

REPLY TO THE COMMENTARIES OF BARBIERI, FAVAREAU, TABORSKY, AND WITZANY ABOUT MY PAPER "LIMITATIONS ON APPLYING PEIRCEAN SEMEIOTIC"

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About the motives and aims of my paper:

I am grateful about the attention my paper has received, because it gives me a possibility to rethink some problematic or confused issues, to correct certain evident misunderstandings and misreadings, to restate what I tried to argue for (and what I did not), and finally to give some additional explanations and reasons that are obviously needed.

In the paper, my general concern was the conditions under which biosemiotics in general could successfully be made as a natural science. As Taborsky notes in her comment, it functions also as “a scholarly analysis of Peircean semiotics” because my more specific aim was to study to what extent Peirce’s semeiotic—or some other topics in his investigations—can provide applicable sign theory for biosemiotics. The conclusion was that Peircean concept of sign is a logical and representational one and as such too narrow in order to function as *the basic* concept of sign for biosemiotics. However, within Peircean pre-logical normative sciences¹ a more general *non-representational* concept of sign can be defined so that both biosemiotics and Peircean semeiotic might be grounded to such more general concept of sign.

The reason why I focused on the conditions of applying Peirce’s sign conception is that Peircean terminology and metaphysics are so widely used in biosemiotics and that I have been somewhat uncomfortable with the manners how ideas claimed as Peircean

¹ These pre-logical normative sciences are *Esthetics*, “the theory of deliberate formation” of ideals and Ethics or better *Practics*, “the theory of self-controlled, or deliberate, conduct”. Logic—or semeiotic—forms its subdiscipline as “the theory of self-controlled, or deliberate, thought” (CP 1.191, 1903), because thinking is a kind of mental behaviour. Peirce named his three normative sciences according to old tradition as Esthetics, Ethics, and Logic though he treated them so abstractly and theoretically that their connection to the traditional senses of these terms may seem distant. This concerns especially his mid-normative science that he proposes to rename as “*antethics*, that is, that which is put in place of ethics, the usual second member of the trio. It is the writer’s opinion that this *antethics* should be the theory of the conformity of action to an ideal. Its name, as such, will naturally be *practics*.” (CP 1.573, 1905). *Practics* is thoroughly theoretical philosophical science while ‘ethics’ can be reserved to its traditional use (as a science or a doctrine under *practical* philosophy). Witzany’s remark about the inappropriateness of the use of the term ‘objective ethics’ is in this context accurate and is in line with Peirce’s own terminology in its last form.

ones have been applied in biosemiotics. On the other hand, I have found a great deal of Peirce’s own arguments and concepts quite convincing and acceptable even today. Especially many of Peirce’s conceptions about science and *making* science—most of all his classification of sciences and *methodetic*—would be relevant and profitable in making biosemiotics as a science. I would expect that even those biosemiotic approaches (like Barbieri’s and Witzany’s ones) that do not apply concepts of Peircean origin as their theoretical concepts would benefit Peircean *methodetic* especially in defining their basic concepts (wherever they are picked from) and in the evaluations of the meanings of these concepts.

It has seemed to me that Peirce’s generally favourable *methodetic* principles are in conflict with the vague (or twisted) use of Peircean terminology and ideas as *theoretical* concepts or principles of biosemiotics. In order to find out to what extent Peirce’s semeiotic or metaphysics can be applied in biosemiotics, I tried to explore what Peirce himself made his concepts to contain² assuming that he used his own *methodetic* principles when construing his semeiotic and metaphysics. Thus, Peirce’s philosophy plays the double (or even triple) role in this paper, it provides both an object of study (as a conceptual basis that the part of biosemiotics employs) and a set of methodical principles and goals according to which this object is investigated—both by Peirce himself and me.

A reply to Favareau—making ‘good insights’ clearer:

I will start with Favareau’s general question about the conditions to adopt some “good insights of Peirce” that biosemioticians “feel they can use as helpful analytical tools in order to describe, categorize and in some more edifying way explain sign processes in the natural world”. Will that force them (or us) to adopt the Peircean conception of the system of science as a whole?

First of all, I have nothing in principle against the inspirational use of anything that Peirce or anybody else has written—that is a common way how new theoretical innovations are made. All new theories are either vague or almost completely ungrounded in their childhood and there is nothing wrong to count on one’s intuitive insights and visions in the beginning of a new approach. Nevertheless, I want to emphasize that this ought not to be all but only a first step of an inquiry. One basic task of any scientific approach is to *make* our ideas clear, i.e. to *refine* our insights into concepts and conceptions definite enough so that their concrete bearings (i.e. meanings) and proper referents will be revealed and truth become, at least to some extent, concretely testable.³ This making our ideas clear must be an active and conscious aim without which I cannot see much reason to expect that our ideas could come clear (except by an accident). There are at least two alternative ways to proceed.

² Including both what Peirce intended his concepts to contain and what they factually came to contain in their derivation independently on Peirce’s intentions.

³ If this ‘making our ideas clear and distinct’ is not our aim in biosemiotics—not even in the long run—then our attitude is probably not at all scientific but rather political (like environmentalist), existential, or ‘artistic’ one. If these latter attitudes are emphasized in our conception of biosemiotics, the rational pragmatist meanings of the used terms lose their importance and their rhetorical force, the less self-controlled psychical impulses and impressions that biosemiotic poetry generates, will be more influential.

