by Jure Zovko

Constructive Empiricism vs. Naturalism

A conversation with Bas van Fraassen[1]

1. Your beginnings of philosophical education are related to the reading of Plato's *Phaedo* in your early youth. David Gallop, in his famous commentary in *Phaedo* (99e ff), sees a significant paradigm shift from the study of the mechanical causes of things to their teleological structure, laying the foundations of European science for the next two millennia. Because of the paradigm shift, the so-called "flight to logoi" (καταφυγή εις τοὺς λόγους), Plato is often regarded as one of the first philosophers of science who sought to establish scientific instrumentalism (Pierre Duhem). American Platonist Harold F. Cherniss (1904-1987) believed that the purpose of escaping to logoi was to save phenomena, i.e., to explain them adequately by using unchanging ideas. The Neoplatonist Simplicius (490-560 CE) attributed to Plato the famous request to save phenomena (σῴζειν τὰ φαινόμενα). One of your main ideas is to save phenomena with the help of adequate theories, what impact does this topic have in your philosophy of science?

   Yes, reading the *Phaedo* when I was 17 turned out to be a life-changing event for me. This dialogue gave me a view of philosophy as an activity of mutual critique and dialogue, where everyone had the right to stand up and argue their side. Much in the dialogue left me puzzled at the time, and I have realized since that this was in part because I assumed that Socrates had to be right.
   Pierre Duhem, in his *To Save the Phenomena*, does quote Simplicius as saying that it was Plato who gave astronomers the task of constructing a geometric model that would fit the observed planetary motions, that is, to save the appearances. I did not come across this attribution until much later. The impulse toward an empiricist view

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of science came for me, in the first two years of college, from Bertrand Russel and Hans Reichenbach. It does seem to me that *to save the phenomena* is still a good way to describe the main task for the sciences, though there are many other, pragmatic, aims that are also to be served.

2. One of your teachers was also Wilfrid Sellars, author of the critique of the "Myth of the Given". Following Kant, Sellars criticizes the myth of the given and argues that there is no objective description of facts that is completely independent of our subjectivity and mental states, as the proponents of empiricism, scientific realism, and logical positivism assume. Do you feel your empiricist constructivism is also impacted by Sellar's critique?

   Wilfrid Sellars' seminars and his writings had an enormous impact on my thinking, as it did, I believe, on all his students. When I was still his student, in the mid-sixties, I was critical of his scientific realism, but it took about ten years before I found good ways to formulate an effective critique.
   Empiricism had a past full of mistakes (and there is a tendency to identify a tradition with its past mistakes!). For me, the task was to think about what empiricism could be, after Sellars' exposition of such mistakes as the Myth of the Given. There were similar lessons to be learned, at more or less the same time, from Norwood Russell Hanson, Paul Feyerabend, and Thomas Kuhn. What I needed became clear to me in the fall of 1974, on sabbatical, traveling around North Africa with a car and a tent: a contemporary way to give an account of science as saving the phenomena.

3. You defend a version of antirealism, which you called "constructive empiricism". Could you briefly recall what it is?

   What is referred to as realisms and anti-realisms are typically positions in metaphysics, views of what there is and what the world is like. The empiricist tradition has always shown itself in rebellion against any systematic metaphysical theorizing, of any sort. So when I wanted to take on scientific realism, I wanted first of all to change the context of the discussion: to restate the question at issue as not about what nature is, but about what science is. An answer would have to specify, first of all, what is the aim, in the sense of the *telos*,

to identify the criterion of success, for this enterprise. And since the main product of the enterprise is theories, it would also have to say what constitutes acceptance of a scientific theory.

As I understood scientific realism, as it was presented by philosophers such as Sellars and Putnam, its answer was: *Science aims to give us, in its theories, a literally true story of what the world is like; and acceptance of a scientific theory involves the belief that it is true*. Against this I offered the view I called constructive empiricism: *Science aims to give us theories which are empirically adequate; and acceptance of a theory involves as belief only that it is empirically adequate.*

4. According to constructive empiricism, it is recommended to take an agnostic stance with respect to the existence of unobservable entities such as electrons, protons, genes, viruses, etc. Doesn't such an attitude foster a negative vision of science? Could it contribute to discouraging young people to study science? Could it even promote a hostility to scientific assertions such as that vaccines are efficient?

