

To begin like a bull at the gate: this is, to my knowledge, the best book in the field. I recommend it with emphasis. But the question has to be answered: which is the field in which this book excels so outstandingly? If the field be Cybersemiotics, then this might not come as a surprise, since it is the most recent, because first, monograph the inventor of Cybersemiotics is presenting on the topic. However, if we do not want to fall into the trap and mistake the token for the type, then at first sight it might be difficult to determine the field to which the book belongs. It deals with library and information science, with cognitive science, with consciousness studies, with communication studies, with semiotics, with cybernetics, systemics and informatics, with evolutionary theory, with ethology, with sociology, with epistemology, ontology and philosophy of science – each of them a field in its own right. But it is none of these fields. It is not library and information science, though the author has approached his topic from this point of view and has tried throughout the book to make explicit the consequences of the arguments he is developing for library and information science. It is also not biosemiotics, though the author is known for his contributions to this new field, and though biosemiotics itself is not merely an interdisciplinary field that connects biology and semiotics without changing the basic assumptions of either side, but more than that, a transdisciplinary one that gives room for new concepts. No, the field of the book is a transdisciplinary one but it is even more than biosemiotics and the reason for that is not only that cybernetics is integrated with biosemiotics. The field is hidden in the title of chapter 1: “The Problems of the Information-Processing Paradigm as a Candidate for a Unified Science of Information”. Yes, it is the emerging field of a science of information to which the book contributes, and Brier lays out his idea of Cybersemiotics as a genuine approach that might give the foundations for a unified science of information.

A science of information goes beyond information science and biosemiotics. It goes beyond classical information theory. It is about information wherever it manifests itself, be it in the

realm of nature, culture or technology. This is the implicit objective that is shared by those scholars that have gathered around the discussion groups and conferences on the foundation of information science (FIS) since the early nineties of the last century -- and Brier has been participating in this movement now for more than a decade. However, he for his part is reluctant to explicitly share this notion of a science of information for the sake of the story he wants to tell.

And here I come to touch the leitmotif around which the book revolves. On the one hand, there is the so-called exact science, viz., the natural sciences and the technical or engineering sciences, the mainstream of which approaches the phenomenon of information in an objectivistic way. Brier calls this approach mechanistic. On the other hand, there is so-called "soft" science, viz., the social sciences and humanities and arts, the mainstream of which approaches the phenomenon in a subjectivistic way. Brier calls them in a broad sense phenomenological and hermeneutical. Radical constructivism is the solipsistic variety of this approach. The problem Brier sees is that mechanism does not account for meaning, qualia, first person experience, consciousness, free will and so on, while the latter approach fails in doing justice to what meaning-generating systems refer to and to the empirically investigable basis of the bodily processes of ascribing meaning.

I share with Brier the evaluation that mechanism either neglects meaning and related phenomena or is reductionistic and levels them down. This is a contention often repeated in the book but I miss an argument convincing the reader. I think it would be of help when the author would elaborate on the ontological issue of determinism which is characteristic of mechanism in order to demonstrate that mechanism is, in principle, not able to grasp meaning and related phenomena.

Now, given this divide between the two cultures, Brier sets out for a third culture and a new approach that keeps the valuable insights of the old approaches and skips their one-sided exaggerations at the same time. And he does this in a congenial way. It seems as if he would employ Peirce's principle of Agapism, of love, that helps grow different theories and make them compatible with each other to fit the bigger picture; as if he would be the interpretant (Thirdness) who mediates between different theories (Secondness) while bearing upon their responsiveness (Firstness). So to say, he attempts to evoke the good side in each theory. By that Brier gives a wonderful example of unity through diversity in the field of building theories. There is no need to be skeptical about his unifying imperative, because you are allowed to be skeptical about each particular.

So, how does the book accomplish this task in detail? As Brier points out, he does not want to provide with discussions of each theory in detail, he wants to prove instead how far a theory of a certain proponent enables the use of it for the aim of a common framework. And there are a vast number of theorists that appear in the book (the impressive list may be started with Charles Sanders Peirce, may be continued with Jacob von Uexküll, Konrad Lorenz, Humberto Maturana, Francisco Varela, Gregory Bateson, Heinz von Foerster, and may end with Niklas Luhmann without being an exhaustive enumeration). The claim is legitimate. Unfortunately, the reader is left alone when struggling through the text on the search for a linear thread. So it happens all too often that not only authors and what they say but also the topics Brier wants to discuss are grabbed again and again in different chapters and it is up to the reader to make sense of this and find out the value added when one topic is resumed. Sometimes the reader might be surprised by the content of a section which seems different from what she might expect from the title (as an example, the section on "Uniting System Science and Semiotics in a Theory of Evolution and Emergence" contains a discussion of Peirce on religion). Sometimes unexpectedly the context seems to change what might confuse the reader (so in

the case of p. 428 and p. 429 when abruptly the FIS community is addressed). Though all of this makes the book not an easy read – and I have to admit that it is not easy for an author to present a complex theme – the reader will certainly take advantage of reading. Let's take it like this: the book refrains from indoctrinating – quite according to its message – but counts instead on the ability of the reader to experience "eureka" experiences. And I can affirm to you that though I have known Brier's positions for a long time I still had new insights when reading the book.

