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Swampman encounters an Immediate Object

Social and psychological reductions of signs: some discussions of the critics of *Natural Propositions*

In the book *Natural Propositions* (Stjernfelt 2014), I give a detailed presentation of Charles Peirce's theory of propositions - not only in the interest of charting uncovered territory in Peirce philology, but also because Peirce's original doctrine has important bearings on a number of actual questions in semiotics, cognition and philosophy. The book has been the occasion of a number of pretty detailed reviews - among which no less than two appeared in *Cognitive Semiotics* - here, I shall face some of the objections and develop further some of the proposals of those criticisms.

To put it briefly, Peirce generalizes the concept of proposition to "Dicisigns". The immediate reason for the generalization is the idea, originating in the 1903 *Syllabus*, of a semiotic system built from trichotomies each of which are taken to be exhaustive. This implies that the age-old logic distinction *term-proposition-argument* is generalized so as to cover all signs. This gives Peircean propositions a vastly extended extension which is supported by the *functional* definition of Dicisigns. They are signs to which truth-values may be ascribed - and the functional reason for this lies in the double function of these signs: simultaneously, they *refer* to some object or sets of objects and *describe* those objects. Oftentimes, this takes place by means of the Dicisign having two distinct parts, each of them responsible for one of these functions, like in linguistically expressed propositions ("This is good", "John loves Mary") - with the Subjects of "This", "John" and "Mary" being described by means of the Predicates "__ is good" and "__ loves __". But an important aspect of Peirce's generalization of the Subject-Predicate structure of propositions is that language is but one possible way to express Dicisigns among others. Dicisigns may be expressed by gestures (like combining the pointing gesture towards a person (S) with circling the index finger at your temple (P) to express the equivalent of "He's crazy"), by photographs, paintings, diagrams, or indeed by a large number of cross-combinations of different media of expressions. A staple example of a Dicisign in Peirce, thus, is a painting with a legend, the legend pointing out the subject of what is described predicatively on the painted canvas.

Being functional, Peirce's definition is simultaneously semiotic: the important thing is the type of sign function expressed. For that reason, Dicisigns are independent not only of language, but also of the existence of human mind, consciousness, or intention taking a "propositional stance". Such supporting structures may indeed express, scaffold and process propositions to important levels of speed and complexity, but they are not, in themselves, *definitory* of propositions.

So another upshot of the Dicisign doctrine is that propositions are no human privilege but may be found in biological cognition and communication as well - indeed it may be argued that propositional structure is fundamental to such biological processes because signs unable to carry truth values would be inefficient to biological purposes.

In the book, I frame the critical discussion of Dicisigns (ch. 3) within the basic anti-psychologism of semiotics (ch. 2), after which I trace a number of possible consequences for naturalization and "non-conceptual content" (ch. 4), primate cognition (ch. 5), biosemiotics (ch. 6), and the variety of human Dicisigns as an extension of the Extended Mind hypothesis (ch. 7). Further chapters address types of Peircean iconicity (ch. 8), natural kinds (ch. 9), "theorematic" vs. "corollarial" reasoning (ch. 10) and Peircean pragmatism as an Enlightenment doctrine (ch. 11).

Loosening propositions from language as well as from human intentionality, the Peircean doctrine of Dicisigns appear to me to form a novel way of approaching the much-discussed issue of naturalization. The extension and character of that concept, of course, acutely depend upon what you take to be natural. Arguing for the natural appearance of Dicisigns long before human mind and language, Peirce's doctrine implies that propositions are natural inhabitants of the world, challenging us to construct a world view in which semiotic processes are in no need of being dissolved into ontological categories assumedly simpler, but are rather taken to be as fundamental as the biological processes which they serve.

Is it a bird, is it a plane ...

Ahti Pietarinen, in his review, takes the occasion to ask for some further developments of the argument presented in the book. I can not here meet all the important challenges he presents, but let me address a couple of them. Pietarinen rightly argues that many current, competing proposals for the naturalization of propositions, unlike Peirce's, may lead directly back into psychologism - taking it to be some special properties of mind as such, of the human mind particularly, or of certain speech acts, which ultimately make of propositions what they are. In this connection, he marshals Davidson's famous Swampman argument against causal-history based accounts of semantics and reference: "... those who have tried to dismiss the evolutionary dependence chain for the possibility of representation have resorted to some exotic thought-experiments – most famously to that of Davidson's swampman argument." (300) Davidson's thought experiment imagines himself going into a swamp only to be killed by a lightning bolt; immediately after, by pure coincidence, another lightning bolt happens to assemble a molecule-for-molecule copy of his body, called Swampman, not without certain complications.¹ Anyway, Davidson claims that the creature will have the exactly the same mental contents as Davidson, but without his causal history and so will not have any real mind,

