

SHORT COMMUNICATION

The Importance of “Nothingness” in Empirical Science – a Hypothesis

Wolfgang Lederer

Department of Anesthesiology and Critical Care Medicine, Medical University of Innsbruck, Austria.

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Corresponding Author: Lederer W. Medical University of Innsbruck, Department of Anesthesiology and Critical Care Medicine, Anichstr. 35, 6020 Innsbruck, Austria.

Abstract

At first glance it may appear strange why “nothingness” should be of any importance in the systematic accumulation of knowledge in empirical science. It contributes to the fuzziness of general language comprehension when “nothingness” is equated with “non-existence.” Confusing non-existence with non-observation leads to the wrong conclusion, namely that only that which can be observed can exist. Such a conclusion would reduce our experienced reality to that which we perceive through the sense organs. It is commonly accepted that the results of scientific investigations should be testable, reliable and reproducible. Accordingly, we may easily overlook the fact that our knowledge is based indirectly on our impression of an image of reality and not directly on reality itself. Models where “nothing” (the not observed) seems more important than “something” (the observed) indicate the narrowness of scientific observations. There is a need to reconsider the dimensions of the non-observable reality and the non-anticipable reality.

Keywords: Empirical Science, Medical Philosophy, Observability, Ontoplasma, Reality Perception, Reality Anticipation, Scientific Evidence.

1. Introduction

Science significantly influences all aspects of life in modern societies in general. In particular it contributes to progress and development of life quality, health, nutrition, economy, security, justice and education. However, science creates divergent perspectives and it depends on the implementation of scientific findings whether generated solutions are beneficial or detrimental to society. The focus of the essay is the philosophical background of empirical science. It is a matter of debate whether the real world exists independently of human perception and observation or not (Bhaskar, 2008). Scientific progress goes along with an increasing certainty of evidence (Popper, 1994) but error, contradiction and reversal are common in science and medicine (Coccheri, 1997). This commentary deals with conflicting ideas of scientific evidence and its impact on our current perspective of nature.

2. Methodology

Applying critical analysis I made a judgement on the quality of evidence in empirical science. The method was descriptive and I used both, sequential and non-linear thought for analysis. In this essay I wanted to identify and analyze the importance of “nothing” as compared to “something” in empirical science, similar to the special position of the zero within a group of equivalent numerals. This dichotomous system of sharply opposed elements was also reflected in the importance of silence in a world of noise, the meaningfulness of non-verbal communication in our daily inundation with words, the significance of thoughts hidden behind rational thinking, and the magnitudes of space as compared to the relatively small mass of all particles in an atom, to mention just a few metaphors for the dichotomy between “nothing” and “something.” The final analysis was summarized in a concluding paragraph.

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3. Results and Implications

3.1 Observability

Observability sets the stage for the common divergence of interpretations in conventional scientific discussions. Observation influences results. Frequently, the common link between observed differences and similarities is the observer himself. It may even happen that the interpretation of a result is more decisive than the result itself. While the certainty of scientific evidence depends on the approach employed by the individual researcher, the validity of significance is incumbent on the scientific community. At the broader level of population policy the context of evidence-based decision-making may become even more uncertain, variable and complex (Dobrow et al., 2004). Scientific investigation will always produce results that meet one person's expectations while concomitantly disagreeing with another person's point of view (Lederer, 2023). For instance, in health care the prolongation of life (survival) and an increase in quality of life may be classified as successful treatment outcomes, but are not at all comparable in terms of the consequences for the patient.

We do not know the ideology, value system, and personal preferences of individual researchers (Adorno, 1993). When the meaning of a process escapes the reader, it is sometimes helpful to ask: "Who does it benefit?" (derived from the Latin phrase "cui bono?"). Although this might not always explain the causes of origin, it at least helps to understand the causes of perpetuation. Publication in a scientific journal makes a point of declaring any conflicts of interests. It is commonly agreed that the profitableness of a study is justified as long as it is disclosed as a limitation. Its usefulness (utilitarian approach) may be justified as well, as long as advantages are given for both sides. It stands to reason that an investor is interested in a study producing certain results. Open scientific debate is no guarantee for objectivity as the consciousness of the scientific community can be manipulated by third parties as well. Although conflicting ideas and discussions count among the fundamentals of scientific progress, sub-groups of general society, organized in lobbies and insider relationships, may reach a majority consensus in research topics studied by these sub-groups. Furthermore, nonlinear thinking operates with connections between seemingly unrelated ideas (Rimban, 2023) and may give the impression of thoughts that are hidden. However, even rational thinking is ambiguous.