1. The first alternative is adhering to Peircean concepts, i.e. trying to find out what they are (irrespective of the first glance impressions) and to what extent they are applicable in the study of the specific biosystem at hand. This is what I have tried to do in this paper though at a general level. This does not mean that Peirce would be taken as an authority, far from it. Instead Peirce's *arguments*, *derivations*, and *observations* from and by which his concepts are derived are studied and their validity are considered. In doing this, it seems necessary, in my opinion, to take account on the whole system of sciences that contextualize Peircean concepts and mutually relate them. In those respects that Peirce's points of view, arguments, and concepts, etc. cannot anymore be kept valid, sufficient enough, or otherwise acceptable, they have to be revised or replaced with more accurate ones. This is also what I tried to do in this paper by suggesting a more general concept of 'ethical' sign (though 'practical sign' would be more appropriate term). Instead of really being a rejection of Peircean theory, this is its completion or the limitation of its range of application. E.g. my intention was *not* to categorically deny the possibility to apply Peircean representational concept of sign in the description of life processes (as Favareau and Taborsky seem to misread me). Instead, I insisted that it is not sufficiently general to be *the basic* concept of sign (in biosemiotics)—it may quite well appear applicable here and there, perhaps even in *some* endosemiotic processes.⁴ However, wherever it (or any other formal or logical concept of sign) is applied, its applicability must be proved in details in each case separately. No general positive argument about its applicability seems possible to me.

2. The second alternative is to abandon the adherence to Peirce's concepts and to compose and define new ones that resemble more or less remotely Peirce's ones without caring a bit about the correct interpretation of Peirce's terminology. I cannot deny that this also is a perfectly legitimate alternative to proceed in making our ideas clear. It may be even more tempting alternative than the previous one above because it may seem to be easier and more straightforwardly biosemiotical.

However, I would rather say that the apparent easiness of self-made definitions is illusory and it is probably a much more demanding way to proceed. Namely, I would see it more likely that within this procedure no progress follows in the clearness of our biosemiotic ideas—if such a goal is accepted at all. In order to get such progress, pretty much similar operations of mind have to be carried out as Peirce did in his work about a hundred years ago so that it may appear as inventing a wheel over and over again. As difficult and mentally laborious as this second way is, it is not a hopeless one, and though I think it wise to start with Peirce and separate partially out later, it is hardly a necessary way to proceed. Still, this second alternative has an urgent need for valid methodological principles—either Peircean or something equivalent—in order to compose new basic concepts and apply them. I would expect the adoption of some reliable methodological principles being almost necessary for any hope of progress.

⁴ For instance, I have earlier (Vehkavaara 2002, 2003) doubted whether the bacterial chemotaxis would be explicable in terms of Peircean concept of sign, but the whole issue is open and dependent on empirical details of bacterial organization and metabolism. Still, I do not see much possibility to handle genes (or DNA-code) as representative signs for their host cells or organisms (or species, etc.) though genes certainly are significant for their hosts.

About the idea of 'analytic tools' and the detachment of formal level—to Favareau and Barbieri

One way of taking a leave on Peirce's concepts is to borrow them as mere 'analytic tools', as Favareau seems to suggest. Naturally, this can be done, but in my opinion such use vitiates the positive strength of Peirce's system.⁵ If the concept of triadic sign, for instance, is taken as a mere analytic tool, the irreducibility of its triadicity and many other characters commonly attached to it will either be completely lost or need a new grounding. Moreover, if biosemiotic concepts are taken as mere 'analytic tools', the biosemiotic theory sticks too easily in the formal or abstract level—definitions remain too vague and unconnected and the whole theory is in danger to degenerate into mere arbitrary and loose 'discourse'. It does not communicate well with other traditions and the conditions of reaching semiotic realism are not fulfilled which seems to be a necessary consequence if used concepts are abstracted to mere 'analytic'—i.e. *formal* or *mathematical*—tools. 'Analytic tools' cannot bring any positive content into any theory of real phenomena. If they seem to bring then either this impression is incorrect or they are not entirely analytic.

Not only 'analytic' modifications of Peirce's concepts, but also other newly defined concepts stick easily at the formal or abstract level. This is what I suspect that e.g. Barbieri's basic vocabulary of 'artifact', 'code', 'codemaker', 'nominable entity', etc. in his grand theory of organic codes is declining *unless* these terms will not get some more detailed derivations and definitions. At least I cannot see any contradiction between Peircean approach to semiosis and Barbieri's "idea that life is artifact-making" at that metaphorical or intuitive level where Barbieri discusses. In the Peircean scheme, the chain of interpretants in any *actual* semiosis is a sequence of *constructs*, they really are 'artefacts' produced by a semiotic process of some semiotic agent ('the interpreter'). The embodiment of the habit that guides the production of interpretants functions as codemaker in Barbieri's terminology. If the Peircean scheme is applicable at molecular level, then also interpretants could be there as has been suggested in many papers that share core ideas of Copenhagen-Tartu tradition of biosemiotics. Moreover, even if it were not applicable as such, the concept of normative interpretation can probably be refined and abstracted so that some more generalized counterparts of interpretants can exist at the molecular level (see Ch. 5.2 in my paper or Vehkavaara 2003). At least the molecular interpretants are far less problematic than molecular *objects* of signs (except in cases where signs represent molecules for human interpreters).