reference, semantics, ability of recognition etc. if these depend upon causal history (Davidson 1987, 443–4). Compared to the vast discussion of it, Swampman has a marginal role in Davidson's production, but seemingly leaves us with but two choices: accept the link between causal history and semantics and refuse the identity of two physically identical organisms - or reject that link and be thrown back into a psychologism where it is mental states rather than causal history that determines semantics. My Peircean argument addresses the perception-action structure of organisms and its causal history of evolution as responsible for the biological adaptation to logical and semiotic structures – would it be targeted by the Swampman argument? Let us generalize Davidson's argument to cases where the mind is not central. If the Earth happened to pass a magnetic cloud which wiped out all life in the biosphere - and immediately after passed a radioactive cloud rearranging the molecules so as to refashion exactly the same biosphere, would the organisms in it now be living, would they be adapted to their surroundings, would they cognize that environment, etc.? Would biosemiotic signs cease to be signs? I cannot see why they should (so I would probably also accept Swampman as a proper stand-in for Davidson). But not for mental-state reasons - rather, because my argument pertains to the structure linking organisms to their environments. That structure is probably possible only as the result of a shorter or longer evolutionary process - making Davidson's thought experiment one of those characterized by Dennett as going beyond the reliability of our intuitions. What if an all-powerful god destroyed the known universe completely, only to reshape it, the next moment, molecule-for-molecule identical? Would it be a different universe in any sense - even all the signs of its supposed history will now be put there deliberately? Just as with Swampman, pragmatism would urge us to say no, it will be the same universe - because no conceivable action would see any difference. But, again, that would not be for mental reasons. Pietarinen argues that actual experiments with alternative, evolvable genetic codes might prove to be able to empirically support or falsify Dicsign-like theories: if such new organisms turn out to have Dicsigns, the Swampman argument will be empirically refused. As my argument is structural rather than historical, I agree: if the very same structures prove evolvable or replicable or realizable by other means, they will, of course, be Dicsigns.

A tougher challenge appears when Pietarinen says: "Stjernfelt argues that it is the spatial, topological, and co-localized phenomena that give rise to the complex of dicsign structures. Here, I worry about how far co-localization alone can take us; it cannot merely be a metric kind of co-localization or proximity because, on the one hand, those are topologically void and, on the other hand, the power of symbolized propositions lies precisely in that they may succeed in denoting indefinitely remote objects. In the latter case, co-localization seems to function rather by way of habitual connections." (301) Pietarinen is right indeed that the notion of co-localization only takes us so far and is in need of further elaboration and investigation; rather, I suspect

it may prove to form the entrance-gate to a whole range of deep issues of semiotics and logic. The importance of co-localization lies in the question of what makes Subject and Predicate synthesize into a generalized proposition when there we can no longer, as in the narrower linguistic case, posit a rule-based syntax taking care of it? The immediate answer, in the *Syllabus* account for the unity of the proposition, is the co-localization of the signs for Subject and Predicate, respectively. The example of painting-with-legend may make the idea clear: the small plate with the title of the painting should be on the frame, on the back side or otherwise near to the painting in order to be recognized as indicating the subject relevant for the painted surface. In some sense, they should be co-localized. The theoretical argument is a bit Byzantine and closely connected to the issue of the sign's Immediate Object discussed below. The idea is that the truth claim of a proposition is equivalent to the claim that the sign is interpreted as an index of its object, granting the connection between the two. But as the interpretant is a sign of the very same object, it follows that this index must, in itself be part of the object of the sign. And as an index is dual, the proposition must have a dual structure. So the sign has *two* related objects, the primary object referred to, and a secondary object which is the (claimed) indexical connection from the object to the sign. But then the sign must also *describe* that second, immediate object - and how does it fulfil this task? By means of co-localizing the Subject and the Predicate. The very iconic connection between Subject and Predicate in spacetime forms a picture of the claimed indexical connection between the sign and the object. So co-localization does not at all prevent the sign from addressing remote objects, as Pietarinen says: it is not the sign and its object which are or should be co-localized, it is the Subject and the Predicate parts or aspects of the proposition sign itself. But still Pietarinen's question points to a deep issue: mere (short) metrical distance in an Euclidian space is not sufficient for defining the co-localization of Subject and Predicate. Co-localization must be *functionally* defined: the two are fused together, because they are integrated in the same phase of the cognitive-semiotic process. Take firefly signaling: the foreground-background structure of the flash indexically directs attention to the fly (S), and the structure of the flash iconically provides information of the species flashing (P): the two are co-localized because they are but aspects of the same event. Such co-localization is rather topological: S and P are synthesized because they are aspects of the same topological section of the cognitive process - to put it psychologically, they may be perceived in one glance. This argument may be connected to Pietarinen's final observation, pertaining to Soames' concept of "event token" leading into psychological assumptions, where Pietarinen argues that the Peircean conception alternatively makes possible a non-psychological agent conception (303). In human beings and, presumably, other higher animals, it is true that the co-localization of S and P may be psychologically represented in an image uniting the two in the same represented space. But that is a particular, psychological way of processing and representing co-localization. Co-localization is more basic and

