

# PHILOSOPHY & HUMAN SCIENCE

## The Parameters of a Realism that Confronts Anti-Realism

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### Abstract

We discuss a theoretical notion that confronts *anti-realism*. For the sake of semantics, we call it *anti-anti-realism*. We offer argumentation in favour of realism and developed against any forms of *anti-realism*. This argumentation has been inspired by Wittgenstein's philosophy of language expressed in his *Philosophical Investigations* and by the modern natural sciences. We demonstrate that if they were not to accept the postulate of realism, those who practice any science and particularly those who make scientific forecasts would find it impossible to proceed.

### 1. Realism, for our purposes, is anti-anti-realism<sup>1</sup>

Tanzania, The notion of *realism* has a distant historical origin. There are few human beings who have understood it explicitly. Those who have subscribed to the notion of realism have used the term in opposition to what is *ideal* or what is *unreal*. Realism finds its basis on the assumption of a mind-independent existence of not only the concrete specimens but also of universal beings. In the

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<sup>1</sup> The term "anti-realism" is related to the term "anti-irrationalism" given by K. Ajdukiewicz because our intentions are similar to his. In the case of realism, like that of rationalism, it is easier to show its negative designations than to give its comprehensive definition.

dispute about the universals, the realists acknowledged the real and independent existence of abstracts, i.e. of universal “entities”. In our day and age, discussions about realism take place in the context of a dispute realism vs. instrumentalism, and of realism vs. anti-realism.

In the context of the controversies that pit dispute realism vs. instrumentalism, the parties to the discussion focus on theoretical objects. There are appropriate theories that postulate the existence of these theoretical objects. This approach can be called scientific realism whose “natural” opponent is instrumentalism<sup>2</sup>. Typically there are those who formulate numerous moderate positions which occasion discussions at a variety of levels, in a maze of contexts, and with a number of refinements that all concentrate upon the debate between dispute realism vs. anti-realism (or instrumentalism). Consequently we find ourselves in a situation where the approach to the issue of the cognitive status of scientific knowledge is at one time qualified as realistic and another time as anti-realistic whereby some versions of realism differ more from each other than they do from some versions of anti-realism.

Instrumentalism – or as scientists refer to it, “anti-realism” – operates on the assumption that scientific theories are tools that serve as statements for observation that are to be associated with each other, systematized and readied for ensuing calculations that, in their turn, enable the forecasting of the occurrence of determinable events depicted by the observation statements. Those who use this approach do not consider the problem concerning the existence itself of theoretical entities that match the designata of theoretical notions or the problem of issues related to the description of truth or reality.

For the advocates of constructivism – another name for realism – the most important feature of science is its ability to create theoretical structures that enable the conceptualization of the available experimental data. The advocates of both the realistic and the anti-realistic approach to the philosophy of science may follow

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<sup>2</sup> In this paper instrumentalism will be perceived as an extreme version of an anti-realistic attitude. We will use the term “anti-realism” to comprehend all the attitudes that oppose realism.

the "constructive" option in regard to their approach to science. The adjective "constructive" implies that scientific activity consists in "constructing" rather than in "exploring". Since Karl Popper's time a number of realists have stressed the "creative" elements of scientific activity. The basic difference between the constructive realists and the advocates of constructive empiricism – the anti-realists – consists in the method for determining the cognitive status of the theoretical models that science constructs. Realists analyse the relationship between a theoretical model and the real system, whereas the advocates of constructive empiricism consider its empirical adequacy, that is to say, its conformity to phenomena.

An apt metaphor determining the function of anti-realism within science is the definition of constructivism presented by W.V.O. Quine:

The sense [of constructivism] ... can be ... defined as a practice, project or policy of mathematizing with one's hands tied (1987, 57).