   That is a misinterpretation. The view is, in part, that acceptance of a scientific theory, whatever else it involves (such as practical commitments), the only belief it involves is that the theory is empirically adequate. So it does not involve the belief, for example, that such postulated entities as electrons really exist. But a person may have many other beliefs, in addition to those involved in acceptance of the theory. From this view, it only follows that such views are *supererogatory*. My epistemology is voluntarist. It is not irrational, in itself, to have beliefs that go beyond the evidence, to have any beliefs at all that stay within the bounds of rationality. But I would say that if someone shares this empiricist view of science, the motivation to form such 'realist' beliefs would tend to disappear. (As to vaccines, I would urge one to look at the empirical evidence, at the statistics that bear out the theory, and get vaccinated!)

5. You share the view with Nancy Cartwright that our reality cannot be explained by Hempel's covering law model. You also point out, like Cartwright, that our world is the dappled world, the laws that describe this world are a patchwork, not a pyramid. You claim that we have to learn to live in a dappled world. How is that possible

without covering models of law that should serve as points of orientation in our reasoning?

Nancy Cartwright's work has been very important for me, all the way back to when we were both students in Pittsburgh. On the subject of laws, let us not forget that Hempel was an empiricist, of the quite radical positivist stripe, and did not support a metaphysical concept of laws of nature. Carnap, Hempel, and Reichenbach all tried hard, though without much success, to give some explication for the notion of law that would meet their philosophical scruples. In offering his covering law model of scientific explanation, Hempel meant to refer to well-established regularities rather than necessities in nature. And certainly, well-established regularities are guides for us in this world full of uncertainty. What I would add is that the attempt to give an empiricist content to the notion of a law of nature was bound to fail, if it had to meet the criteria that have traditionally characterized that concept. Nancy Cartwright's *How the Laws of Physics Lie* makes clear that what is typically referred to as laws of physics does not meet those criteria either, and is not meant to do so.

6. Your science-philosophical position in your book *The Empirical Stance* (2002) is that in the explanation of our reality and our life world we should not use theories and dogmas but "stance": "experience is the one and only source of information" (ES 43). The problem remains how to systematize the derived forms of knowledge we have received through experience. You tend to disavow any scientific system as dogma. How do you deal with the analyzing, critical subject that interprets reality and experience?

   The question for me is: *what can empiricism be now*? As I mentioned above, empiricism tends to be identified by its past mistakes. One of those mistakes is to equate empiricism with belief in the thesis "experience is the one and only source of information". If we add to this some other convictions that have been part of the empiricist tradition, and specifically its rejection of metaphysics, we arrive at a contradiction. So what can empiricism be, if cleansed of this mistake? The thesis in question was meant to be a foundation for epistemology, and indeed, for what we call a foundationalist epistemology. If that is to be rejected (as I am convinced it must be) what epistemology can we develop instead? In *The Empirical Stance* and

elsewhere, I have tried to make contributions to that development, of an epistemology for an agent/subject thrown into this world, with no solid foundations to stand on.

7. Could you tell us how you manage to avoid what you call "debilitating skepticism"?

   There is something to be learned from Bayesian epistemology. The orthodox Bayesian places no constraint on a person's initial opinion, except coherence. All the constraints go into how that opinion is managed, how it is changed in response to experience. If a person initially finds it unlikely that vaccines are effective, that is not irrational, the question is just how she will amend that opinion in view of the evidence. But we have nothing at all if we do not take some initial stand, if we do not stick our neck out by forming firm opinions in the first place. In that respect, this epistemology can be read as voluntarist. And here I say: right, it takes courage, it requires taking responsibility on our own shoulders, it takes a will to believe. The orthodox Bayesian goes too far, in my opinion, by constraining us to a unique way of changing our minds. There is a normal procedure, a default, I agree. But I submit that there is room, within the bounds of rationality, for leaps of faith. Rationality, in my view, is just bridled irrationality.
   Sometimes it looks to me as if certain positions in epistemology, or ethics for that matter, are designed to relieve us of personal responsibility, to free us from the need to decide or to take a stand.

8. You are not in favor of a correspondence theory of truth. What alternative conception of truth do you propose?

   I take this as another question about foundations, not in epistemology this time, but in the theory of language. I find contemporary versions of the correspondence theory of truth, such as truth-maker semantics (which postulates something like facts as grounding the distinction between truths and falsehoods), very interesting. But I would adapt Wittgenstein's dictum about foundations of mathematics: there is 'founding' or 'resting on' here only in the sense in which, in a painting, the painted tower rests on the painted rock.

9. Is your critique of inference to the best explanation and of induction grist to the mill of relativism, which has been given new impetus in

scientific discourse by Kuhn's thesis of the incommensurability of scientific paradigms and Feyerabend's critique of scientific method monism? My German professor Wolfgang Wieland, a student of Gadamer, has argued that after Feyerabend's enormous relativist influence, philosophy of science needs a tool of hermeneutics that stays in touch with reflective judgment so that the theory of science can get out of the wheels of relativism. We owe most discoveries in science to reflective judgment. I miss this important segment of philosophy in your empirical stance.