has its base in necessity of the two to integrate in the same cognitive phase, only thereby establishing the truth-claiming connection between the two. Habit may indeed add conventions easing co-localization (cf. the different conventional roles of names on the picture frame and in the corner of the painting in Western art - providing a semantic distinction between two different spots of co-localization). Similarly, the metrical distance in co-localization may vary considerably, if only there is a stable habit that the two parts are processed together. But habit could not *define* co-localization, as habit itself is structured as a proposition and thus presupposes the co-localization of its own parts.² It rather seems that co-localization is the candidate of a Peircean primitive.³ Having its basis in formal ontological regularities - objects and properties as being aspects of one and the same basic fact - the appearance and development of co-localization in empirical signs probably covers a wide array of different specializations and conventionalizations subject to investigations.

Soft culturalist semiotics

Helmut Pape's long and intriguing criticism of *Natural Propositions* bases itself on an assumedly very fundamental disagreement with its approach: "I see Peirce's semiotics as a *philosophia a compania*, whereas FS's naturalistic cognitive semiotics represents a sort of an individualistic *philosophia a solo*" (109) Peirce's "... semiotics and logic cannot be captured by a combination of methodical individualism and a naturalization of the cognitive field" (110). I know Pape as a deep interpreter of Peirce, which is why I was somehow surprised to read these criticisms. I find them fundamentally misguided. Pape repeats the charge of "methodological individualism" all through his long discussion - but nowhere at all in the book can any claim for methodological individualism be found, nor for any "philosophia a solo". Quite on the contrary, several themes addressed in the book point in the exact opposite direction - the emphasis on species capabilities rather than individual capabilities; the notion of dialogue in reasoning; the emphasis on signs as cognitive extensions transgressing the individual psyche and where it is the rule rather than the exception that they are developed in dialogue and addressable by a multitude of different individuals; the Peircean notion of "mind" as different from and more encompassing than that of the individual mind and its conscious experiences; the emphasis on Peirce as an Enlightenment thinker where the community of many individuals take the enlightenment process further, guided by what I call Peirce's Enlightenment maxims - all of this goes against individualism in the sense that cognitive processes should be something taking place in the isolated conscious mind of the individual only. Seemingly Pape confuses my attempt at reinterpreting naturalism with individualism - both of his critical quotes above connect individualism and

naturalization. But I do not at all take naturalization to imply individualism, just as I do not take it as implying nominalism (cf. the discussion in ch. 4).

But discussing nominalism, maybe it is really another thing which is annoying Pape: he also complains about my "realist bias" (110) - which is indeed true but also a much stranger thing to attack when speaking about a figure like Peirce who took pride in his self-described "extreme realism". It is as if Pape's emphasis on "philosophia a compania" not only soundly immunizes him against individualism, but also, less soundly, makes him assume nominalism in the guise of the relativist idea of truth as something relative to different (cultural) groups. On this basis, he addresses a number of so-called "methodological problems".

