

Habit, Semeiotic Naturalism, and Unity among the Sciences

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Abstract:

Here I'm going to talk about what I take to be the primary significance of Peirce's concept of habit for semeiotics—not just his semeiotics, but semeiotics generally. As part of that I'll outline a view I call “semeiotic naturalism”, which I think helps bring out this significance of his concept of habit. Semeiotic naturalism is the view that many different sciences are directly relevant to answering philosophical questions in semeiotics, where such questions could be regarded as the *unifying* questions of semeiotics as a multidisciplinary science. Such a science also requires unifying *concepts* which play key roles in many different areas of semeiotic research. I argue that Peirce's concept of *habit* is such a concept. After distinguishing between a wide and a narrow concept of habit in Peirce, I suggest how at least the wide concept applies in many different sciences, and, for Peirce, is crucial to the explanation of semeiosis at all levels of explanation.

It's not controversial to say that semeiotics, probably by its very nature, is a multidisciplinary and often interdisciplinary area of research. Not only is it practiced that way today, but many great semeioticians thought it should be that way: Charles Morris [1939, 1]), Thomas Sebeok, and I also think Charles Peirce. Research in semeiotics has gone under names like “biosemeiotics,” “zoosemeiotics”, “semeiotics of culture,” “computational semeiotics”. There's much more research that's relevant to semeiotics that hasn't gone under the name. It spans at least the social and biological sciences, and may incorporate research in other fields. In fact, I don't think it's clear that there is any research field not relevant to understanding some sign phenomena, given the breadth and complexity of such phenomena. Of course, semeiotics also has distinctly philosophical dimensions.

But how might or could there some significant unity to all the research in Semeiotics; that is, how could it be a *unified* science? (arguably it's not a unified science *today*; but in what sense might become one).

First, there should be unifying questions: questions which research in many sciences could be relevant to answering. What is a sign? What is a sign *interpreter*? What is the nature of the relation between a sign and the object it signifies? (that is, what is the nature of the intentionality of signs). These certainly are philosophical questions, but what I'm calling *semeiotic naturalism* is the view that their true answers will involve explanations from a variety of distinct research fields, if not most or all of them. Semeiotic naturalism holds that these questions cannot be answered, or are not best answered, a priori. It's a form of *methodological naturalism*, which holds that answering any philosophical question, relevant to semeiotics, will require answering certain sub-questions which at least some of the special sciences are best suited to answering. Of course it must also presuppose some form of *metaphysical naturalism*; but it can presuppose an innocent form of it, one which holds that the subject-matter of philosophy (or of philosophical semeiotics) includes or significantly overlaps with the subject matters of the various sciences and disciplines—whatever the exact nature of the subject matters may be. (Though I think Peirce's kind of semeiotician would go with a pluralistic or at least non-reductionist ontology.)

The main idea is that the philosophical questions within Semeiotics ought to be regarded as questions to which many different sciences are likely provide part of the answer. In particular, the semeiotic naturalist takes the true answer to the question “what is the nature of the relation between any given sign and its object?” to be complex and most likely involve several different levels of explanation or description, including inferential (or logical), anthropological, historical, psychological, biological, physical and perhaps others.

So, where does Peirce's concept of *habit* fit into all this?

A unified multidisciplinary semeiotic science would also seem to require some unifying *concepts*: or concepts which can be employed across all the sciences addressing sign phenomena (directly or indirectly). Of course, the concept of a sign is such a concept; **but I think that Peirce's concept of habit is also**. On Peirce's view, all semeiosis involves habits, and, in one form or another, his concept of habit applies in many different kinds of theories, including physical, biological, social, psychological, and logical theories. Here, a brief examination of Peirce's concept of habit is in order.

As I understand him, Peirce has two concepts of habit: one wide or highly inclusive, and the other narrow or less inclusive. On the wide concept, “habit” seems co-extensive with

Thirdness. In 1883, he says: “the main element of habit is the tendency to repeat any action which has been performed before. It is a phenomenon at least as coextensive with life, and it may cover still a wider realm” (W4:553). In the 1900s, Peirce seems certain that even non-living things, such as crystallizable chemical substances and streams of water, can possess habits. He writes:

[H]abit is by no means exclusively a mental fact. Empirically, we find that some plants take habits. The stream of water that wears a bed for it is forming a habit. (5.492, 1907)

