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Habits and Essences

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The "scholastic realism" of Charles S. Peirce constitutes a unique phenomenon in the modern era, distinguished from other types of scholastic philosophy in at least two important ways. In the first place, among the medievals it was Duns Scotus rather than Aquinas who most profoundly influenced and inspired Peirce in his own thinking. Secondly, Peirce himself represents no particular philosophical movement or school of thought. Labeled a Pragmatist, his relationship to the pragmatism of James, Dewey, and others nonetheless remains both complex and problematic; it is most problematic concerning those issues that he clearly approached from the perspective of medieval philosophy.

Fortunately, this aspect of Peirce's thought has received a good deal of attention, and the precise nature of his "scholastic realism" is an issue that has engendered a sufficient amount of healthy controversy.[1] Simply to label Peirce as a "Scotist" is unilluminating. It is not altogether clear exactly how such a designation can be justified. Of course, Peirce's own explicit self-designations are of special interest, but only the content of his philosophy can provide the ultimate criteria for testing the validity of the various labels that are applied to it.

The relationship between Peirce's notion of "habit" and Scotus' understanding of the "quiddity" or the "real essence" of a thing will provide this essay with its subject matter Certain related issues will need to be discussed from time to time. However, since the general territory has already been carefully explored and charted, it seems appropriate to focus on specific points of comparison between the two thinkers and to examine them in detail. The first part of the essay will deal with certain difficulties, raised both by scholars and by Peirce himself, that seem to prevent one from regarding Peirce's "habit" and the scholastic "essence" as corresponding notions. In the second section, the more positive aspects of the comparison will be attended to. It will be argued that Peirce's analysis represents a reasonable and a creative development of the medieval position concerning the intelligible natures of things.

I

Peirce's commentators have demonstrated a reluctance to correlate his three basic categories with corresponding notions in Scotus' philosophy.[2] This reluctance is reasonable enough, since Peirce's initial attempts to formulate the categories resulted from his encounter with the philosophy of Kant and pre-dated his intensive study of medieval thought.[3] The development of Peirce's concept of "habit," however, does seem to have been somewhat influenced by his reading of the scholastics (e.g., 8.18).[4] Encompassing both acquired habits and natural dispositions, this word designated for Peirce any

> specialization, original or acquired, of the nature of a man, or an animal, or a vine, or a crystallizable chemical substance, or anything else, that he or it will behave, or always tend to behave, in a way describable in general terms upon every occasion (or upon a considerable proportion of occasions) that may present itself of a generally describable character. (5.538)

Scotus identified the nature of a thing, its essence or "quiddity," as the real source of the intelligibility of that thing. It specifies, for any given object, the kind of thing that it is. Now Peirce also argued that "the very meaning of a word or significant object ought to be the very essence of reality of what it signifies" (5.429). Furthermore, he claimed that "what a thing means is simply what habits it involves" (5.400). Consequently, Peirce sought to define the essential nature of a given object or organism in terms of the specific set of habits or dispositions that govern its behavior. Here, Peirce extends the scope of the meaning of the concept of habit beyond its original scholastic sense, but the new meaning is not completely unrelated to the old. In fact, the medieval philosophers did tend to describe the acquired habits of an individual as a kind of "second nature."[5] Additional evidence for this correlation is supplied by Peirce's assertion that substances are "bundles of habits" (1.414). Peirce explains that he is using "substance" here

"in the old sense of a thing," indicating the traditional Aristotelian usage, which (especially in the sense of "second substance") involves the notion of what a thing essentially is.[6]