I can understand why Barbieri feels uncomfortable with many assumedly Peircean points. The reason is that Peirce's concepts and the whole philosophy has been interpreted much too metaphysically by many biosemioticians (and philosophers) who refer to Peirce. Unfortunately, Barbieri confines himself with pansemiotic interpretations about such phrases as "all Universe is perfused with signs, if it is not composed exclusively of signs" and brushes aside both my reasons to reject such an interpretation and my suggestion for alternative interpretation that is hopefully more intelligible and in coherence with Peirce's general critical attitude (see Ch. 6 in my

⁵ Only Peirce's mathematical logic (and other mathematics), which does not really belong to logic proper (cf. CP 4.240, 1902), can be taken as analytic tools.

paper). Much the same can be said about Barbieri's comments about the activity of sign—comments which do not relate to my paper at all, but only to some vague and ungrounded quasi-Peircean ideas that roam occasionally in the muddy waters of biosemiotic discourse. His tactic of neglecting Peircean insights by mis-representing them is somewhat irritating and unfair, consisting generally in the presentation of a simplistic “straw man” interpretation of Peirce (e.g. the comments about Peirce's concept of interpretant) unsupported by any serious arguments and then rejecting those straw man interpretations concluding finally that such conceptions are not applicable in biosemiotics. For my part, I have never intended to reject the applicability of Peirce's concepts in biosemiotics completely — although this applicability is more limited than what seems to be commonly assumed in the prevailing (and often reckless) use of Peirce's technical terminology.

Metaphysical interpretation of Peirce and metaphysics as a science

What then is problematic in the metaphysical interpretations of Peirce's philosophy? Again, basically nothing *per se*—it is even necessary to transform Peirce's phenomenological, logical, etc. concepts first into metaphysical ones if they are to be applied as theoretical concepts of biosemiotics (and not merely methodologically). This was also Peirce's own approach to metaphysics; the concepts of metaphysics are adapted ones from corresponding logical concepts (EP 2:31, 1898). The challenge, however, is to get such a metaphysics compatible with Peirce's strong—and as far as I can see, valid—*criticism* of metaphysics and his thoroughly epistemic point of view. The doctrine of pragmatism (and pragmaticism) was originally developed as the method to either clarify or sweep away empty metaphysical (and theological, etc.) disputes, as Peirce describes its *raison d'être*:

“It will serve to show that almost every proposition of ontological metaphysics is either meaningless gibberish—one word being defined by other words, and they by still others, without any real conception ever being reached—or else is downright absurd; so that all such rubbish being swept away, what will remain of philosophy will be a series of problems capable of investigation by the observational methods of the true sciences” (CP 5.423, 1905).

This critical attitude of pragmatism and the argument concerning the primacy of epistemic (or cognitive) point of view over metaphysical convictions were inherited from Immanuel Kant who distinguished between metaphysics as a natural disposition and metaphysics as a science. The culmination of his *Kritik der reinen Vernunft* (1781/1787) is the question how metaphysics is possible as a science, i.e. how we can draw valid metaphysical judgments *and* how (or whether) they are also *justifiable* as valid.⁶ Peirce adopted this conception about metaphysics as a science,⁷ but departed from the Kantian approach by taking it as a science among the other sciences without the demand of any such foundational and infallible basis that modern philosophy has sought or has assumed to possess since the times of Descartes.

⁶ This questioning can be said to originate the philosophical subdiscipline of *Erkenntnislehre*, i.e. of *Epistemology* though the term was adopted about 50 years later.

⁷ This does not mean ‘scientific metaphysics’ in a sense of a result of an analysis of what metaphysical principles or assumptions are included in current scientific theories.

Science, for Peirce, is not a collection of systematized knowledge or a set of scientific truths, but a *process* of finding, evaluating, and explicating rationally the hypotheses concerning some phenomena.⁸ Mere being right is not necessary or sufficient to make an opinion scientific—we are quite often right instinctively. Instead, the criteria for science are the way that an opinion is explicated and argued for, the experimental evidence that its truth value is tested, and the unconditional attitude to seek the truth irrespectively of the possible inconvenience of the truths that such strive will lead us to support.

The life of science is in the desire to learn. If this desire is not pure, but is mingled with a desire to prove the truth of a definite opinion, or of a general mode of conceiving of things, it will almost inevitably lead to the adoption of a faulty method; (CP 1.235, 1902).

Thus for Peirce, there were no place for beliefs in science.⁹ Our intuitive (or morally, religiously, politically, or in any way practically motivated) convictions are harmful in science although we cannot completely eliminate their influence in our scientific practice. Convictions and beliefs, as indispensable as they are in our practical life, tend to block the way of inquiry if science is harnessed to prove them. Of course, science tends to produce scientifically established truths, but when we start to believe in them, i.e. when we cease to doubt them genuinely, such ‘scientific’ beliefs are no more strictly speaking scientific. They are no more under a self-controlled inspection but are dogmatically accepted and applied in practice (if they succeed to have any rational meaning).

All these criteria of sciences concern the science of metaphysics, its concepts and conceptions too. Peircean metaphysics is not the set of infallible or inevitable principles on the base of which the biosemiotics could be securely founded. If biosemiotics is hoped to come as a science, it cannot lean on merely intuitively accepted metaphysical (or transcendental) principles or on such transcendental arguments that claim the necessity or inevitability of those principles.