3.2 Measurability

The doctrine that the real world and the physical world are identical (physicalism) and the recognition of only scientifically verified facts (positivism) indicate measurability as determining domain of expressing the outcome. Zhao reported that "realized existence" is the precondition for measurement, which in turn is the precondition for validity (Zhao, 2023). This does not necessarily mean that "non-realized" is the same as "not existing." We are influenced by unknown and unnamed elements beyond our conscious experience. It would be quite unsophisticated to conclude that realization depends on observation and measurement alone.

There is an anecdotal saying attributed to Mozart (<https://beruhmte-zitate.de/zitate/1960498-wolfgang-amadeus-mozart-die-musik-steckt-nicht-in-den-noten-sondern-in-de/>), namely that the music is not in the notes, but in the silence between the notes. But how to measure silence? While sound intensity can be measured in a graduation of physical units (e.g. phon or dB), relative silence can be estimated using the inverse scale of sound intensity, with absolute silence being 0 dB. From this it follows that silence as the experienced nothingness of sound in a world of noise is important, but it must be remembered that the audibility of sounds differs between individuals and species and detectability of sounds differs between methods.

In contrast to silence, non-verbal communication can be quantified by verbalization and measured in ordinal categories. The inaccuracy of subjective assessment caused by paraphrasing and standardization of responses is known and accepted in social science. In communication the sequence of thought is important and the individual word gains importance mostly in combination with other words. Amazingly, when memory is impaired, as occurs with Alzheimer patients, the non-verbal communication conveys more than the verbal communication.

3.3 Anticipability

While observation appears to focus on the surface of objects, anticipation may additionally regard the nature of the object. Anticipation contains all the anticipable potentials in an imaginable image. In this context reality is seen as potentiality and not as objectivity. Reality (based on the Latin word for object "res") is merely articulation, similar to a human footprint that is not the human being who left it. Reality is

the anticipation prior to the occurrence of a thought (Dürr, 2012). Anticipation disappears as soon as the specific thought occurs. Assuming that the origin of everything is the verbalized thought, then experienced nature can be anticipated as spirit manipulated by human consciousness. However, both spirit and anticipation adhere to the laws of matter (Dürr, 2012). Anticipability appears to be less restrictive than observability. Presumably, anticipability depends on the intellect and fantasy of the individual researcher and of the community of researchers more strongly than does observability.

Classical physics deals with the external view of the world. In the physical world of matter and antimatter we find ourselves at the limits of observability, measurability and imageability. Here we must make do with hypotheses based on anticipations. The atomic model is based on the theory of the world as matter. The ancient anticipation that matter is composed of small particles that cannot be further split into sub-particles (based on the Greek word for unsplitable “*atomos* (ἄτομος)”) was originally postulated by Leukipp and Demokrit approximately 400 BC. However, when considering the small quantity of matter within an atom and the relative magnitude of space, the “nothing” again seems to be more important than the “something.” Elementary particles have characteristics of particle appearance as well as of wave appearance. The hypothetical combination of matter (particle) and a-material construct (plasma) could satisfy both properties of particle and wave appearance. Basically, an arrangement as a kind of form such as plasma is more fundamental than matter (Dürr, 2012). In the understanding that imagination precedes empirical proof I dare to postulate that what appears as an impending wave of elementary particles can be explained as non-observed but anticipable plasma. The two different characteristics of elementary particles, namely particle and wave appearance, can be explained by the characteristics of a hypothetical ontoplasma (ὄντωπλάσμα). A form such as that defined as ontoplasma would fulfill the criteria of particle-wave dualism without interfering with the characteristics of an element.

4. Conclusion

Observability and measurability are important properties of empirical science but important domains of anticipability remain unconsidered. Evidence based on observation, induction, deduction, testing and evaluation supports the notion that what

cannot be observed does not exist. The philosophical perspective of evidence based science ignores the fact that our experienced reality is beyond our observed reality. This is why it may appear that the “Nothing” is seen to be more important than the “something.” When increasing the scope of scientific investigations the dimensions of the non-observable and the non-anticipable aspects of our experienced world have to be reconsidered.

Competing Interests

The author has no conflicts of interests to declare including financial, consultant, institutional and other relationships that might lead to bias or a conflict of interests.

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