The reproach of anti-realism formulated against classical scientific realism is that "the culprit," that is to say, scientific realism is responsible for an infeasible attempt to view the world from an external perspective. Some authors suppose that in view of the existence of a number of realisms that differ from one another in practically every detail there *only* exist various types of realism, whereby it should be kept in mind that such an expression is by no means non-problematic. The question remains whether there exist any common theses acknowledged by particular realisms. For example, John Newton-Smith asserts:

The word *realism* means a large number of approaches to the philosophy of science. All of them acknowledge a certain common minimum, i.e. that all the statements of science are either true or false whereby the truth is understood in terms of the classical theory of truth. (1981, 27-28)

The opposition of realism versus anti-realism appears when the conditions for truth are considered with regard to theorems – to statements or opinions – that describe reality. Unless they are associated with instrumentalism which, as mentioned above, is often perceived as a stronger attitude, the followers of the anti-

realistic approach assume the existence of a reality whose nature is determined somehow by a mental state of the cognitive subject, his knowledge, his language, his preferred notional system, and so forth. According to realists, the truth of a statement depends on the cognitive abilities of the knowing subject. These abilities are methods of statement verification. Consequently, according to this understanding, the truth is understood to be an epistemic notion that depends on the cognitive abilities of the subject, contrary to the classical truth concept whereby what is stated as truth does not depend on the fact that anybody confirms or recognizes this truth at any time.

## **2. Michael Dummett, one of the key theorists of the so-called semantic anti-realism position ...**

... a position that avoids any declarations in favour of verification-transcendent truth conditions, presented his doctrine in the following manner:

I characterize realism as the belief that statements of the disputed class possess an objective truth-value, independently of our means of knowing it: they are true or false in virtue of a reality existing independently of us. The antirealist opposes to this the view that statements of the disputed class are to be understood only by reference to the sort of thing that we count as evidence for a statement of that class. (1978, 146)

For an anti-realist, the apprehension of a statement is based on knowledge, which is sufficient evidence for the statement to be acknowledged, whereas the truth of the statement may consist only in the existence of such as evidence. The anti-realistic attitude acknowledges a statement to be true without the need to assume that the statement refers to reality, which exists regardless of the cognitive ability of the knower. Dummett “cancels” the assumption of the objectively existing reality. Hence:

Dummett’s anti-realism is in accordance with idealism in the sense that it does not assume the reality described by a true statement, i.e., one which is in accordance with reality, to be independent of the mind that finds this conformity. (Van Frassen, 1980, 9)

### 3. When reconstructing the realistic approach, Bastian van Fraassen writes about the literally true description...

... and says that the anti-realistic approach can call into question: (i) the possibility of a literal description, or (ii) the possibility of a true description. The title of van Fraassen's work, *The Scientific Image*, makes reference to the distinction between *the scientific* and *manifest image* introduced by W. Sellars, i.e. the scientific and the explicit image of the world. According to W. Sellars' scientific realism, the reasons in favour of any scientific theory are also in favour of the existence of objects postulated by it and are to be acknowledged. Meanwhile, according to van Fraassen, realism means the view "that the goal of science is to provide the literal and true report on the world by means of its theories; and the acknowledgment of a scientific theory assumes the belief about its being true." The concept of constructive empiricism that he presents offers the indication:

... that the goal of science is to provide us with empirically adequate theories; and the acceptance of a theory assumes the belief only of its empirical adequacy. ... A theory is empirically adequate if it is true in respect of the observable objects and events. (Van Fraassen, 1980, 17)

In van Fraassen's opinion the acceptance of a theory does not require the belief that it is indeed true. Acceptance, rather, is connected with involvement in a determined research program, i.e., with the tendency to comprehend any future events by means of the notional tools that are appropriate for that theory.

In view of the above controversies that we are facing in contemporary disputes about realism it could be worthwhile to present the list of discrepancies:

Realism	Reality coincides with what we think of it
Anti-Realism	Reality does not coincide with what we think of it
Realism	Truth is not defined by means of epistemic terms

Anti-Realism	Truth is defined by epistemic terms
Realism	There is the risk of scepticism
Anti-Realism	There is no risk of scepticism
Realism	The principle of the excluded middle is accepted <sup>3</sup>
Anti-Realism	The principle of the excluded middle is not accepted
Realism	Truth conditions explain meaning
Anti-Realism	Verificationist conditions explain meaning

Cognition of reality is usually identified as realism's true description. A principal contemporary dispute between *realists* and *sceptics* is focused on the issue whether such a truthful description is possible. Even the notion of such a description brings a number of difficulties. Interfacing theory and reality for the purpose of determining the adequacy of the theory proves to have a number of traps hidden within it.