Pape's methodological problem no. 1 is the strange claim that the concept of dicisigns adds nothing empirical to biology: "... such a thesis adds nothing on the level of empirical, observable properties to the understanding of the physiological-biological processes involved." (111) But scientific concepts *never* add observable properties - that is the issue of observation, experiment, data collection. The role of concepts is to form parts of idealized models which - in successful cases - are able to organize data and make them explainable. My claim is that the Peircean conception of Dicisigns - including all the related accounts of the composition, unity, extension of Dicisigns and, in turn, their relation to connected concepts like rhemes, arguments, icons, indices, etc. - may unite a range of semiotic phenomena much too often kept apart in barren metaphysical dualisms. Pape adds a further claim: "At the same time, FS assumes that it is obvious that generalizing propositions into dicisigns is equivalent to understanding them as diagrams. That is to say they are signs whose use and understanding depends on their complex iconic structure " (112). Again, that is a claim I do not make at all. Quite on the contrary, I spend the most part of a chapter (ch. 7) on how the predicate part or aspect of Dicisigns may take many different shapes, nouns, adjectives, verbs, pictures, images, gesture - and graphical diagrams. Of course, the Peircean co-localization hypothesis implies that all propositions iconically connect, in some way, its S and P aspects - and that syntax is indeed "iconically complex" to the degree that it consists of several parts or aspects. But that is in no way the same thing as identifying Dicisigns and diagrams. Pape may also refer to the idea - referred to in the book several times - that all deduction takes place by the manipulation of diagrams, but that is a central Peircean doctrine not of my invention. Pape sums up this criticism: "But if almost every cognitive process becomes a diagrammatic one this concept loses its empirical signification." I am not sure I understand this. Compare the claim that all atoms consist of elementary particles - does that make the concept of elementary particles lose its empirical signification? Does Pape's claim that all meaning is group meaning "lose its empirical signification" (I do not think it does, I just think it is plainly wrong). It is as if Pape is offended by the Peirce's simple idea of giving the concept of diagram a technical definition whose extension prove to be broader than that of the naive notion

of diagram. But science could not progress and simultaneously keep the received semantics of spontaneous ordinary language concepts.

Pape's *Methodological Problem No.2* is a bit similar: that, in the generalization leading to the Dicsign concept, trivialization threatens: "However, it seems doubtful to me that much explanatory value is gained, if we call the use of a visual presentation e.g. reconstructed pictures from the Zapruder film presenting the positions of President Kennedy relative to the trajectories of the shots fired at him on November 22 1963 in Dallas "visual dicents"." (113) Here, Pape refers to a discussion in ch. 7 of a computer model integrating all existing knowledge of the assassination site in one simulation. So that not only deals with "reconstructed pictures" but with a whole spatio-temporal model *facilitating inferences having truth claims*. So that discussion comes out of Peirce's basic definition of Dicsigns as signs that may be truth-claiming. Whether those claims are indeed true is another case - but the semiotically interesting fact is that many different signs "in the wild", not only purely linguistic ones, are *actually* used to make truth claims. That corroborates the Peircean generalization of the concept of propositions - such is my argument. Pape seems to imply an evident alternative definition of such visual signs - but he does not make it explicit at all. Are truth claiming signs really of linguistic nature only? - I think that is basically wrong given the role of many different diagrams, pictures, gestures etc. participating in truth claims in reality.

Pape's *Methodological Problem No. 3* claims that competing theories exist, with narrower scope, which are able to explain the same things: "P. F. Strawson has called the "basic connection" of subject and predicate term and what in information theory is called source of signal and frequency of signal relative to a channel, cover roughly similar phenomena each in a much more restricted universe of discourse." (113-4) This criticism I do not understand - does Pape really mean that standard Shannon information theory exhaust semiotics? - could the wide variety of types of predicates be translated into "frequency relative to a channel"? I doubt that, particularly as Shannonian information depends upon discretization of information into countable bits while an important implication of Peirce's generalization is the inclusion of continuous predicates not thus discretizable.

Many of Pape's criticisms are really peculiar: "It is due to FS's project of naturalization of the dicsign that he does not see that every dicsign acquires a truth value only if it becomes an assertion. But nowhere in this book the connection between assertions and proposition is acknowledged and discussed." (114) ⁴Actually, I explicitly address Peirce's speech act theory concerning exactly this distinction several times in ch. 3 (e.g. 3.4; 3.14).

The crux of all this, however, seems to be Pape's culturalist idea that meaning is relative to "communities of interpretation": "the community of investigators and communication, have no role in this naturalistic picture" (115). As already noted, many themes in the book runs counter to this individualist caricature.

But Pape's criticism here relies on a radical dichotomy between individuals and communities where he needs to deny any degree of autonomy of the former in order to maintain the ultimate and dominant role of the latter: "... he cannot see that Speculative Rhetoric explains the leading principles and rules of sign-processes with reference to the truth and assertion conditions that hold for a community of investigation and interpretation. (...) But Peirce's semiotics is complete only if speculative rhetoric succeeds in explaining how sign-processes depend on conditions of communities of interpretation" (115). Here probably lies the deepest level of the differences between Pape's and my interpretation: to me, sign processes may take place on all levels from individuals over microsocial groups to larger communities to overarching historical developments. Pape, on the other hand, seems to ascribe an ontological priority of communities over individuals so that "conditions of communities" determine meaning over and above the vain efforts of individuals. To me, that is a variant of culturalism which is detrimental to any clear conception of the enlightenment process (as to culturalism and its problems, see Eriksen and Stjernfelt 2012). It is ironical to find such a conception in the interpretation of the figure of Peirce – if any an idiosyncratic, creative individual whose contributions were, to a large degree, cut off from interaction with and received little recognition from scientific communities!

