at causal explanation of this correspondence remain still unsuccessful. A trial undertaken by Collins and Hawking involving a backward causation in which the observed 'isotropy of the Universe is a consequence of our existence' [2, p. 317], has been justly called both substantively unfounded and intellectually irresponsible by W. L. Craig [3, p. 392]. Consequently, the common-sense trivialisation of WAP does not imply its absolute trivialisation. The present discussions on the physical preconditions

of the amazing coincidences ascertained be WAP disclose its deeply non trivial character.

We cannot exclude the possibility that the future growth a cosmology will bring on the discovery of physical determinant underlying the coincidences that are important for WAP. After discovering a hitherto unknown law L reigning in the early stage of cosmic evolution one could argue that WAP is cosmologically trivial since its content can be explained on the basis of this newly discovered law. In such an approach, what is amazing any fascinating in the body of present science would be nothing but physically necessary consequence of the laws of nature known to future science. WAP would be really trivialized in this framework, since one could argue then: On the basis of the laws L, the Universe must have those properties which allow life to develop within in at some stage in its history.

The statement declaring The Universe must have those properties which allow life to develop' precisely expresses, however, the content of the so-called Strong Anthropic Principle [1, p. 210]. Owing to the presence of the enigmatic "must have' in the proposed formula, this version of the Principle is regarded today as metaphysics-laden and physically unfounded. If (and only if) the future growth in cosmology goes in the suggested direction, WAP can be really regarded physically trivial. Nevertheless, philosophical discussions dealing with the Strong Anthropic Principle would be then focused upon the same questions that are discussed by contemporary opponents and supporters of WAP.

## REFERENCES

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