Let us use the word ‘habit’ ...not in its narrower, more proper sense, in which it is opposed to a natural disposition ...but in its wider sense, in which it denotes such a specialization, original or acquired, of the nature of a man, or an animal, or a vine, or crystallizable chemical substance, or anything else, that he or it will behave, or tend to behave, in a way describable in general terms upon every occasion (or upon a considerable proportion of the occasions) that may present itself of a generally describable character. (5.538, c.1902)

Most widely, for Peirce, a habit is any kind of behavior which tends to be repeated under the same kind of conditions; it is a propensity to behave in a certain kind of way under a certain kind of circumstance (where “behavior” should be understood widely to include anything from one idea suggesting another to an atom’s forming a covalent bond with another). As far as I can tell, on this concept of habit, there are at least three distinct criteria for what counts as a habit and what does not. These are:

1. The Conditionality Criterion: A habit must involve a necessary or probable conditional relationship. That is, it must have an “antecedent” and a “consequent,” where if the antecedent obtains, the consequent either must obtain or has some probability of obtaining. (we could call the antecedents and consequents of habits “inputs and outputs,” “stimuli and responses,” etc., “antecedents and consequents” seems sufficiently general.)

2. The Event Criterion: The antecedent and consequent must involve *events*. So, a conditional such as “If John is 6 feet tall, then Maria has brown eyes” does not express a habit, because the

antecedent and the consequent are not events. On the other hand, “if Maria yells at John, then John cries” may express a habit, because the antecedent and consequent are events.

3. The Generality Criterion: Events that comprise the antecedents and the consequents of habits must both be of general kinds, so that (a) the events can be repeated, and (b) a habit can be real without its antecedent and consequent events ever actually occurring. It is only necessary that consequent event *would* occur if the antecedent event obtained. For instance, a glass vase has a habit of shattering (i.e., it is disposed to shatter) whether or not it ever actually shatters. The vase’s brittle-habit consists in the fact that if a sufficient amount of force *were* applied to the vase, the vase would shatter.

On Peirce’s wide concept, anything that meets these criteria counts as a habit. And by these criteria it seems clear that habits include dispositions and laws.

In order for something to count as a habit on Peirce’s *narrow concept*, the conditional relationship must be of the kind which can be acquired and strengthened with repetition and perhaps weakened or even lost by the lack of repetition. They are acquired habits, or, in his words, they are habits which arise when “multiple reiterated behaviour of the same kind, under similar combinations of percepts and fancies, produces a tendency—the *habit*—actually to behave in a similar way under similar circumstances in the future” (5.487). Here Peirce is specifically describing cognitive habits, but at other places he says that repetitions produce and strengthen habits where he seems not to be referring exclusively to cognitive habits (e.g., 2.712, 1.390, 5.477). But these habits do not apply to all habits under the wide concept. The glass vase doesn’t need to be shattered repeatedly in order to be brittle.

While, as far as I know, the only category of science today which often features an explicit concept of habit is behavioral science or psychology, many others have concepts that fall under at least Peirce’s wide concept. Take the variety of concepts of a *function* across many disciplines. The most obvious is in mathematics, where a function is defined by its set of input values and outputs values; and in physical applications, these values often denote properties of kinds of physical events (e.g., acceleration, heat or electrical conduction). So applied, such functions describe habits on Peirce’s wide concept. A concept of a function is pervasive in the biological sciences (the function of wings in animals is to allow them to fly or glide, which is to say that an animal would fly or glide if it had wings and if other conditions were met). Biological

concepts of a function clearly fall under Peirce's wide (and in some cases narrow) concept of habit. Concepts of a function and similar concepts are pervasive also in the social sciences, such as were we describe the functions of social institutions. Take institutions of economic currencies. Under certain conditions the currency will be exchanged for goods and services. A certain kind of event occurs (the receipt of goods/services) on the condition that a certain other kind of event occurs (the receipt of money). This falls under Peirce's wide concept (and perhaps also the narrow).

So, it *seems* clear (though I don't have any expertise in other disciplines) that not only is Peirce's wide concept of habit applicable in many if not all major fields of empirical research, it seems it could also do a lot of explanatory work in them, as coextensive concepts (like the many concepts of a function) do a lot of work in them.

However, the far-reaching applicability of Peirce's concepts of habit is significant to Semeiotics only if those concepts are crucial to explaining semeiosis at all or most levels of explanation. And, for Peirce, I think *they are*. In particular, they seem to enter significantly into his explanation for how signs, or at least symbols, refer to or denote their dynamical objects. And now I'll explain how.