A much more particular question occupying Pape, however, regards the interpretation of an important theoretical concept in the semiotic theory of the mature Peirce, namely that of the "immediate object". Here, Pape and myself hold two pretty different interpretations - and Pape simply thinks my interpretation is wrong. I claim that the *immediate* object (IO) is a concept addressing the way the sign is connected to the object (or is claimed by the sign to be so connected), while the opposed category, the *dynamic* object (DO) is the object of the sign as existing independently of the particular sign relation. That is, IO refers to the identity and the reference to the object - not to any description of the object, because the task of description is fulfilled by the no less than three concepts of interpretant (immediate, dynamic, final, respectively).

Pape finds my interpretation so evidently erroneous, that he adorns his argument with irony: "Peirce calls, time and again, the immediate object "the idea the sign is built upon" (MS 318) or as the "Object as cognized in the sign" (CP. 8.183), it seems difficult to avoid some sort of content for the immediate object." Instead, from FS, we learn to our great surprise, that "the Immediate Object *is* the claimed indexical connection of the sign with its object" (98). Now, ideas and indices don't go together well." (116) But here, Pape simply bypasses the array of references and arguments I discuss in establishing my point of view (ch. 3.13). The problem, however, is that Peirce is not himself unanimous on the issue. I gladly admit that Peirce sometimes (cf. the above references) speaks of the Immediate Object as if it

were some kind of idea or conception or picture of the object such as Pape strongly prefers.

But let me marshal some of my arguments for the IO as an object category. It is quite right the immediate object is a concept regarding the knowledge of which objects the sign is about, a knowledge which must be shared by users of the same sign. Peirce's term, however, is not "common knowledge", but more precisely "collateral observation" so it is common agreement about *reference* to an object - not to be confused with Pape's vague Heidegger-Gadamer *Vorverständnis* (116). Peirce says, for instance: "The Mediate Object is the object outside the Sign; I call it the Dynamoid Object. The Sign must indicate it by a hint; and this hint, or its substance, is the Immediate Object." (Peirce 1977, 84)

Indicating is, as the word says, performed with the use of an index - and the whole complex concerning indicating, designating, referring, or denoting objects is consistently distinguished in Peirce from the complex of describing, predicating, signifying, meaning, etc. In not realizing this, Pape falls prey to what Bellucci (in press) calls the "Fregean interpretation", equating Immediate/Dynamic Object with the dichotomy of *Sinn/Bedeutung*. But the Immediate Object is not a picture or conception of the object - in a proposition, it is the Subject part which points out which object is referred to - or provides a recipe for how to encounter it.⁵ In order to understand the proposition "There is a house on fire" (a recurring Peirce example), I must have a "collateral observation" enabling me to identify the relevant house intended by the utterer. This idea actually dawns on Peirce exactly during the long, complicated deduction of the structure of the Dicsign in the *Syllabus* referred to above. There, it was called the "secondary object": the claimed indexical relation between sign and object which only attaches to parts of the object. In case of "There is a house on fire", if an already shared collateral observation is absent, it may be established, e.g., by a pointing gesture (one of the most basic types of Subject, according to Peirce), providing a physical connection between sign and object. The Immediate Object, then is *that connection, as represented in the sign*. Strangely, Pape in another argument actually seems to realize this: "And the notion of an immediate object has its root right here: for what can be more immediate – Peirce defines the immediate as being without boundary – than an object that forces our attention without involving any conscious, propositional process?" (117) - here, the Immediate object exactly indexically "forces our attention" in the particular direction of an *object* (not in the direction of an idea, conception, description, etc.).