Even Peirce's own metaphysical beliefs and insights are irrelevant to the truly Peircean metaphysics. Mere references to what Peirce *believed* (that especially Taborsky seems to lean on) are mainly just references to Peirce's *authority* which are arguments of the kind that have quite limited scientific value.¹⁰ Instead, all that should matter are the *reasons* and *arguments* that Peirce himself composed (and we accept), or what we can compose, to support them. For instance, Peirce believed in some kind of God and global

⁸ “What is science? The dictionary will say that it is systematized knowledge. [...] Mere knowledge, though it be systematized, may be a dead memory; while by science we all habitually mean a living and growing body of truth. We might even say that knowledge is not necessary to science. [...] That which constitutes science, then, is not so much correct conclusions, as it is a correct method.” (CP 6.428, 1893)

⁹ “what is properly and usually called *belief*, that is, the adoption of a proposition [...] has no place in science at all. We *believe* the proposition we are ready to act upon. [...] But pure science has nothing at all to do with *action*. [...] Its accepted propositions, therefore, are but opinions at most; and the whole list is provisional.” (EP 2:33, CP 1.635, 1898.)

¹⁰ Cf. Peirce's methods of ‘fixing belief’ in his article “The Fixation of Belief” (EP 1:109-123, 1877), where he lists four methods: method of tenacity, method of authority, *a priori* method, and finally the scientific method. All four works within their own limits in certain practical contexts, but scientific method is superior in finding *true* opinions.

progress (or growth) in cosmic and intellectual evolution, or at least he hoped for it. Still, these beliefs *as beliefs* were important for Peirce as a *man*, i.e. they had chiefly practical value for Peirce's private (and religious) life.¹¹ As scientific hypotheses—if they ever can genuinely be taken as such—their believing status should be thrown over and to make room for their more definite explication and the rational pondering of the support that we have both for and against them.

Against metaphysical interpretation of Peirce's semeiotic—replies to Taborsky

Taborsky's reading of Peirce and thus the base of her criticism of my approach seem to be thoroughly metaphysical, however, not in the Peircean sense of metaphysics as a science but in the sense of foundational doctrine. The apparent reason for such a reading is her seemingly dominant interest in constructing a general physiosemiotic cosmology which would contain both biosemiotics and cultural semiotics as its special applications. Taborsky treats even logic ultimately not as the general method of rational inquiry but as the theory about the functioning of the universe. Logic is thus reduced to a part of or a special kind of metaphysics and the whole critical question—that was so central to Peirce—about the origin, content, and legitimacy of the concepts of any metaphysics of that kind¹² is lost out of sight.

I think that this merging logic (i.e. semeiotic) into metaphysics is a serious error, and it seems to be one of the major sources of Taborsky's misinterpretation of Peirce. For instance, pragmatism *does not focus* "on the development of the universal" in the "evolving universe", as Taborsky claims. Peirce rejected *explicitly* and in many places that pragmatism or pragmatism would be a metaphysical doctrine:

[P]ragmatism is, in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and of abstract concepts. All pragmatists of whatsoever stripe will cordially assent to that statement. As to the ulterior and indirect effects of practising the pragmatistic method, that is quite another affair. (CP 5.464, 1907.)

Although the pragmatic maxim has certain metaphysical consequences—such as the truth of synechism, three category realism, etc—this does not mean that these would necessarily be *deductive* consequences. Instead, it is much more plausible that Peirce took them to be *abductive consequences* that would explain the apparent successfulness of the scientific method and make its success understandable.

¹¹ Peirce explains his notion about the relation of philosophy (of religion) and religion followingly: "And it is precisely because of this utterly unsettled and uncertain condition of philosophy at present, that I regard any practical applications of it to religion and conduct as exceedingly dangerous. I have not one word to say against the philosophy of religion or of ethics in general or in particular. I only say that for the present it is all far too dubious to warrant risking any human life upon it. I do not say that philosophical science should not ultimately influence religion and morality; I only say that it should be allowed to do so only with secular slowness and the most conservative caution." (CP 1.620, 1898)

¹² Peirce stressed the need of logic especially in the *construction* of metaphysical concepts: "[M]etaphysical reasonings, such as they have hitherto been, have been simple enough for the most part. It is the metaphysical concepts which it is difficult to apprehend. Now the metaphysical conceptions, [...], are merely adapted from those of formal logic, and therefore can only be apprehended in the light of a minutely accurate and thoroughgoing system of formal logic." (CP 1.625, 1898.)

"The establishment of the truth of synechism" (5.415, 1905) that the proof of pragmatism requires, does not mean "the truth of universals", if Taborsky means by that the metaphysical doctrine of reality of universals. It is true that Peirce first introduced the term 'synechism' as referring to certain metaphysical doctrine, "that being is a matter of more or less" (EP 2:2, 1893), but later he turned to treat it ultimately as a logical principle:

Synechism is not an ultimate and absolute metaphysical doctrine; it is a regulative principle of logic, prescribing what sort of hypothesis is fit to be entertained and examined. [...] In short, synechism amounts to the principle that inexplicabilities are not to be considered as possible explanations; that whatever is supposed to be ultimate is supposed to be inexplicable; (CP 6.173, 1901)

It is a general pattern in the development of Peirce's treatment of his philosophical concepts that they were composed first as the concepts of transcendental logic (like the three categories and the concept of sign with its components in the 'New List' article of 1867), then treated as metaphysical concepts around the turn of 1890 ("Guess of the Riddle" and the first 'the *Monist*' series of metaphysical papers), and after 1893 return to logical (and semiotical) level leading to the introduction of phenomenology/phaneroscopy and Normative sciences after the turn of the century. His ideal was that whatever is stated in philosophy, it "is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically" (CP 5.4, 1901) though Peirce's actual habit was to hasten into the metaphysical level before the concept was properly derived and developed at the logical level. But if the logic is merged into metaphysics, like Taborsky seems to do, the whole idea of arguing for metaphysical conceptions will get blurred.