It should be noted that such evidence has been interpreted in conflicting ways. Some scholars have argued that Peirce's identification of the essential nature of a thing with its "behavior," "operations," or "activities" is incompatible with the medieval position.[7] Any response to these arguments must first note the ambiguity that characterizes them. For example, within the context of one of these discussions, the Peircean "essence" is identified both with a thing's "behavior" and with its "habit," with its "very operations" and with its "mode of operation" or "habit of operation."[8] The distinction that needs to be made here is a crucial one. Unfortunately, Peirce himself did not always make it with perfect clarity. Murray Murphey has observed, to cite one instance, that Peirce's pragmatic theory of meaning is poorly articulated in the well-known maxim of 1878, where Peirce identifies the meaning of a conception with the conceivable effects of its object (5.402).[9] In fact, however, Peirce did not intend to define the essential nature of a thing in terms of either its actual or conceivable effects. It is not the behavior of a thing, but rather its *habit* of behavior that constitutes the intelligible nature or real essence (2.664). Such a habit is a general disposition affecting the way that an object *would* tend to behave under certain types of circumstances. Peirce, as well as Scotus, distinguished between the essence and the activities of a thing.[10]

While labeling himself as both a Scotist and a scholastic realist, however, Peirce clearly found the medieval systems to be in need of serious repair. He regarded the scholastics as great allies in his battle for the cause of realism, but, at the same time, Peirce suspected that even Scotus "inclines too much towards nominalism" (1.560). More specifically, he argued that "Duns Scotus is too nominalistic when he says that universals are contracted to the mode of individuality in singulars, meaning, as he does, by singulars, ordinary existing things" (8.208). In addition, Peirce distinguished his own perspective from the moderate position of Scotus and others by referring to himself as an "extreme realist" (5.77, 5.470).

It should be possible to illuminate Peirce's remarks by reading them against the background provided by F. E. Abbot's *Scientific Theism,* a work that Peirce both consistently praised and identified as articulating his own basic point of view (e.g., 5.423). Abbot argued for a doctrine that he called both "Relationism" and "Scientific Realism." This doctrine "teaches that universals, or genera and species are . . . objective relations of resemblance among objectively existing things."[11] Furthermore, this principle of the "Objectivity of Relations" affirms that "the relations of things are absolutely inseparable from the things themselves."[12]

> It shows that Moderate Realism was right in upholding the objectivity of universals, but wrong in making them inherent in individuals AS INDIVIDUALS (in re) rather than in individuals AS GROUPS (inter res). Relations do not inhere in the related terms taken singly, but do inhere in all the terms taken collectively.[13]

These remarks clearly resonate with Peirce's criticism of Scotus. Abbot also affirms that the essence of a thing is "the only proper and real object of scientific cognition," a statement with which both Peirce and Scotus would be in agreement. His treatment of essences does not appear to be typically "scholastic" however; rather, Abbot felt that that tradition had to be appropriated creatively, its ideas "translated" into the language and the conceptual framework of 19th century scientific inquiry.

> Translating the Moderate Realism of Aristotle into the more accurate language of Relationism, and not forgetting to correct its capital error of making the universal inhere in each individual as an individual (in re) rather than in all the individuals as a group (inter res), the meaning of his doctrine is that science is concerned with the general relations of things rather than with the things themselves – with general laws rather than with the peculiarities or accidents of individual objects.[14]

Whatever the precise source of Abbot's insights, Peirce's dissatisfaction with Scotus' realism is, in many ways, a consequence of certain discoveries that he made concerning the *logic of relations*. Peirce seemed to feel that the medieval position was basically sound, but that the scholastics were unable to develop their ideas in a satisfactory manner, essentially, because their logical equipment was defective. For example, the medieval logicians were able to deal with propositions that involve monadic predicates (like "_ is hard"), but not with those that involve relational predicates (such as "_ is a lover of _" or "_ gave _ to _") (3.464ff.). Consequently, they were able to talk about specific "classes" or "collections" of things, each class being comprised of all of the subjects bearing a particular monadic predicate. This also allowed them to say something about the relation of similarity (e.g., the sharing of a "common nature") that exists between the members of a given class. Useful up to a certain point, for Peirce this type of logical analysis simply did not seem to go far enough.