So, Peirce's vacillation regarding the IO is repeated by Pape. But what is the reason behind this vacillation? I think it might come from the pragmatic fact that descriptive features of the object may often *assist* in the identification of it. Peirce's basic principle, the strong distinction between indication and description, is based on the Kantian idea that existence is no predicate - and that no amount of description can

ever exhaust the identification of an object. So no object can be identified by means of description only. Some kind of non-descriptive knowledge by acquaintance (or some indirect guidance of how to achieve such a knowledge) must establish the basis of the connection between the Subject of the Dicisign and the Object it refers to. But given that irreducible foundation, description may, in turn, *aid* in object identification even if it can never fulfill it exhaustively. To take an example: a guy points while exclaiming: "Look at that car over there!" "Which of them?" "The red, not the blue one!" The initial pointing gesture combined with the reference "over there" constitutes the Immediate Object - but is subsequently supplied with descriptive material in order to make precise the object of the pointing (hereafter, some predicative description may follow: "That car is a German car".) Thus, descriptive features may indeed *enter* the Immediate Object to the extent that it serves the identification of the object - but the defining *function* of it remains object identification, not description, which is theoretically taken care of by the no less than three Interpretant categories (immediate, dynamic, final) which shall not occupy us here.

Is there a connection between Pape's two basic thorns in his side: that of the communitarian definition of meaning and that of the Fregean description interpretation of the Immediate Object? They have vastly different status and scope: the former appears as an anthropological and social meaning theory, ripe with relativism, which has no basis at all in Peirce's realism - the latter refers to a much more narrow and precise issue in Peirce interpretation where Pape's claim certainly has some support in Peirce himself. But Pape's refusal to accept the Immediate Object as an Object rather than a Meaning category actually fits all too well his communitarian theory of meaning. If meaning is ultimately granted by "communal" norms forcing or determining the interpretations made by any individual, the possibility of any direct object contact by the individual itself and his or her sign-making must be blocked. If even the very first, immediate contact with any object is *immer schon* imbued with communal meaning and interpretation, the road is closed for the individual to gain independent contact with any world outside of the closed circle of meaning rules of his or her community. Correspondingly, Peircean realism, explicitly rejected by Pape, become impossible: the world will dissolve in the incompatible world-views of different communities. Quite the opposite becomes the result if the Immediate Object actually (in at least certain signs, to be sure) provides a contact to a Dynamic Object, facilitating both individuals and communities of different sizes and characters with the possibility to break established conceptions and develop new ones.

A simple, minded theory of signs

If Pape ultimately relies on the idea that the norms or conventions of communities are deeper than signs, meanings, and even reality, Göran Sonesson's criticism relies upon another classic reduction of signs: namely to their assumed basis in the human mind. Sonesson bases this idea on a fundamentally Husserlian conception of the mind (a version of Husserl after the famous transcendental "turn", to be sure), and it seems as if he regards that position as higher and more refined than one willing to ascribe signs to less noble creatures than the human mind. Otherwise I cannot explain his haughty style, more like a rebuke than a discussion.

Be that as it may. But given this point of departure, Sonesson is unable at all to consider or even grasp the proposal of *Natural Propositions* which is, of course, to reject both the sociological (Pape) and mental (Sonesson) reduction of signs in order to attempt, instead, a functional definition where any definition of communities and minds will depend upon sign structures and processes, rather than vice versa. Sonesson maintains, in a complicated manner of expression which assumedly signifies depth, that signs requires minds and that minds require consciousness (287), and that Peirce and myself "don't even ponder the conundrum" of the emergence of consciousness in the universe (287). Even if placed in good company here, I am not sure I can answer for Peirce who says much about this in parts of his work not considered in my book. But suffice it to say that, in the book, I consider reasons for bracketing consciousness rather than making it the cornerstone of your sign theory (NP, 117), I state a hypothesis of the role of consciousness as an evolutionarily later scaffolding of sign processes (NP, 149) and as a crucial ingredient in higher levels of self-control (NP, 173). But, by Descartes! I do not claim my book contains a rich vein about consciousness which is not what it is about, but I think it borders to libel to maintain that I "don't even ponder" it. Has Sonesson even read it?

Sonesson thus rarely leaves the noble summit of mind but rather uses his theory as a check list with which to measure my degree of deviance without bothering to understand the details of my proposal. Take this example: he compares my biosemiotic examples with those of Hoffmeyer and Emmeche "... with the difference, however, that whereas the former explicate these examples in terms of the Peircean sign, Stjernfelt presents them as inferences. In the end, this difference may not really make a difference: after all, Rheme, Dicsign, and Argument – just like Representamen, Object, and Interpretant – are instances of Firstness, Secondness, and Thirdness. The problem, nevertheless, is that in the Peircean system it is not clear in what respect the different trichotomies are distinct and what they have in common. Stjernfelt does not comment on this issue." (287). First, inferences, to Peirce, are a type of signs. So there is no contradiction in speaking about the same thing as signs and as inferences - only, the latter is more precise. This is pretty clear. The ensuing word salad in the quote just goes to show that Sonesson has not bothered to understand Peirce's sign theory. There are indeed deep problems in that sign theory,

but not of the basic kinds Sonesson assumes - the two set of distinctions he mentions are pretty clear and do not dissolve into each other at all.