Although I have serious doubts concerning the validity of Taborsky's reading of Peirce, I cannot nevertheless say that Taborsky's own metaphysical theory could not describe the ontological processes correctly, it may very well do that. The problem is that I am somewhat puzzled with whether it represents merely a pure formal possibility about the structure and dynamics of the universe, or whether it contains something more. I.e. in a number of her writings, I have so far not found much reasons or arguments to keep it correct, why her system should be accepted, where her concepts come from, what they are for, and what they are in kind. I do not feel to understand it well enough and I do not know whether this inability of mine is caused by my limited intellectual powers and effort or by the possible general unintelligibility of Taborsky's portrait of the universe. Mere impression or vague feeling (that I do have) that it *may* contain some seeds of truth does not suffice—as it would not have sufficed for Peirce either. Taborsky's cosmological metaphysics (though she calls it logical) appears to me as just one alternative in the grand series of *a priori* metaphysics of modern era. At least, it is not clear to me what makes it superior to Cartesian, Newtonian, Leibnizian, Wolffian, Swedenborgian, Kantian, or Hegelian systems (except that it is more updated in regards to physical theory). Without some argument for that, I have no reason to revise my impression (which is, nevertheless, not much more than *mere* impression) that

Taborsky's system is after all much closer to either Hegelian or Platonic one than to Peircean one.¹³

Read the whole context!

Another issue is that Taborsky does not comment anyway on my straight criticism of her conceptions (cf. p.36)—she doesn't even bother to reject my interpretation of her thinking (which is, I repeat, mostly mere impression). She does not comment either on my trials to argue generally that logic and semeiotic was for Peirce essentially a science that does not take account of almost anything that claims the world being "such and such"—and that its principal positive reference to actual reality concerns the nature of (logical) *normativity*. Instead, all that she gives are mere bald counterclaims that her view differs from mine and declarations on what Peirce *believed* (according to her own metaphysical interpretation). Particularly, she counterattacks me by claiming that my "focus is on the particular, the realm of Secondness, and the mental experience of an individual in interaction with a particular object" (it is not, that I understand "mind as a strictly human phenomenon" (I certainly do not), that I reject "complexity as a requirement of biological reality" (how could I ever reject such most plausible truth?), and finally that my "focus on the linear re-presentation of the conceptual image of an object within the mind of [a]n individual human agent is a nominalist/conceptualist analysis and is not a Peircean analysis" (I cannot make any sense of this, because how could a *focus* be an analysis of any sort?). I find these accusations unjust, some even absurd, and the most evidently skewed, partly by her hasty or biased reading and partly by her confused notions about Peirce's 'extreme' scholastic realism, pragmatism, and the concepts of logic and *semiosis*.

The absurdity of these accusations leads to the impression that Taborsky has missed the whole point of my paper, which does not refer straight to the phenomena of life but to our making of biosemiotics, i.e. to how *we* use, apply, develop, etc. those concepts that we like to label as biosemiotic. My focus in this paper was primarily on concepts and only mediately, through the criticism of certain habits to apply and understand certain Peircean concepts, on the living world that we are describing by these concepts. The concepts that we have any access to are *our* human concepts and in that respect (but only in that respect) my focus is loosely speaking on "the mental experience of an individual in interaction with a particular object" as Taborsky writes. We get our concepts through (individual) mental experience, but that is exactly a 'Peircean analysis' (concerning the connection of abductive inference and perception) and it does not belong on "the realm of Secondness," because concepts are not individual things but genuine Thirds.

Taborsky's misreading (of both me *and* Peirce) is most clearly demonstrated in the paragraph about pragmatism in her commentary. She writes as if, according to my

¹³ Peirce wrote about Hegel as follows: "The Hegelian system recognizes every natural tendency of thought as logical, although it be certain to be abolished by counter-tendencies." (CP 5.385, 1878). Similarly, it seems to me that in Taborsky's system, there is no possibility for an actual sign-process to go wrong, to err. If so, the progress in abstract thought is inevitable and the concepts of sign and semiosis are not genuinely normative.

view, pragmatism would "mean practical effects or ability-to-control a perception (p. 7, 13)", and that its effects were "what is 'politically...convenient, economically profitable (p.13)", while I was stating *entirely* the opposite view:

If the only legitimation of accepted metaphysical principles were their practical convenience, i.e. that they seem to have consequences that are politically, morally, esthetically, or religiously convenient, economically profitable, or only entertaining, the acceptance of metaphysics would be a mere ideological choice. And if biosemiotics is relying on that, it too is vitiated to mere ideology. (p.13)

Moreover, it has never occurred to my mind that pragmatism could mean "ability-to-control a perception (p. 7, 13)", because actual perception cannot be controlled, except in an indirect way by the slow self-education process where our *habits* of perception are refined. Nevertheless, an act of perception starts always as an uncontrolled and compulsive reaction, but of course, perceptions can be studied, analyzed, etc. *afterwards*, and that I have tried to do—as speculative as such historical study is always bound to be—by asking "what kind of 'perception' or observation the elements of Peirce's conception of sign are based on" (p.7), because that helps to reveal the intended object of his concept of sign.