> The ordinary logic has a great deal to say about genera and species, or in our nineteenth century dialect, about classes. Now, a class is a set of objects comprising all that stand to one another in a particular relation of similarity. But where ordinary logic talks of classes the logic of relatives talks of systems. A system is a set of objects comprising all that stand to one another in a group of connected relations. Induction according to ordinary logic rises from the contemplation of a sample of a class to that of the whole class; but according to the logic of relatives, it rises from the contemplation of a fragment of a system to the envisagement of a complete system. (4.5)

The logic of relatives provides a means for analyzing relationships other than that of the resemblance of a certain object to the various members of its class. Peirce was much more interested in the way in which laws govern the interactions between objects within a meaningful process. The analysis of such a process or "system" involves the use of dyadic and triadic predicates. However, Peirce seemed to regard monadic predicates as themselves being relatives of a degenerate sort,

and he treated classes as being degenerate forms of systems (3.454).[15] To claim, for example, that "X is hard" is to do more than simply ascribe a particular quality to X; rather, it is to affirm that under certain specifiable conditions X will tend to behave in a certain specifiable manner. "Hardness" is to be regarded then as a dispositional property, and a real "habit" or "law" must govern the behavior of those objects within which it inheres. If a monadic predicate did not represent a degenerate relative in this sense, then it would necessarily correspond to pure "Firstness," a simple quality or pure possibility that could be completely actualized in any individual reaction-event (i.e., in any "Second"). In a universe manifesting only Firstness and Secondness, devoid of generality and thus of intelligibility, it might be appropriate to speak of such a non-relational monadic predicate. Even when one is confronted with nothing more than the case of an individual object enduring through time, however, real *continuity* is involved and the properties that inhere in such an object are themselves "general" (1.411ff., 1.427). Here, the relationship between a thing and its properties can only be defined by a real habit, a "would-be" operating within the actual world of objects and events.

It should be clear then that modern logical theory supplied Peirce with some of the most crucial elements of his metaphysics. He moves quickly and frequently from his study of relatives to the analysis of various types of generality. Here again, Peirce perceives the scholastic definition of generality – "Generale est quod natum aptum est dici de multis" – as standing in need of drastic revision (5.102). Such a notion represents only "a very degenerate sort of generality."[16]

> Take any two possible objects that might be called suns and, however much alike they may be, any multitude whatsoever of intermediate suns are alternatively possible, and therefore as before these intermediate possible suns transcend all multitude. In short, the idea of a general involves the idea of possible variations which no multitude of existing things could exhaust, but would leave between any two not merely many possibilities, but possibilities beyond all multitude. (5.103)

Peirce's criticism of Scotus begins now to come into sharper focus. Abbot's formula, "universalia inter res," is intended (at least from Peirce's perspective) to emphasize the fact that between any two actually existing members of a class or fragments of a system there is a real continuity ("possibilities beyond all multitude"). By locating the contracted universal within singular existing things, Scotus might be able to explain the type of generality that characterizes a collection of objects having some quality in common. Peirce contends, however, that in the process of doing so, the universal becomes correlated with the Firstness of pure qualitative possibility. Such qualities can be perfectly actualized or "exhausted" by their subjects precisely because they are "indifferent" to singularity or universality. (A quality is what it is regardless of anything else [1.424-26]. Equinity is just equinity.[17]) According to Peirce, Scotus' analysis never moves beyond this extremely degenerate form of generality, and so it fails to account for an infinite number of real possibilities, i.e., for the real and continuous relationship that exists between any two members of a class, between an object and its successive actualizations in time, between the interacting fragments of a system.

The ability to characterize this last type of relationship is especially important for Peirce. "X gives Y to Z" is general not simply because the relational predicate ("_ gives _ to _") can be applied to many different sets of ordered triads, but rather, because it ranges over the members of any given triad.[18] Here Peirce's concern is with a type of relationship that is very different from the "sameness" that defines the medieval genera and species. The interest in classes of givers, gifts, and recipients here has been superseded by an interest in the *system* that encompasses the giver, the gift, and the recipient, and in the laws or habits of behavior that govern their interaction. In all types of relationships, however, even in relationships of resemblance, a real continuity exists between relata, and predicates must be universalized or "projected" in order to range over the infinite numbers of possibilities, actualized and unactualized, that make up the continuum.[19]

It is important, especially in light of Peirce's criticism of Scotus, to observe that the latter is quite willing to talk about "real relations," characterizing them in the following manner:

