

Preface

Since pre-Socratic times Western thought has been shaped by the tension between two rival epistemic frameworks, each aiming for the most adequate and comprehensive understanding of our world. As far as it can be traced, the schism started with Xenophanes (born around 570 BC). Offended by inconsistent, contradictory and amoral Homeric descriptions of gods, he introduced the concept of one, immovable, rational and moral deity, from which all the rules of our world emanate and which stands in opposition to the mere “just-so” stories of myth. These two kinds of logos we shall refer to as “rational” and “narrative” respectively. In any given epoch or culture the difference between them has usually been clear, although rational explanations have always enjoyed somewhat higher status than any narrative lacking intellectual evidence. Taken historically, however, the difference between the two frameworks is not that clear. Often what has been taken as rational in an earlier culture has come to be regarded as mere myth, “figments of times past”, from the point of view of a later one. Moreover, the introduction of rationality has often been considered a measure of progress; rationality and progress became synonyms, and progress was, of course, “better”.

Xenophantian argumentation has existed in a practically unchanged form since the 2nd century AD, when it was used in service of Christian argumentation against older beliefs. Here again it is implied that the “new truth” (and morality) soars against the “folly and perversity” of older, pagan times, potentiated by the new eschatology of synoptic Gospels and the Paulian concept of a “new man”. This is illustrated by two authors who are separated in time as in views, yet congruent in their perception of the world. First, passages from Augustines’ *De doctrina christiana* (AD 396–427; English translation 1997):

“A wise mind (in other words, one that has acquired wisdom) was not wise before it acquired wisdom; but wisdom itself was never unwise, and never can be. If they did not see this, they could not, with such complete confidence, subordinate the changeable form of life to a form of life that was unchangeably wise. They certainly see that the actual standard of truth, by which they maintain the superiority of that life, is not subject to change, and they can only see this as belonging to a realm above their own nature, since they see themselves to be subject to change. Nobody is so brazenly stupid as to say, ‘how do you know that the form of life that is unchangeably wise is to be ranked more highly than the changeable form?’ The answer to this question, about how I know, is publicly and unchangeably present for all to

behold. Anyone who fails to see this is like a blind man in the sun, who cannot be helped by the brightness of such a clear and powerful light shining into his eyes." [VIII.8/IX.9]... "Among all these things, then, it is only the eternal and unchangeable things [...] that are to be enjoyed; other things are to be used so that we may attain the full enjoyment from those things." [XXII.20] "God exists in the supreme sense, and the original sense, of the word. He is altogether unchangeable, and it is he who could say with full authority 'I am who I am', and 'You will say to them, I have been sent by the one who is' [Exod 3:14]" [XXXII.35]

Hence, "objective" evidence is preferred to conveyed, mediated knowledge. Such concepts in many variations survived for many centuries; finally the Enlightenment and later times recycled the same pattern of argumentation again, but this time directed against Christianity. In totalitarian conceptions it was enhanced by the eschatology of the "Last Battle", which promised to open the Way to a better future for all humankind. (It is, of course, a New Man – differently coloured in different regimes – who will dwell in this New Future.) One who *knows* the external truths has a duty to work on *quicken*ing the advent of their ruling, of course. At this point we could refer to communist and similar teachings, but utopias provide even better examples. In *Walden Two* it is apparent that B. F. Skinner (1976 [1948]), the leading 20th century proponent of behaviorism, also sought to stop the ever-changing world in the name of eternal truth:

We want a government based upon a science of human behavior. Nothing short of that will produce a permanent social structure. For the first time in history we're ready for it, because we can deal with human behavior in accordance with simple scientific principles. The trouble with the program of anarchy was that it placed too much faith in human nature... (182)

There is a telling exchange between Fraser (the principal character and founder of the Walden community, a scientist) and his opponent, Castle (240–242):

- F: ...What would you do if you found yourself in possession of an effective science of behavior? Suppose you suddenly found it possible to control the behavior of men as you wished. What would you do? [...]
- C: I think I would dump your science of behavior in the ocean.
- F: And deny men all the help you could otherwise give them?
- C: And give them the freedom they would otherwise lose forever!
- F: How could you give them freedom?
- C: By refusing to control them!
- F: But you would only be leaving the control in other hands.
- C: Whose?
- F: The charlatan, the demagogue, the salesman, the ward healer, the bully, the cheat, the educator, the priest – all who are now in possession of behavioral engineering.

Thus Fraser lobbies for the rational control of human affairs in order to marginalize irrational bullies who would deceive the people. He concludes:

If man is free, then a technology of behavior is impossible. ... I deny that freedom exists at all. I must deny it – or my program would be absurd. You can't have a science about a subject matter which hops capriciously about. Perhaps we can never prove that man isn't free; it's an assumption. But the increasing success of a science of behavior makes it more and more plausible.