Contrary to what Taborsky claims, Peirce *did not* 'specifically reject that "a conception is to be tested by its practical effects" (5.422)', not at least in this particular paragraph that Taborsky refers to. What Peirce did reject in CP 5.422 is that *his doctrine of pragmatism would be* that a conception is to be tested by its practical effects, i.e. that his pragmatism would mean mere the testing of conceptions. The testing of conceptions by their practical effects does belong to pragmatism, but Peirce's point is that at least his Pragmatism is much more than just that. Pragmatism is basically a conception about the *meaning*—not truth—of concepts, as the maxim of pragmatism declares. Moreover, it is even absurd to deny that conceptions were not tested by their practical effects—what else is done in all the laboratories that practice scientific research—and Peirce (self-characterized as a 'laboratory philosopher'), if any, certainly was the most aware of that.

This is not the only oddly interpreted reference to Peirce's writings made by Taborsky. In this short commentary, I have found several other short quotations of Peirce that evidently does not support the views what Taborsky presents them to support—if they are just re-read within their original context.

For instance, Taborsky writes and cites Peirce:

The Peircean mind is a property of the collective, whether of molecules or plants, for "the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase in knowledge" (5.311, capitals in original).

However, if we look at the whole paragraph (CP 5.311, 1868)¹⁴, it is evident that Peirce was *not* talking about the mind as the community of molecules or plants, but about *our*

¹⁴ In fact, if we just look at the whole sentence that Taborsky quotes from Peirce, we can see that the subject of the sentence is not "the conception of reality", but "the very origin of the conception of

cognition, our conception about the real, i.e. about our awareness that the *objects of our* cognition can be *real* or *unreal*:

And what do we mean by the real? It is a conception which we must first have had when we discovered that there was an unreal, an illusion; that is, when we first corrected ourselves. (CP 5.311, 1868.)

The community that Peirce refers to *here* is rather the mind as a community of temporally ordered momentary egos that are connected together (and transformed to each others) with signs. Though some communities of ‘molecules or plants’ might perhaps be classified as minds in some quite primitive sense, I have serious doubts that any such (non-animal) communities could possess such ‘higher’ mental abilities as an awareness concerning ‘their discovery of the unreal’.

Another example where Taborsky misconstrues Peirce’s ideas about the natural sign is the case of the acceleration of the pulse as a *symptom* of fever (CP 5.473, 1907). Contrary to Peirce, Taborsky claims that “a symptom and a sign are not identical” and construes a completely different ‘sign’ than Peirce did by stating that, in the given example:

“acceleration is the interpretant of the full sign, where the bacterial input (the object) is mediated by the immune system of the body (Representamen) to produce an interpretant fever”.

In the paragraph that Taborsky refers to, Peirce’s own example was much more common sensical—he classified the *relation* between acceleration of pulse and fever as dyadic and indexical and compared it with the similar kind of relation between the rise of the mercury in a thermometer and an increase in atmospheric temperature. Peirce did not talk here about the supposed bacterial cause of the fever or immune system that would be the hidden components of complete triadic sign relation. Instead, the example was that the produced *mental representations* of those *dyadic* indexical *relations* complete them as triadic signs. Moreover,

“if the thermometer is dynamically connected with the heating and cooling apparatus, [...], we do not, in ordinary parlance speak of there being any *semeiosis*, or action of a sign, but, on the contrary, say that there is an “automatic regulation,” an idea opposed, in our minds, to that of *semeiosis*.”

I.e. Peirce seems to hesitate to count the functioning of cybernetic systems of “automatic regulation” among semiotic ones, though he bases his hesitation only on “ordinary parlance”. Although I would be ready to renew ‘ordinary parlance’ (though not to the extent that Taborsky would) so that such automatic regulations (with some

reality”, i.e. the very kind of experience (familiar for *humans*) that *our* conception of reality is based on or derived from.

additional qualifications) might be counted as (primitive) mental or semiotic processes, Peirce’s opinion about his own concepts of sign and *semeiosis* should nevertheless be taken seriously, when *his* ideas are interpreted. Moreover, as I tried to argue in my paper, there are also some deeper reasons to hesitate applying Peirce’s concept of sign in such cases. Taborsky’s way to apply the concepts of object, representamen, and interpretant seems to me quite arbitrary and ungrounded. All that I can suggest is to take seriously Peirce’s Ethics of Terminology—within it much of the mysticism is peeled off from Peirce’s vocabulary.¹⁵

Scholastic (or Scotistic) Realism of Peirce

If the merging of logic into metaphysics in interpreting what Peirce meant is one source of error in Taborsky’s understanding, the other as obvious one seems to be her understanding of what Peirce’s Scholastic Realism is. Peirce defines it followingly:

the scholastic doctrine of realism [...] is usually defined as the opinion that there are real objects that are general, among the number being the modes of determination of existent singulars, if, indeed, these be not the only such objects. But the belief in this can hardly escape being accompanied by the acknowledgment that there are, besides, real *vagues*, and especially real possibilities. (CP 5.453, 1906)

The ‘ordinary’ scholastic realism accepts thus the reality of Thirdness and Secondness, i.e. that *there are* real generals (‘Thirds’) and existent singulars (‘Seconds’). Peirce’s own ‘extreme’ extension of it is the additional acceptance of the possibility of real *vagues* (or possibles), e.g. that the slight mismatches between our scientific knowledge and the phenomena that it describes or explains can be also due to vagueness of reality itself and not always entirely to our limited human ability to know. However, what is noticeable here (and almost everywhere in Peirce’s text), is the phrase “there are”—Peirce is *not* saying (anywhere!) that *all* generals were real though Taborsky seems to believe so by claiming:

The author rejects universals as real and considers that ‘some are’ real but not all are real (p.4) while Peirce, a scholastic, states “generals must have a real existence” (5.312).