But even when Sonesson purports to understand parts of that theory, he goes wrong. Let us continue with the discussion of inferences: " ... whether you pick the E. coli or the tick as your example, there is nothing in the process permitting us to distinguish the immediate and the dynamical objects (whether conceived in terms of meaning or in terms of identity; cf. Stjernfelt, p. 96ff), or the objects and the interpretants – in fact, no differentiation, no matter between which instances you would like to posit it. Let's try to spell out more clearly what is at issue here. The usual gloss of the difference between the immediate and dynamical objects of a sign, in Peirce's conception, is that the former is somehow given directly with the sign while the latter is the further things we can know about the notion signified, adding information from other signs and, if we take a less broad view of what signs are than Peirce's, from all kinds of further experience we can have with this notion" (288)

So, there is "no differentiation at all" in bacteria sign use - presumably because they do not reach the heights of mind of human beings. I think this is simply wrong. The object of the bacterium is the sugar detected by its sensors - and the Immediate Object, again, is the index which purports to put the sign in contact with that object - that is, the weak interaction of the sensors of the bacterium and the active spot on the periphery of the carbohydrate molecule. This leads, in turn, the organism to swim in the direction of higher concentration of the Dynamic Object so detected.

Simultaneously this quote shows how his psychical theory of signs prevents Sonesson from even understanding as simple a concept as that of the Dynamic Object (which few scholars argue about). Sonesson claims that "the usual gloss" is that this is *also* a mental creation constructed after a long process of adding knowledge to the Immediate Object. Both, of course, are mental, Pape, at least, only tried to make of the Immediate Object a meaning category; Sonesson simply swallows all Peircean object categories into the swamp of mental meaning. The return of Swampman, completely cut off from the world. But the Dynamic Object is simply the object as it exists *independently* of any sign-using creature (a bit like in Husserl before his transcendental turn). But Sonesson seems unable to leave the confines of his own psyche.

A more detailed criticism of Sonesson address cases where the Dicsign is not explicitly composed of two independent, juxtaposed signs. This comes out when he writes: "It is curious that Peirce and Stjernfelt behind him think that a picture would ordinary necessitate a label to become a proposition (or at least a quasi-proposition), but that a photograph can dispense with labels and still be a (quasi-) proposition." (285) Neither I nor Peirce claim that a painting *always* needs a label while a photograph do not. The first serves as an example of a Dicsign composed

from two independent signs, one serving as subject, the other as predicate. The second serves as an example of how one sign vehicle may serve *both* of those functions without an explicit separation of them in independent signs (given that sufficient collateral observation is present, so the sign user is able to identify the subject). But that difference has nothing to do with that between painting and photo. A single painting without label could do the same thing, given sufficient collateral information. Maybe this criticism has to do with Sonesson's structuralism. To me, it is no riddle that those two functions (subject and predicate) may be performed by independent signs in some cases and by aspects of one sign vehicle in another - including intermediary cases between the two extremes, where the two signs are present but to some degree distinctly in the same sign vehicle. Here, Sonesson immediately thinks two such cases rather form an indication of something being wrong - why is that? Maybe because he does not think functionally but rather structuralistically - in terms of composite signs being built from minimal signifying units (such being present in the first case, not in the latter).

Another argument begging the question is this one, against the assumed involvement of icons and indices in the subjects and predicates of propositions: "However, if the proposition is formulated with linguistic means, it does not seem to be iconic (nor indexical) in any of the senses discussed above, that is, neither as exhibitiv import, similarity, or visual similarity (except, for isolated cases)." (292) The idea is that even in linguistic propositions, subject expressions inherit a basically indexical function (like in proper names, demonstrative pronouns, etc.) while predicate expressions must be interpreted in terms of schematic icons (like in adjectives, nouns, verbs) in order to be understood. Here, it seems to be the belief in language as a self-contained semiotic system that leads Sonesson to assume that such a system could exist without grounding in indices and icons.

Sonesson excels in superficial paradox-making: why do I begin the book by a criticism of psychologism (which may have given Sonesson and his mind the creeps in the first place) when I devote a later chapter to James Hurford's hypothesis of the implementation of logic in monkey brains? But an interest in psychology and in how cognitive processes adapt to logic and realize it in the mind and action of animals is not at all the same as psychologism. Psychologism is the idea that logic and cognition are *reducible* to mental, psychological or neural processes.