Finally, we have to do with two alternative theories of truth, i.e., coherence and correspondence theories of truth. None of the traditional, often called naïve, formulations can be regarded to be satisfactory. Most generally, it can be said that, according to coherence theory, the truth is everything that can be placed within a logically consistent system. According to correspondence theory, the truth is everything that accords with reality. The bold formula of coherence theory is based on a rather complex rational matrix according to which there exists only one logically consistent distribution of confirmations and negations in an indefinite set of possible conceptions. According to W.V.O. Quine:

... when we get rid of unnecessary details, the significant contrast between correspondence and coherence theories would consist in the fact that the first one stresses the relationship between a true statement

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<sup>3</sup> The principle of the excluded middle states that, for any proposition, either that proposition is true or its negation is true. There is no middle possibility. (Ed.)

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and the entity it refers to, e.g. white snow, while the other stresses the relationships between true statements and other statements ... If we consider coherence and correspondence properly then it turns out that they are not rival theories of truth but they constitute its complementary aspects. The coherence aspect is related to the way of reaching the truth in an ideal case. The correspondence aspect is connected with the relationship between the truth and the entity to which it refers. (1987, 59)

#### **4. The approach recommended in this present paper can be called a radically realistic one**

It opposes both realism and anti-realism as each of them is based on the supposition of the existence of one world.

Science is unable to devise a thesis which is not true in a certain world. At most, it can be a truth that is useless for us. But it is not a reason to deprive such a thesis of the quality of being true. It is only a reason to refuse the will of fully disinterested cognition. (M. Levin, 1990, p. 115)

When defending realism – or for that matter anti-realism – it is necessary to keep in mind the linguistic principles in the field of semantics, i.e. not every sentence makes reference to a certain possible situation. For example, a sentence may happen not to denote anything when the semantic system of the given language is defective. Every language, including the language of scientific theories, is shaped in such a way that it matches the ontology assumed by its users and not necessarily to the ontology of the real world.

Let us point out that such an important anti-realistic category as that of the scientific activity of experimenting assumes more or less explicitly a kind of reference to an extra-subjective reality. It is similar with van Fraassen's postulate that replaces the truth – conceived as an exceedingly ambitious and unnecessary cognitive goal – with empirical adequacy.<sup>4</sup> Certainly, an anti-realist could

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<sup>4</sup> It is to be noted that God is not an interlocutor in this discussion about the truth. If one were to accept the data of divine revelation as necessary constituents of the discussion, the perspective on the question of truth would change radically. For the place of divine revelation in philosophy's quest for

protest saying that we can never know to what our theories are referring. The lack of such knowledge does not preclude the fact of the existence of such a relationship. You may not be able to determine the answer to one form of question, e.g., Is the wave theory of light true? But you may be able to ask another question that spotlights more or less the same objective and yet is more amenable to an answer: Which empirical situations are reflected adequately in the formulation of the wave theory of light?

In order to be a realist it is sufficient to demonstrate the following position: if we systematically observe the same events or situations in any given set of circumstances, then the “identity” of the observed things constitutes an objective feature of those situations.

Making reference to Plato’s allegory of the cave it can be said that the shadows seen by the prisoners are the objective representations of realities even if they gravely lack certainty.

From our personal vantage point as authors of the present essay, the postulate of realism in any of its versions is a necessary condition for science to exist. In other words, anti-realism cannot be defended as an antidote to realism when one considers theses already formulated that relate somehow to reality. In still other words: when we consider realism as a position that explains how it is possible for science to explain particular phenomena, and then on the basis of that explanation, proceed to forecast the occurrence of a future event or situation based on the explanations we have asserted, anti-realism’s position must be suspected. When the forecast is accurate, it becomes gravely doubtful that the explanation of this particular scientific achievement can find its ground in instrumentalism. In other words, it must be a conundrum for an anti-realist to answer the following question: how is it possible to forecast anything if the designata of the appropriate notions intrinsic to the theory of science do not comply with reality?

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the truth, see. E. STEIN, *Knowledge and Faith*, Washington, DC: ICS Publications 2000, 17-18. (Ed.)