> . . . a real relation requires only these three conditions: (1) That the foundation be real, viz. something extramental in a thing; (2) that the terms be real and really distinct; (3) that the relation inhere in things extramentally, i.e., independently of any intellectual consideration or the operation of an extrinsic power.[20]

Both Peirce and Abbot are clearly arguing, however, not only for the reality of relations, but also that relations comprise the real natures of things. Peirce formulates such a position simply by asserting that habits account for an object's essential intelligibility. Habits are laws that govern objects by relating certain types of behavior to specific kinds of circumstances. Consequently, the essence of a thing is defined, not by any particular relationship or activity within which the thing actually participates, but by a general habit that determines those relations and activities to which, given the appropriate conditions, that thing *would be disposed.* Such a habit is not simply essential to, but rather, must be of the essence of the thing, i.e., it must be predicated of the thing "per se primo modo" (2.361).

Scotus and Peirce, nonetheless, do appear to agree on a number of significant points. For example, Scotus argues that, while the universal does exist in the mind, in the extramental world only individual things can be said actually to exist.[21] Here, Peirce concurs, affirming that "whatever exists is individual" (3.613), that "individuals alone exist" (5.429). Furthermore, both thinkers are concerned with making a distinction between "existence" and "reality." Peirce insists that a reality is what it is independently of what any particular mind may think about it (6.349, 6.495, 6.610). Consequently, a law of nature is real because it is actually operative within the world of things and events; its reality is objectively grounded and it is not the product of the formulation of any specific mind or group of minds. Such a law is indeterminate in character; i.e., its reality is not to be identified with the behavior of any individual thing or with the occurrence of any actual event or series of events. As such, it is comparable to Scotus' "natura communis," which he describes as a "formality," a real entity that is distinct both from any existing individual within which it may inhere

and from any particular mind within which it may exist in the form of a universal concept.[22] Scotus contends that the common nature, that which makes a thing *what* it is, is "formally distinct" from the principle of "haecceity," that which makes a thing *this* particular thing. The individual nature possesses a "greater" or "numerical" unity, the common nature a "lesser" or "specific" unity; i.e., the reality of the former is determined by its being this or that particular thing, while the reality of the latter does not preclude its being individuated in a multiplicity of existents.[23] Consequently, the common nature cannot be identified with any specific individual, even though it is actually inseparable from those existing things whose essence it constitutes. The common nature qua common nature is indifferent to singularity (as well as to universality) and cannot be predicated of any particular member of the species.[24]

Admittedly, for Peirce a habit or law (i.e., a "Third") constitutes, in the extramental world, a real universal; it is not merely "indifferent" to singularity. On the other hand, his criticism of Scotus fails to acknowledge the fact that the common nature remains formally distinct (a "real" and not simply a logical distinction) from the individual nature. Furthermore, while criticizing Scotus' notion of "contraction," Peirce himself must provide some account of how Thirdness is determined or actualized within a given individual or group of individuals, since habits are the real essences of existing things, and only individuals exist. Clearly, he also wants to argue for the interdependence and inseparability of the general, intelligible nature of a thing and its haecceity, its individual "thisness" (1.353, 5.91). Interestingly enough, Peirce's concept of "prescission" closely resembles Scotus' formal distinction,[25] it involves more than simply a logical distinction, less than a distinction between actually separable things (1.549). Peirce, like Scotus, uses this notion to define the relationship between the brute particularity of and the general habits that govern any existent. He argues that a Second can be prescinded from a Third; i.e., a thing's "thisness" can be distinguished from the reality (the habit) that lends it its intelligibility and constitutes its essence. In addition, he agrees with Scotus that the haecceity of a thing is a determination of and not an addition to the essence of that thing (e.g., 1.458ff.); it is the essence alone that forms the proper object of scientific cognition and inquiry.

Peirce's "extreme realism" is enigmatic then, because it surely cannot be identified with any form of Platonism; he never argued for the separate existence of universal entities or "Ideas." In fact, Peirce strongly endorsed Abbot's position, and Abbot clearly rejected the perspective of extreme realism.[26] Likewise, Scotus' "moderate realism" itself represents a highly complex point of view. Scotus' formal distinction and his characterization of the common nature as a distinct "formality" or "reality" have frequently been labeled as "extremist" doctrines. Such labels prove to be remarkably uninformative, however, in Scotus' case as well as in Peirce's.