A final argument is this, pertaining to my claim about the adaptation of brain to logic rather than the opposite: "More importantly, however, no matter the direction, this supposes a relation of causality between logical structures and the human mind." (294) - implicitly holding that no such thing is possible. The cause here referred to is probably an efficient cause. But efficient causes work between physical objects - and logical structures are not physical objects. Expressed in causal terms, logical structure would rather be a formal cause of the relevant neural-mental processes. I am not sure whether that fits into Sonesson's mental ontology. Funnily,

all of a sudden he here appears with a physicalist demand of accounting for psycho-physical relations in terms of physical causes! As he himself admits that Husserl would not appreciate this, it is a bit strange why he buys into the argument at all.

My review of this boring array of Sonesson's arguments has been collected in order to try to understand why he is so ill at ease with the proposal of my book. His criticism paints a picture of Sonesson's own position: signs are basically constructs of the human mind - and even reality is but a bit more long-winded product of the same mind. That mind seems to be built from minimal signifying units coming together - and beyond that noble mind, even in other organisms, there is "no differentiation, no matter between which instances you would like to posit it". This deeply subjective idealism where distinctions are all in the head (with a few physicalist spasms) may explain why Sonesson, much less than Pape, does not even *consider* the proposal laid out in *Natural Propositions*. My book uses a reconstruction of Peirce's little-known theory of propositions to propose an alternative conceptual parsing of the whole field of logic-cognition-perception-linguistics-semiotics-biology. I state this aim pretty clearly in the first chapter. Measured on this ambition, I find that just restating one's own traditional parsing of that field does not amount to an enlightened discussion of my book.

On one claim, however, we agree. Commenting upon the book's last chapter, Sonesson muses: "Still, it is interesting that we finally dare to defend our heroes as representatives of the Enlightenment. Maybe the dawn of Postmodernism has finally arrived." (294) I think he means "dusk" rather than "dawn" - if so, we certainly agree in the role of the Enlightenment, both its historical importance, its ethos, its importance for science and politics, its overall aim. But if this is so, we should have a discussion worthy of that ethos!

On a meta-level, Pape's and Sonesson's criticisms aptly describe a basic condition of current semiotics: its split between competing, reductive ontologies. This undoubtedly forms part of the institutional problem of semiotics. Pape represents a soft version of culturalism or communitarianism, according to which the meaning of signs ultimately derive from social group conventions. Even if social conventions decidedly play a role in much of semiotics, I find it is a grave error to reduce signs as such to the social aspects of certain signs, no matter how important those special signs may be. Sonesson represents a phenomenological version of psychologism, according to which signs and their meaning ultimately derive from human mental structures. And even if psychological structures decidedly play a role in much of semiotics, I think it is an equally grave error to reduce signs as such to the psychical aspects of certain signs, no matter how central to human experience those special signs may be.

Actually, the take-home message of my book is a call for a semiotics which avoid such reductions. It claims this is possible by seeing signs not as secondary

products of communities or of minds - but as those vehicles which make communities and minds possible in the first place, by providing structure to elementary processes of communication and cognition.

Here, I rest content with Pietarinen's criticism: he bases his review on a basic understanding of the book's project, and, on that basis, points to pressing problems in the conception and lacunae in its realization. To me, that is an approach in the spirit of the Enlightenment. Moreover, it keeps the notion of sign central to semiotics rather than selling out to neither sociologism nor psychologism.

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¹ As the precise molecule-for-molecule composition of organisms is subject to continuous change, the Swampman copy must be of Davidson's body in his very last moments of living. But as Swampman is created only "nearby", not at the exact same location, Swampman's very first sense impressions must differ from Davidson's very last ones, probably making Swampman wonder why he is suddenly abducted to another place in the swamp - maybe even wondering if he himself is confused. But as Davidson himself would not have done that, the identity between the two falters ...

² Stjernfelt in press

³ Cf. Stjernfelt in press a

⁴ Another reviewer, Sonesson, makes a parallel claim (286). Peirce indeed has a sketch of a speech act theory; however, that is just not the main subject of the book.

⁵ Among propositions, Peirce thus constructs the triad of vague, singular, and general propositions (corresponding to Kant's particular, singular, universal judgments). The existential and universal quantifiers of the former and the latter are then specific ways of indicating their immediate object (as vague and general, respectively) Bellucci (in press) takes this as an indication that only propositions have immediate objects, cf. one of Peirce's standard definitions of Dicisigns: "signs which independently indicate their object", this indication *constituting* their immediate object.