I disagree with this view of Feyerabend's thought. It was an interpretation that he rejected explicitly in his posthumous book *Conquest of Abundance* (see my review, *Times Literary Supplement* 5073, June 23, 2000: 10-11). But I sincerely hope that my arguments are not true grist to the mill of relativism, however that be understood. I share Feyerabend's fascination with transformations in our ways of seeing, and am as intent on showing that, however radical these may be, their impact does not (to echo his words) imply that we live in "an ocean of irrationality interrupted, briefly, by mutually incommensurable islands of sense".

However, avoidance of such consequences does not require subscribing to the view that such inference patterns as inference to the best explanation, let alone induction, are what drives science or reasoning in general. Since the days of Pascal and Fermat, an alternative epistemology has quietly been developing, with a focus on more general forms of opinion, beyond belief and disbelief, which has no room for those sorts of inference.

10. You hold that the empirical sciences do live by the rule of *Sola Experientia* and nothing trumps experience. It is an analogy to the old Luther "sola scriptura" principle. In the Lutheran tradition, a hermeneutics was developed that implies a combination of logical consistency and contextuality of meaning, which must be taken into account in the oversight. Does the same apply analogously to experimental experience? Aristotle speaks of the "eye of experience" (*tēs empeiras omma*) that helps us to judge correctly and

appropriately, especially in the field of morality, practical life, and inductive reasoning.

I introduced the phrase *Sola Experientia* (*Philosophy of Science* 64 (1997), S385-S395) with a question mark. This was in response to Feyerabend's refutation of 'classical' empiricism, in which he likened Newton's *vera causa* rule to the Protestants' rule of *sola scriptura*. I was very intrigued with Feyerabend's discussion of the Jesuit analysis of this rule.

Taking it up again in *The Empirical Stance*, I tried to show how there were clues there for a non-foundationalist epistemology. But what you ask here about hermeneutics and contextuality of meaning is now more important. Without using the word "hermeneutics" I find that we are engaged in this form of creative interpretation at many points in philosophical discussions of science. All the more so today, now that scientific practice, as opposed to theorizing, is taking much of the limelight.

11. Your empiricism does not share the dogmatic views of contemporary naturalism and materialism regarding the determination and definition of the human being? I have the impression that for you the question of how we should think about persons is very important, especially because this topic is relevant to religion. You talk about the personal encounter with the divine, the presence of God in human history. Do you think that scientific atheism, as advocated by the Vienna Circle, for example, is a dangerous dogmatism? Our life-world (Lebenswelt) is also made up of people of faith, and religious experience is a legitimate form of life even in our secular society, what is your opinion on this?

There is, as far as I can see, nothing scientific about scientific atheism, and equally, there is nothing of religion in most 'science and religion' studies. But philosophers have a problem in this area. Such ideas as naturalism and physicalism, in various vague forms, have a grip on popular thinking and can catch us before we reach the age of critical thinking. In philosophy, we are constrained to challenge only ideas that we can make precise, but this tends to weaken the impact of our critique. For precise ideas don't have the same motivating force as what we are targeting, if we criticize naturalism or physicalism.

Naturalism and naturalizing became a matter of piety, so to speak, in analytic philosophy. In my reaction against that, I have been inspired by the writings of Hilary Putnam, and I have argued against naturalized versions of empiricism, and against naturalism in epistemology. In *The Empirical Stance*, I argued also that physicalism/materialism is a stance generally confused with a thesis, so that it should rightly be called a case of false consciousness in philosophy. When it comes to such concepts as that of the person, attempts to naturalize them fail to respect their deeply value-laden character, and seem oblivious to the call to decision that their application involves.

12. You are a Christian. Does your faith play a role in your philosophical activity, and if so, in what sense?

    Not in any conventional or traditional way. In *The Empirical Stance*, I tried to find some clarification on what it is to be secular rather than religious. In some things I have written there are clear signs that I am religious, and I am happy not to shirk the issues when that is relevant, but I do not take part in philosophy of religion.

13. My idea as president of AIPS is to have members of AIPS present at the 25th World Congress in Rome, in 2024. We would like to have you as a keynote speaker. The theme of the World Congress is "Philosophy Across Boundaries." What could you offer on the topic there?

    There are so many boundaries within philosophy, and I am happy that this will be the theme of the meeting. In this regard, I have thought mainly about how epistemology and philosophy of science, as they have developed within analytic philosophy, have become increasingly insular. I would like to talk about how insights in ethics and philosophy of mind, and themes and concepts that were current in the past century or so, as well as in other traditions, can be brought into even very formal epistemology.