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We know of no research program or project based on anti-realism that would result in “empirically adequate” discoveries in the field of nature studies. This is one of the key arguments against anti-realism.<sup>5</sup> Unfortunately, it is an argument formulated in order to persuade: hence it cannot be regarded as conclusive in its cognitive purity.

We become convinced that the position of realism is correct in respect to some pre-determined objects when checking the evidence and supporting arguments aimed at verifying particular statements about those objects. General sceptical arguments concerning theoretical subjects, on the other hand, are less convincing than, e.g., the evidence in favour of DNA actuality.

Evidence of actuality is derived from a strong conformity of interdisciplinary results; their strength results from their diversity and the fact that they have endured practical testing in different fields of science, which are often distant from each other. It is an exaggeration to expect any universally useful arguments in favour of scientific realism in general... Discovery and confirmation of the existence of chemical elements, chemical atoms or even subatomic particles provides, contrary to the opinions of notional anti-realists, the [realistic] example of ontological progress. (Burian, 1995, 198)

What exists in the world does not respect any disciplinary boundaries of particular sciences: this is one of the indicators that a thing really exists.

It is clear to me that what I have just presented is not comprehensively conclusive; however, it has some persuasive value and we personally share the opinion of R. Wójcicki, who suggests that there is not much more to be achieved in this matter.

Defence of realism (it is similar with relativism) may only consist in showing that this doctrine allows to create a consistent concept of knowledge and regularities occurring during its development.

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<sup>5</sup> This argument is called *success of science argument* in methodological literature.

Accordingly, it can be announced with becoming involved in discrepancies. (Wójcicki, 1991, 3)<sup>6</sup>

Realism, like everything beyond the boundaries of logic, can neither be proven nor rejected, because no event or experience can be found to be so all-embracing that it becomes a conclusive rejection of realism. It is similar with idealism, which nowadays takes the shape of anti-realism. Almost all physical, chemical, and biological theories imply realism in the sense that if they are true then the notion of realism upon which they are based must also be true. If we omit the arguments in favour of realism that are gleaned from science, there remain the arguments of language, which are often used by anti-realists who forget some of realism's important features. Each discussion about realism, especially all the arguments against it, must be formulated by means of a language. A language is descriptive in nature: an unambiguous description is always realistic. It speaks of something, about a certain state of events that is clearly distinguishable as real or imaginary. According to Tarski, if the thing or event is imaginary then its description is false and its negation must be a true description of reality. Certainly, it does not abolish idealism, solipsism or anti-realism but it at least neutralizes them. Rationality, descriptive language, evidence - all this is related to a certain actuality and to certain recipients. Rejection of realism "is a megalomania – the most frequent illness of professional philosophers" (Popper, 1972, 152).

Anti-realism should be regarded as a call for intellectual vigilance and not as a readily-established doctrine that one accepts or rejects.

Finally, a quotation that anchors the philosophical task in the fundamentals:

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<sup>6</sup> For a realism-based comprehensive analysis of schemes of recurrence, concrete judgments of fact, probable judgments and the link between common-sense judgments and empirical science, see B. LONERGAN, "Reflective Understanding", in *Insight: A Study of Human Understanding*, New York: Philosophical Library 1958, 279-318. (Ed.)

Accepting the principal value of truth, we do not have to assume any certain or full capability of its realization within created knowledge. **Truth underlies all cognitive values.** If a person is striving for certainty, then it means he is striving to reach the truth. If he strives for the accomplishment of any given program of rationality, then it means he wants to find an effective way to achieve the truth. When analytic philosophers consider clarity to be the main goal of their philosophical and logical analyses, they are striving to work out and refine some cognitive tools aimed at the achievement of the truth. When the advocates of coherence theory stress the cognitive role of the logical principle of non-contradiction, they are striving to put in order such a compact system of conceptions that falsity would be easy to recognize and to eliminate. Although the advocates of coherence theory do not undertake the task of defining the truth – indeed such a task is infeasible if one remains exclusively within the order of logic – they nevertheless strive to refine an effective tool in order to remove falsity, i.e., in order to remain exclusively within the truth. (Trela, 1997, 83-84)

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