Chapter 1
Introduction

> *Life is an incessant imperative for the search of meaning, something that precedes human reason. Because of this, we have made the fact of meaning the central problem of philosophy, capable of erasing any binary division, within the framework of the evolution of interpretation — that is to say the evolution of the complexity of systems for reading the world.*
>
> (Prodi 1989: 94–5)

Abstract The natural world, the world of things, is a full world. It is full because everything is in contact with something else, because in the world there is nothing but material events. If the world is such, then what is the *meaning* of a sign? A sign, in fact, is a sending to; it stands for something that is not present. The sign breaks the continuous fullness of the world. Giorgio Prodi tackles this problem, one which is both a philosophical and a biological one by asking how it is possible that, in the material world, something like the *meaning* of a sign becomes manifested. Meaning is not a thing—like a virus or a galaxy—and yet without the notion of "meaning", the biological world would remain incomprehensible. In this introduction, I present the general theoretical framework of Giorgio Prodi's biosemiotic thought.

Keywords Ontology · Sign · Meaning · Semiotics

The world is everything that happens and nothing else. The world is composed by things and events that involve things. A stone, for example, is a thing—something that has a certain place, in a certain time. If the world was merely composed by things, like viruses, we would have no problem in compiling a catalogue of all the things in the world, i.e., its ontology (aside from the decisive fact that, if only viruses

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existed, there would be no philosophy nor science). Only problems of a practical and technical nature would remain: it is difficult, for example, to describe in detail an astronomical object located many billions of light-years from the Earth. But in the world, there is also something that is not a thing, like a virus. There is *meaning*. For example, where is the meaning of an animal's behaviour? The meaning of a landscape? Of an image? Of the words you are reading? Meaning is not a thing, or at least it is not the same kind of thing that a virus is. But meaning is part of this world. The virus itself, without meaning, could not survive. Meaning belongs in the world, but it is not a thing in the world. This is the problem examined by Prodi: how is it possible to insert *meaning* in the world of things? That is to say, how can we place phenomena related to meaning—semiosic phenomena—within the one world there is, the world of things, the natural world? If the world is full, semiosis digs a hole in it, because semiosis is a sending-off to something which is not present. The sign is here, but its meaning is not: it is *elsewhere*. If we are not willing to renounce the fullness of the world, we have to try and find a way to stitch back together this continuous fabric, lacerated by semiosis. Prodi resolves this apparent paradox by showing how life—biology—is, in the most fundamental of its mechanisms, a meaning, a semiosis. If biology and semiosis coincide, then meaning is not something that punctures the continuous fabric of the world. On the contrary, this very fabric is intrinsically semiosic.

Around the time that Giorgio Prodi wrote *Le basi materiali della significazione* (1977), Umberto Eco wrote that "one must undoubtedly exclude from semiotic consideration neuro-physiological and genetic phenomena" (Eco 1976: 21). For Eco, then, the sphere of elementary biological phenomena is well separated from that of semiosic ones. There is a "lower threshold" (Rodríguez and Kull 2017) of genuine semiosis, a discipline that deals merely with that which is a sign, that is, "everything that, thanks to a previously agreed-upon social convention, can be interpreted as SOMETHING THAT STANDS IN THE PLACE OF SOMETHING ELSE" (Eco 1976: 16). Alongside this definition, Eco proposes another, even more restrictive, one: "semiotics, in principle, is the discipline that studies *all that which can be used to lie*" (Eco 1976: 7). This second principle is much more stringent, since it seemingly excludes from the sphere of semiosic phenomena those, for example, that take place within the immune system of an organism or between an antigen and an antibody (a phenomenon to which the criterion of conventionality cannot be applied). In order to understand the overall philosophical project of Giorgio Prodi, we need to remember how this was meant to challenge and to enter in dialogue with *this kind* of semiotics, developed by his friend and University of Bologna colleague, Umberto Eco. Maturing in this theoretical environment, Prodi is interested, from the beginning, with that which lies beyond the threshold of semiotic: "it is not possible to establish, *a priori*, a semiotic threshold. The field must be completely open towards the origins, and always remain indeterminate" (Prodi 1977: 12). The field covered by Prodi's inquiry will be, on the one hand, that of the natural-biological origins of meaning and of semiosis and, on the other, that of the transformations that meaning undergoes when it becomes a thoroughly cultural and artificial phenomenon. This is the field today known as biosemiotics (Hoffmeyer 1996; Kull et al. 2009; Emmeche and Kull 2011).