II

In his criticism of Scotus' metaphysics, Peirce emphasizes the need to account for the real continuity that links any two fragments of a system. Even when such a system assumes the degenerate form of a collection of similar objects (i.e., objects of the same "kind), this continuity is real and must be attended to. Furthermore, Peirce accuses himself of having been guilty of expounding nominalistic doctrine when he argued that the meaning of a given monadic predicate (e.g., "_ is hard") is provided by a description of the actual behavior manifested by any object possessing the property designated by that predicate (8.208; see also 5.403). This argument must now be corrected in order to indicate that such a predicate defines the way that a thing *would* behave under certain specifiable conditions; the general habit is real even when these conditions do not exist and the relevant behavior is not actually manifest. In a sense, part of the critique of Scotus can be seen to focus on the issue of dispositional properties, and on the apparent inability of Scotus' philosophy to account adequately for them.

Scotus' position, however, was a good deal more "advanced" in this respect than even Peirce perceived it to be. He too grappled with the problem of induction, with the question of how one can be certain about general conclusions that are based on the experience of a limited number of cases.

> Even though a person does not experience every single individual, but only a great many, nor does he experience them at all times, but only frequently, still he knows infallibly that it is always this way and holds for all instances. He knows this in virtue of this proposition reposing in his soul: "Whatever occurs in a great many instances by a cause that is not free, is the natural effect of that cause." . . .
> . . . because a cause that does not act freely cannot in most instances produce an effect that is the very opposite of what it is ordained by its form to produce.[27]

One can induce that a stone is always hard even though no individual stone is experienced as being hard "at all times." The "natural" or "per se" cause,[28] the "form" of the thing, allows one to be certain about its persisting hardness ("in most instances"). Here, Scotus avoids the type of nominalistic analysis that Peirce himself, at one point in his philosophical development, had succumbed to. The Scotistic form or essence functions in precisely the same manner that Peirce's habit does; it determines how a thing "would be" disposed to behave under certain specifiable conditions. It also allows one to "project" the manifest properties observed in a limited number of cases over a much wider range of objects, indeed, over an infinite range of possible objects and instances. Inductive reasoning is involved in the identification of the real natures of things; such natures function causally (are, in fact, bundles of causal laws) determining the future and "would-be" behavior of an object and the sameness of behavior manifested under similar conditions by objects that are of the same *kind.*

In an interesting paper on Scotus, James F. Ross provides a detailed analysis of the text on human knowledge cited above, and he convincingly argues for the relevance of Scotus' conclusions to contemporary philosophical discussion. Ross summarizes these conclusions in the following manner:

> To discover the nature of a thing is nothing more than to find out what kinds of behavior a thing of that sort (essence) is actively disposed to produce . . . .

> . . . Scotus . . . holds that insofar as the interactions of physical objects are neither fortuitous nor voluntary, they display the *sorts* of things which interact; for the sort or nature of a thing is nothing but *what* it is insofar as this actually disposes it to its operations. Things of the same sorts will, under similar conditons, interact similarly, since it is their nature or sorts which account for their actions.[29]

This interpretation of Scotus clearly reinforces the proposed correlation between the Scotistic essence and Peirce's "habit" or "law of behavior." In neither case is the nature of a thing identified with its manifest properties. Rather, what a thing is determines how it will and would behave; i.e., this "whatness" (quiddity) is related to actual, manifest behavior as cause to effect.