And one also gets a hint of the irrationality of the past when, for example, Frazer speaks of Jesus who refused punishment (245): "He certainly had none of the experimental evidence which is available to us today, and we can't conceive that it was possible, no matter what the man's genius, to have discovered the principle from casual observation." Further on we read (258) that the Russian experiment was good at the beginning, but failed to stick to well-designed experimental schedules, in addition to other faults. Such a global perspective is the *single* bit of palpable progress in sight in the 25 centuries that separate Xenophanes and Skinner, for Xenophanes definitely expressed no concerns about humankind!¹ The pattern of argumentation, however, is independent of whether the particular author knows and quotes Xenophanes, or has any idea about his works.

The notion of rational and moral divinity also lies in the background of typically modern concepts of "natural law" and "moral law", both seen as issued by God. Nature is fully subordinated to His will; only humans, endowed in His image with reason and freedom, are also free to disobey. But disobey what? Natural laws obviously cannot be disobeyed (nature, in this conception, is fully deterministic); what *can* be disobeyed is the moral law – and human transgressions then must be punished by God. A deistic idea thus arises, taking divinity as a combination of supreme watchmaker and vice squad. Natural, as well as moral, laws become understood as a divine plan of creation – creation as a construction, as a product, in contrast to wiser currents of religious tradition. An atheist can easily take over this concept, in which natural and moral laws are understood as necessities: even for him it is, of course, good and advantageous to know as much as possible about them. He can argue – along with the creationist – that science and technology based on logic and mathematics indeed works. The chapters that follow represent an attempt to show how *unobvious* such a cult of rationality is in the world which is *physis*. We shall concentrate our analyses on questions concerning self-sustaining life and the living world.

When considering life, we perceive a trend for the bodily nature of living beings to be reduced to forms of rational calculi devoid of bodily existence but easier to grasp through mathematics, logic, or informatics. Such a trend is focused on locating the ultimate causes of living beings in strings of nucleic acids, in evolution that alters the frequency of alleles in populations, or in ecology construed as the spontaneous by-product of activities of myriads of hapless, quasi-autistic individuals. Consequently the whole process of ontogeny and of "performing" life itself becomes understood as analogous to an assembly line or a computer program – complicated, but decipherable and understandable to the last details. To quote Richard Dawkins (1976, preface): "We are survival machines – robot vehicles blindly programmed to preserve the selfish molecules known as genes". In another book (1981, 17) he states that we are "the most complicated and the most perfect machine in the knowable universe".

¹ It may be argued that the book was meant ironically, but we doubt it: the whole spirit of the time favored the belief that everything, from molecules up to the universe, can be explained on the basis of simple rational principles.

Laws are normative rules, parts of a rational system. Yet, in addition to many difficulties with these efforts to forget about *physis*, another peculiarity of such approaches will be seen to stand out. This is the way in which they totally forbid novelty; they are unable to take into account anything that has not already been present virtually, and thus identifiable *in potentiam* by standard calculations or logical sequences.

Hence, three principal mysteries in the realm of life are: (1) Where does the novelty come from? (2) What is the essence of evolution? and (3) What is the role of living beings in evolution? Such questions have a lot to do with the two forms of logos – narrative and rational – as mentioned above. If novelty is allowed then history enters the stage; and if history is allowed then living beings should be taken into consideration as *interpreters* of the past.

This text is an experiment in writing a multi-authored book without ending up with a collection of standard papers, each written by somebody else. Instead, half a dozen people working in theoretical biology, philosophy, and informatics provided rough material that was then welded together by one of us (AM), with all authors assisting in, commenting on and discussing the whole welding process. It was a peculiar and enriching experience for all of us.

The book is divided into two parts. The first deals with more philosophical topics while the second focuses on living beings, their evolution and being in the world. We begin the first part, concerning *the hermeneutic nature of the world*, by dealing in Chapter 1 with the roots of rationality and the hermeneutics of the natural, with how narrative can help us to explain life. Chapter 2 is devoted to living beings as co-creators of the world in the process of evolution. An analysis of why novelty is so hard to comprehend in the framework of Western thinking constitutes the topic of Chapter 3. This theme is developed further in the Chapter 4, which is devoted to the conflict between evolutionism and traditional rationalistic worldviews.

The second part of the book takes its inspiration from the Heideggerian parable of the Region [Gegnet] determining the path of wanderers, but, at the same time, moulded by their wandering. The key idea in the second part, then, is that living beings are wanderers that co-create their region. Chapter 5 is devoted to global activities of the Gaian biosphere and what can we learn from it. In Chapter 6 we focus our attention on another aspect of the mutualistic conception of life, on likeness as demonstrated in homology studies. The last chapter addresses the problem of so-called evo-devo science, but considered from the angle of the concern of life itself with own its being.

Prague, Czechia, April 2009

Anton Markoš

Filip Grygar

László Hajnal

Karel Kleisner

Zdeněk Kratochvíl

Zdeněk Neubauer