The mechanistic approach talks much about "information" and the phenomenological approach talks much about "meaning". Since it is evident that meaning and all the phenomena listed above which take center stage in the latter approach are something indispensable to research, and moreover that these need to be included in an overarching theoretical framework that is as consistent as we are able to achieve, Brier feels compelled to draw a distinction between the two approaches resulting with the formula that information is not enough -- as can be seen from the subtitle of the book "Why Information Is Not Enough!". But it seems a matter of taste whether to stick to the meaning of the term "information" as it is widely used within the former, mechanistic approach and to exclude the phenomena related to meaning from the term or not. This need not be the only solution. It seems equally possible, among other options, to extend the concept of information and make it, in turn, include meaning and all other aspects worth to be acknowledged, and consider information that does not abide by this convention as a degenerate meaning of the term. Thus, at a first glance, we are looking at a terminological question only.

However, later in the book, it becomes clear that Brier ontologises this distinction. He construes a level of its own for "information-only", as I would like to say, in his five-levels model sketched several times in the book. The level of information-only is situated in

between a micro- and a macro-physical level, on the one hand, and a biological and a sociological level, on the other. As the reader will find out, it's the chemical level, astonishingly. This intermediary level of complex systems as object of cybernetics is for Brier the place of protosemiotics or quasi-semiotics which does not equal the full-fledged semiotics on the levels of living and human systems.

I do not object to construing levels of complexity, on the contrary. But schemes like that should not only show qualitative differences but also clarify what the levels have in common. So we could state that we order the levels along increasing complexity. Complexity is what is in common and the quantity of complexity gives different qualities and hence levels. Coming to information or sign processes it gets difficult to see the commonality. For according to the notation proposed by Brier we are not allowed to talk of different qualities of information processes or different qualities of sign processes, though this is exactly what his levels model is about. Information is only ascribed to the chemical level and semiosis only to the levels above the chemical level.

But is this really what Brier wants to tell the reader? How is it that meaning comes into the world? Brier resolves this problem by importing a preexisting theory, that of the American philosopher Charles Sanders Peirce, into his new theory, in order to harmonise or reconcile the opposition of mechanicism and phenomenology. In particular, it is certain metaphysical assumptions of Peirce that Brier takes up to be able to postulate the possibility of meaning. "One of the strengths of Peirce's semiotic philosophy is that qualia and mind – as semiosis – are installed in the metaphysics from the beginning. They cannot be explained as such because they can only be deduced as necessary prerequisites for the production of that knowledge we wish to discuss!" (p. 363) The reader might think: if qualia and mind are installed from the beginning, then the levels do not make any sense. Qualia and meaning must

be there on each level, micro- and the macrophysical, chemical, biological, and sociological, so this is not what makes them different.

But in trying to understand the text the reader might come across another inconsistency. On page 365, Brier strictly is saying that regarding the five levels he does not assume “any evolutionary causal links between them that would indicate that one level is presumed to give rise to the other”. Surprisingly, this is said under the header of “An Evolutionary View (sic!) of the Threshold between Semiosis and Informational Exchange” which is the title of chapter 9. This would mean you have exchanges of information (which is not really what you have and Brier is time and again presenting arguments against the naive view that information is exchanged) on one side of the threshold and semiosis on the other side. On page 381, however, in contradistinction, Brier asserts the reader of his commitment to modern systems thinking that “views Nature as containing multilevel, multidimensional hierarchies of interrelated clusters, which together form a heterogeneous general hierarchy of processual structures: a ‘heterarchy.’ Levels emerge through emergent processes when new holons appear through higher-level organization.” As to the problem of information and sign processes he goes on to state on the same page: “Across levels, various forms of causation ... are more or less explicit (manifest). This leads to more or less explicit manifestations of information (sic!) and semiotic meaning (sic!) at the various levels of the world of energy and matter.” So the reader can now conclude: information and/or semiotic meaning might be that which is in common and differs according to the quantity of explicitness. “Meaning is generated through the entire heterarchy”, says Brier (p. 382). But if semiosis is evolving through the levels generated and becomes more and more differentiated, why is it that information cannot also evolve along the same line?

This is what I would suggest. Brier shows us how it is possible to have an evolutionary account of information unfolding signification in the prebiotic; meaning in the biotic; and sense in the human. Read that way Brier's monograph shows itself to be, in my opinion, the best book so far in the field of an emerging science of information.