¹⁵ Especially Taborsky’s use of the term ‘argument’ is something that I cannot reach. For Peirce, the Arguments were the signs of the most developed type (in his 1903 typology), i.e. the signs that are most completely self-controlled. The most common examples of arguments that Peirce used are *Modus ponendo ponens*, *Barbara*, etc. and that should hint at what level Peirce was talking in most of his texts concerning Arguments. I doubt whether there can be found any arguments in natural processes except in extremely rational human thought, because the act of an Argument-sign requires a full self-awareness about this movement of mind itself. Taborsky’s claim that “The Peircean sign is an inclusive triadic argument, and not, as this author suggests, a linear movement of a meaning from one site, utterer, to another site, receiver” is in the one point correct, but in many other senses completely absurd. 1. Arguments form only one (though the ‘highest’) type of signs and especially in *biosemiotic* application, the more primitive types of signs must be more common. 2. It is not me but Peirce himself who uses the external communication between utterer and interpreter as the prototype for the sign *action* (in his late derivation of the concept of sign)—for me, that approach is not so convincing (though it has its merits). 3. The act of an Argument is linear movement of thought from premises to conclusion—thought is linear though the signs that mediate it were triadic. The only point where Taborsky is right here is that both Peirce’s original motive and purpose for his sign theory was to analyze Arguments, to compose a valid logical theory of rational thought. If this is so it is far from clear how it can be “an excellent base for the analysis of information processing in natural systems” as Taborsky concludes.

It is not my invention that ‘some but not all generals are real’—it is almost straight quote from Peirce himself:

[...] *some* general objects are real. (Of course, nobody ever thought that *all* generals were real; but the scholastics used to assume that generals were real when they had hardly any, or quite no, experiential evidence to support their assumption; and their fault lay just there, and not in holding that generals could be real.) (CP 5.430, 1905.)

Peirce expresses his conception quite strongly by saying “*nobody ever* thought that *all* generals were real” which must mean that at least *he* has never held such a view—i.e. that this quote (CP 5.312, 1868) from (relatively young) Peirce that Taborsky refers to should not be understood as Taborsky does. It is another thing to say—as Peirce said (from transcendental perspective)—that “all [...] that we perceive or think, or that exists, is general. So far there is truth in the doctrine of scholastic realism.” (CP 3.93 Fn P1, 1870.) If all generals (or universals) were real, there would be no conception of unreal, and consequently no conception of real either, since it was defined to be based on our (fallible) ability to make distinction between real and figment (unreal):

Nomenclature involves classification; and classification is true or false, and the generals to which it refers are either reals in the one case, or figments in the other. (CP 5.453, 1906)

How should the phrase “generals must have a real existence” (CP 5.312, 1868) then be understood? The key is that Peirce thought of himself as an Aristotelian scholastic realist and not as Platonic one. While in Platonism, the abstract ideas (or Platonic forms) form the ‘true reality’ for which their concrete material instances are mere imperfect and distorted shadows,¹⁶ the Aristotelian tradition look them other way round. Abstractions and general ideas can be real but “that which is general has its being in the instances which it will determine” (CP 2.249, 1903). And here, Peirce’s criterion of having “experiential evidence” for the reality of a general becomes more concrete. Though Peirce did not make a sharp distinction between the real and the existent in his early philosophy (that he himself deemed later as being too nominalistic), this distinction is essential in his more mature later philosophy. Generals and existents belong to different categories: real generals, i.e. real *thirds*, do not exist, because individual existents belong to the metaphysical category of *secondness*, but in order to be *real*, a general must have (at least some) *existent instances*.

Some short replies to Witzany’s impressions:

a) It is true that in contemporary mainstream philosophy there are common conventions to associate ‘objective’ to absolute and necessary validity and ‘subjective’ to irrelevant, etc. By introducing the term ‘objective perspective’, I did not, however, refer to any such associations. The objective perspective does not (necessarily) lead to objectively

¹⁶ Peirce criticizes the “strange union of nominalism with Platonism, which has repeatedly appeared in history” (CP 8.10, 1871) and which has often been confused with realism by the thoroughly nominalistic modern philosophers ignorant of medieval disputes. According to Peirce, however, the question of “Platonism passes quite beyond the question of nominalism and realism” (CP 5.470, 1907). It may be that Taborsky’s thinking is in its heart rather Platonic (whether nominalistic or not) than Aristotelico-Scotistic Peircean kind.

valid statements¹⁷, it does not even contain the assumption that there is a unique objective perspective. Its main content is that the distinction between an investigating subject and an investigated object is clearly made. This distinction can not be maintained in the transcendental perspective. From an objective perspective, it is possible to consider even such merely subjectively approachable ‘objects’ as one’s own mental states; all that is needed for such a consideration is a methodical split into observing mind and observed mind and to not confuse these roles, as in transcendental philosophy. But if Witzany feels more comfortable if the perspective is called rather ‘objectivistic’, I have no serious complaints to that.

b) A kind of action theory is included in Peirce’s logic (because logic/semiotic is a special species of Practics/(ant)ethics and because pragmatist concept of meaning is defined on terms of possible practical effects). It is correct that ‘objective ethics’ is inappropriate name to science that studies a concept of anticipative or constructive representation—Peirce himself ended up to term ‘Practics’ though he first talked about ‘Ethics’ referring to second normative science.

c) If talk about ‘living systems’ is taken to refer too tightly to system sciences, something like Witzany’s suggestion for the characterization of the scope of biosemiotics would do as well, though I would prefer slightly more generally, “investigations of sign-action within and between organisms”.