As is well known, Peirce explains beliefs, concepts, and mental symbols generally in terms of habits of inference, expectation and conduct. And he maintains that "the whole function of thought is to produce habits of action" (5.400, 1878); this, of course, is his pragmatism (or pragmaticism). He says that "to develop [a thought's] meaning, we have simply to determine what habits it produces, for what a thing means is simply what habits it involves" (ibid.). It seems, on his view, all (at least symbolic) cognition essentially involves habits; and since he also holds that all cognition takes place through signs, it seems then that he takes habits to play a central role in semeiosis or sign activity (at least at the cognitive level). Most clearly, they play an essential role in the *interpretation* of signs. He holds that the meanings of signs are their interpretants (or at least their immediate logical interpretants)—so if meaning consists in habits, and the meaning of a sign is comprised of its interpretants, then, it seems, its interpretants consist in habits. In fact, he explicitly says that habits are the essence of logical interpretants (5.486).

But, in Peirce's account, habits also play an essential role in connecting a sign with its dynamical object, such that denotation or reference can be explained largely in terms of habits

(others have made this point, such as Bob Meyers*). However, because Peirce does not make this point so explicit, we have to connect some dots.

First, recall that Peirce believes that interpretants are essential to sign-object relations; he is clear that a sign cannot have an object without also having an interpretant. Also, recall that he distinguishes between the immediate object and the dynamical object of a sign, where the immediate object (as I understand it) is whatever object the interpretant interprets the sign as standing for (which could be something unreal), while the dynamical object is the real thing the sign refers to. It seems clear how interpretants (and thus also habits) put signs into relation with their immediate objects; but how do interpretants put signs into relation with their dynamical objects? (for instance, what role do interpretants play in connecting the word “Jupiter” with the actual planet)

The answer seems to be: through perception and conduct. If the function of all thought is to produce purposeful action (as it is, according to Peirce), then any logical interpretant must play a role in determining some purposeful action. And Peirce says that when the habit involved in the logical interpretant is “conjoined with the motive and the conditions, [the sign has] action for its energetic interpretant” (5.491, 1907). So, under the right conditions, the logical interpretant gives way to an energetic interpretant: some purposeful action.

Now the question is: why does Peirce consider purposeful action to be an interpretant at all? In some sense, the physical action itself also interprets the sign as referring to an object. It’s difficult to make sense of how, except that the action must play some role in the causal and functional relationship between a sign, its interpreter, and its object. In the simplest cases, the action affects the object in such a way that the object in turn has, through perception, a certain other effect on the sign and sign interpreter, namely an effect on how the sign continues to be interpreted. Your belief that there’s a glass of water in front of you (a sign), combined with the desire to drink some, gives way to your grabbing the glass of water and drinking it. Your action (the energetic interpretant of your belief) is directed upon the glass of water (the dynamical object), and that action contributes to an experience which reinforces the belief (i.e., your action affects the object which in turn affects the sign).

The energetic interpretant may not directly affect the object of the sign, but it may be directed on the object in the sense that it’s performed in response to the object and plays a distinct role in the object’s having a certain continued effect on the sign or on the sign

interpreter. For instance, you observe Jupiter through a telescope and think “there is a big red spot on Jupiter” (a thought-sign); this has an effect on your conduct: let’s say you zoom in closer with the telescope (an energetic interpretant), which in turn allows the planet to leave another impression on you: you now notice that the red spot is a gigantic storm in the upper cloud layers. Your action (zooming in) was directed upon the dynamical object (Jupiter) in that it was an adjustment to the way the object could affect you. And as a result of that adjustment you now have a different interpretation of your original thought-sign: the thought really referred to a gigantic storm.

Notice, and here’s the main point, that habits were involved at all levels of this process: the habits which comprise your thought’s logical interpretants, the physiological habits involved in your zooming in with the telescope, the refraction of light caused by the lens of the telescope (a habit of light as it passes through certain materials); and Jupiter’s habit of reflecting light. To study all these habits (and probably many others) is to study how the sign refers to its object. And, of course, the study of all these habits involves many different research specializations.

To wrap up, this is how Peirce’s concept of habit can contribute to semeiotics as multidisciplinary yet unified field. Habits are the basic structures and mechanisms by which signs are interpreted and stand for objects, and many different kinds of habits are involved: molecular, physiological, cognitive, cultural, and so on. Thus, understanding the true complexity and nature of semeiosis might require assimilating insights from across many different fields of research. I think that, as a polymath, Peirce recognized this; and we might do well to recognize this in the 21st century.

Morris (1938), *Foundations of the Theory of Signs*.