Prodi, as a biosemiotician, is also a philosopher: he believes that "semiotics […] deeply coincides with philosophy" (Prodi 1986: 124). Going from things to meaning—from nature to culture—there is a gradual change, with no abrupt interruptions. It is for this reason that Prodi wants to avoid the two dangerous and opposite pitfalls that beset—today as much as in Prodi's time—the problem of the naturalization of meaning (let us not forget that Prodi's semiotic work is entirely concentrated between the mid-1970s and the mid-1980s. We are here reconstructing the philosophical profile of a scientist, not an episode in the history of semiotic): eliminative materialism, on the one hand, and artificialist culturalism on the other. These are two extremes, useful to better grasp Prodi's peculiar placement.

Let us consider the first pitfall, eliminative materialism, and in particular the stance that considers mental phenomena—that of meaning being its most paradigmatic example—as non-existent. According to a preeminent cognitive scientist, "our commonsense conception of psychological phenomena constitutes a radically false theory, a theory so fundamentally defective that both the principles and the ontology of that theory will eventually be displaced, rather than smoothly reduced, by completed neuroscience" (Churchland 1981: 67). According to this position, meaning would simply not exist—neither in the mind nor in the world. The problem with this kind of materialism is that, in order to be thoroughly eliminative, it becomes unable to account fully for the complexity that it purports to describe (Baker 1989). More precisely this materialism, while attempting to get rid of the notion of meaning, underestimates the absolutely central role of language in human experience, a role that Prodi, as a biologist, is able to fully appreciate. Besides, if meaning does not exist, *who* writes books in order to demonstrate its own non-existence?

The other pitfall is that of artificialist culturalism (a kind of modern version of idealism), a stance that, on the contrary, considers meaning—as, for example, that involved in human cognitive processes—as something completely separate from the natural history of the physical systems that serve as its material basis (like the brain and the human body). As a limit case of this kind of approach, we can look at the work of Nobel Prize winning neuroscientist John Eccles, according to whom "a nonmaterial mental event, such as an intention to move, can influence the subtle probabilistic operations of synaptic boutons" (Eccles 1994: 55). It is evident that a "nonmaterial mental event" cannot be said to belong to the natural world, to the world of material things. If eliminative materialism cannot explain how from things we can reach meaning, a position like Eccles' (of which we should at least acknowledge its clarity and intellectual honesty) cannot at all explain how meaning is developed from material things—on the one hand, things without meaning and, on the other, meaning without things. Prodi's stance wants to avoid both of these pitfalls. For this reason, his proposal remains timely, since the temptation to do away with meaning is always present, as is the temptation to salvage meaning at nature's expense. As Tim Ingold writes: "the source of the problem is not the conflation of the cultural with the biological, but the reduction of the biological to the genetic"

(Ingold 2006: 276). Prodi works precisely against this dangerous reduction, just as he wants to ward against the opposite risk, run by those who believe that genetics has nothing to do with culture:

> [t]he separation between the biological and what gets called the "spiritual" […] can be interpreted in two ways. The spiritual could be thought of as too complex to be explained in the vocabulary of the biological, and the biological too rough to be capable of explaining that which is spiritual. […] These are, clearly, two formulations of the same proposition. One emphasizes the beauty and the perfection of the spiritual — its non-naturality. The other emphasizes the mechanical character of biology. […] We have preferred a different path, one already looking for some kind of intelligence (nonhuman or anthropomorphic) in the biological, and considering every complication — including logic and rational discourse — as a complication of this intelligence. We called this stance "natural rationalism", identifying it with the elementary semiotics that lies at the foundation of every biological organization. (Prodi 1989: 94)

Prodi's challenge, then, is that of merging continuity and discontinuity, unity and difference, and nature and culture. Prodi looks for a different way, grounded in biology and semiotics, to avoid both materialist monism (there are only things; meaning does not exist) and the dualism of those who decouple meaning from the natural world (there are things and there is meaning, but nothing bridges the two). Perhaps for this very reason, the consequences of Prodi's proposal have not, so far, been explored. That is because Prodi's position is unsatisfactory for both the eliminative materialist and the irreducible culturalist, but most of all because it subverts our unreflective patterns of thought. Let us mention but a few of these theoretical stereotypes: to talk of biology means to negate any historical dimension; the historical-social sphere does not have anything in common with the natural one; human language is a social construction and therefore arbitrary; language is an instrument of communication; the sign is an arbitrary and intentional entity; scientific activity is distinct from poetic production; it is impossible to translate in biological terms the discourse of religious experience; science and philosophy have nothing in common. These, and many more like them, are the stereotypes debunked by Prodi.