The suggested three leveled Biosemiotics that Witzany did not recognize (his 2nd general comment) in my article was described in Ch. 5: the applied and objective correspondents of Peirce’s three normative sciences (Logic/semiotic, Practics/antethics, Esthetics). Biosemiotics could thus be divided into mutually dependent subdisciplines concerning *natural cognition* (applied objective logic/semiotic), *normative action* (applied objective Practics), and *natural (self-)normativity* (natural interests, values, etc.) itself (applied objective esthetics). However, how sufficient or successful such an approach will be is dependent on what kind of basic prototype for concept of sign appears to be the most appropriate—a question that Witzany’s first general comment implicitly raises.

The final comment—which way to choose?

By wondering “which subject of knowledge uses “logic” and “logical” processes”, Witzany hits to very fundamental starting point choice—what is the most basic form of general sign action from which the concept of sign is to be derived. I have tried to argue that Peirce’s approach is basically an individualist one, i.e. it is based on perspective of individual cognition and all its communal and communicational emphasis presuppose that.¹⁸ There are Peirce scholars that have contrary opinions on what is most basic in

¹⁷ Konrad Lorenz has expressed this principle nicely (though in somewhat different context): “»Denknotwendig« bedeutet (...) keineswegs etwa »absolut gültig«” (Konrad Lorenz: Kants Lehre vom apriorischen im Lichte gegenwärtiger Biologie. In *Die Evolution des Denkens*, (eds. Konrad Lorenz & Franz M. Wuketits) Piper; München 1983 [orig. 1941], p.103.)

¹⁸ Most of all, Peirce’s triadic concept of logical sign seems to be derived in *both* of his derivations from individualist perspective.

Peirce's thinking and perspective, but despite that, the individualistic approach (that I would not nevertheless call 'solipsistic') is possible in biosemiotics—and Peirce gives good arguments on its general primacy over a communal one. Mark Bickhard's interactivism and the approaches of both Jakob and Thure von Uexküll seem to share such an individualist perspective—as do many other approaches deriving more or less remotely from Kant's transcendental philosophy (e.g. phenomenological philosophy). So far I have followed this path in its Peircean pragmaticist mode, but I am not at all deeply convinced that it is ultimately the right one.

The other possible source of the mental concepts for biosemiotics—which so far seems to me incompatible with the individualist one—is the approach of network interaction, the collective, communicational, or systemic approach. This has been the mainstream approach in the 20th century, while the individualist one is nowadays perhaps somewhat more old-fashioned, though not necessarily in our marginal biosemiotic community. About the semiotic sources of biosemiotics, Gregory Bateson, the entire structuralist semiotics, and most approaches rising from contemporary linguistic theories (information and communication theories) including analytic language philosophy (influenced by Wittgenstein) start from social communication paradigm. Witzany stands clearly in this camp with his Habermasian transcendental philosophical convictions. Also the statistical approach of population genetics supports network scheme as well as network models of cognitive science.

Both approaches have their own merits and weaknesses. In order to mention only a few, the major weakness or difficulty of the individualist starting point is to determine or define the boundaries of the 'individual', the semiotic agent that interprets signs or to whom signs are meaningful. This is difficult especially in biosemiotics, because living forms are (as Hoffmeyer has somewhere emphasized) swarms of swarms. The organism is the community of organs, tissues, and furthermore, of cells that are semiotically interacting (according to the basic biosemiotic assumption). Moreover, organisms are themselves interacting in populational, ecosystemic, etc. communities. What signals are meaningful signs and what processes are (self)-functionally end-directed are depended on the semiotic agent who is assumed to have such interests and meanings. What is sign to my liver is not necessarily sign to me as a whole (but just a natural force, physiological constraint, etc.) though its influence may be very significant to my whole life. Thus, the network approach might seem more suitable starting point particularly for biosemiotics. However, this communicational starting point has its own difficulties concerning the concepts of meaning, value, etc. Namely, it seems to me that in this approach, one is either forced to ultimately rely on inexplicable intuition about intentional meaningfulness (like phenomenologists in the individualist approach) or to practically eliminate or reduce the whole issue of meaning as in many approaches of information theory and cognitive science. The former lead to dualism without any satisfactory bridges between mind and matter, body and soul, human and other forms of life, or experiential and experimental. The latter leads to structuralism, either formal or Platonic, or alternatively to mechanistic materialism, and they does not seem to provide such bridges either. The Peircean starting point, with all its incompleteness and limitations, has so far seemed to me the most promising starting point in order to bridge these dualistic gaps without any needs to invoke inexplicabilities.

Be it as it is, but so far I am quite convinced that independently on the chosen basic prototype for the mental concepts of biosemiotics, the kind of attitude of semiotic

naturalization have to be taken, if we ever wish to reach any fair mutual comparison about the pros and cons of these two basic starting points. The major benefit of objective perspective and the method of semiotic naturalization are that they make the communication more transparent and the meanings communicated clearer, and it is possible, that Peircean approach should after all be restricted to this methodic level too.