Do Biosemiotics, But Don't Forget Semiosis

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Received: 22 September 2008 / Accepted: 11 November 2008 /
Published online: 17 December 2008
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English, nowadays a global *lingua franca*, undoubtedly suffers regrettable assaults from speakers of different corners of the world; sometimes I feel really sorry for the native speakers, who are polite enough not to express their distaste for our performances. Alas, I find it all the more regrettable when the same native speakers tend to transfer colloquial, or laboratory, slang into professional scientific texts. By this I mean the continuous trend to use the name of a science for the object of that science. I don't need to stress how quickly such garbage sips into all other languages.

It all probably started decades ago with *morphology*. When we speak about the forms of living beings, we speak without hesitation about their morphology, even if a second thought should give us a hint that the suffix—*logy* stand for study (in this case the study of morphe, i.e., of form). The habit continued later on with *psychology* and *physiology*—so when I am thinking I say that my brain is doing 'psychology'; and when I digest I say that my innards are doing 'physiology'. So we get beautiful tautologies like "psychology is the science of psychology", "physiology is the science of physiology", and so on. (Gimona 2007, 202: "Mind is a phenomenon of psychology"—but were there no minds in the world before the science of psychology was established?)

It seems that the epidemic is still ravaging; just three examples by authors who are eloquent writers and should have known better:

1. In an article about the origins of life, N.R Pace (2001) writes: "Life is a self-replicating, evolving system expected to be based on *organic chemistry*. The basic drive of life is to make more of itself." One almost sees the Creator fiddling with test tubes in a lab of organic chemistry.
2. Similarly, R. Dawkins (in Brockman 1995, 82) unleashed embryology to play a role not in our Institutes, but in evolution:

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Embryologies are kaleidoscopic, in the sense that mutations may produce complicated effects. *Embryology* itself is a complicated process, such that a random change, a mutation, manifests itself like the image that results when you tap the kaleidoscope ... Those are two examples of kaleidoscopic *embryology*. Mutation is filtered through the existing processes of *embryology*, and the consequences of mutations are complicated. That's what I mean by kaleidoscopic *embryology*.

Things like the five-way symmetry of starfish and sea urchins—the *embryologies* they have may be especially good at evolving ... Every now and again there's a major change in the *embryology* ... because certain new *embryologies* are good at evolving.

3. My final criticism concerns the paper by S. N. Salthe in *Introduction to biosemiotics* (2007):

"We may well ask 'where is *biology* located'? The problem here is that *biology* as a discourse ranges over several levels of scale... This may be contrasted with the commonly held notion within the discourse that *biology* is essentially a product of genetic information." (133)

"We may ask, whether, in the view of the fact that what characterizes *biology* most deeply is the presence of molecular level information held in genetic system, would it not be reasonable to suppose that *biology* is nothing more than ... chemistry?" The paragraph continues about integration of processes in living beings, and closes as follows: "Indeed, one could say that *biology* harnesses chemistry to its own ends." (134)

"In *biology*, genetic information imposes constraints on chemical dynamics..." (136)

"*Biology* assumes its ecological role—increasing the variety of energy gradients being dissipated, as well as increasing their thoroughness ... These associations, which are mediated in *biology* by the diverse adaptations of organisms and free living cells..." (136), and the paragraph on convergent evolution starts by saying: "With this issue we have broached the general problem of where *biology* exists more explicitly." (140)

What is the meaning of the three uses of the word 'biology' in the above sentences? Semiotical, and even hermeneutical, tools do not help much. Try to decipher, for example, when the author takes 'biology' as a science, and when he means 'life', or 'living processes', especially when the word is used twice in the same sentence.

Is there something wrong with me and with my knowledge of English, or do we have a real problem, here? Should we just dismiss the whole thing by saying that Markoš is a particularly naughty fault-finder?

Well, let us take, at least, that semiotics is a science of semiosis, i.e., how meaning is extracted by humans and that biosemiotics is about how semiosis is performed by other critters. They definitely do not perform biosemiotics, physiology, embryology or molecular biology—they simply *live*.

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