Consequently, Scotus and Peirce both argue that material essences are dispositional;[30] especially in Peirce's case, no other interpretation seems possible. It does not necessarily follow, however, that all dispositional properties are essential. The fact that "X is hard" need not be essential to X, even though hardness is a dispositional property causing X to behave in certain predictable ways. Now, at times, Peirce does seem to want to identify the real nature of a thing (the essential "meaning" of the concept of that thing) with the complete set of habits that govern its behavior, i.e., he fails to distinguish between the essence and the accidents of a thing. In his discussion of "natural classes," however, Peirce argues that the members of a particular class are defined by, indeed, "owe their existence" to a specific "idea" or "final cause" (1.204).[31] What a thing is is intimately connected with what that thing is for. Clearly, for Peirce, "the essence of a thing is the idea of it, the law of its being, which makes it the kind of thing that it is, and which should be expressed in the definition of that kind" (2.409, n.2).

It does not appear likely that Peirce would want to argue that even essential properties ("propria") constitute the essence (i.e., are "of the essence") of a thing. The essence is no collection of properties, but rather, it is a special "habit of action." More specifically, it is a "bundle" of habits or a law-cluster[32] that operates as a final cause specifying the general patterns of behavior that a given object or organism will tend to manifest.

> . . we must understand by final causation that mode of bringing facts about according to which a general description of result is made to come about, quite irrespective of any compulsion for it to come about in this or that particular way; although the means may be adapted to the end. The general result may be brought about at one time in one way, and at another time in another way. Final causation does not determine in what particular way it is to be brought about, but only that the result should have a certain general character. (1.211)

Final causation does not involve the exertion of influence by some specific future entity or event upon a present object, event, or state of affairs. Final causes are operative in nature as habits of behavior, determining, for particular kinds of things and circumstances, that specific activities would tend to produce results "of a certain general character." Efficient causation, associated by Peirce with Secondness, i.e., with the haecceity or individual nature of a thing, remains unconcerned with "the general character of the result" (1.212). The essence or common nature of a thing, however, is its defining "idea," the habit or final cause that supplies it with its distinctive purpose and mode of operation. Without this idea, a thing would be a mere collection of parts, in much the same way that a human corpse, devoid of "life," can no longer properly be called a person (1.220).[33]

> Efficient causation is that kind of causation whereby the parts compose the whole, final causation is that kind of causation whereby the whole calls out its parts. Final causation without efficient causation is helpless; . . . efficient causation without final causation, however, is worse than helpless, by far, it is mere chaos; and chaos is not even so much as chaos, without final causation; it is blank nothing. (1.220)

The two modes of causation are distinct but, in fact, inseparable. Peirce goes so far as to assert that "habit as final causation and habit as efficient causation are two ways of looking at the same thing" (6.101).

This identification of habit with efficient causation may seem confusing, but what Peirce intends to characterize here is the "Secondness of Thirdness" (1.530). It is not the common nature qua common nature, or habit qua habit (i.e., the "Thirdness of Thirdness") that is being designated by this second "way;" rather, Peirce is alluding here to the living force of a habit that has been instantiated in an actually existing thing. The efficient and the final causes that govern the behavior of such a thing are, to use Scotus' term, "formally distinct."

Recall that Scotus also identifies the "form" of a thing as a cause determining that thing's behavior, both actual and potential ("for every agent by its own form and power possesses its action virtually even when it is not actually producing it"[34]). He does not speak about final causation in this context, but this fact alone does not preclude a close analogy between his discussion and that of Peirce. Aristotle, in analyzing the four basic types of causation, admitted that, in many cases, the final and formal causes of a thing are indistinguishable.[35] In his discussion of natural classes, Peirce himself, citing the authority of Aristotle, classifies all causes as either efficient or final (1.211).[36] Furthermore, Peirce occasionally identifies the defining idea or final cause of an object or class of objects as a "form," "formal idea," or "inward nature" (e.g., 1.208, 1.223, 6.36, MS, 1271, P. 2). He also interprets, without criticism, the Scotistic concept of "substantial form" as involving nothing more than the intelligible characteristic of a natural class (6.361). At one point, Peirce even refers to the law-like character of Scotus' idea of a "nature," providing further evidence for the plausibility of the correlation between the Scotistic essence and Peirce's "habit as final cause" or "law of behavior." Peirce's analysis simply emphasizes that what a thing is may be best defined by what that thing is to become. In any event, both Peirce and Scotus recognized the causal function of the essences of things, and that function may be appropriately defined in terms of both formal and final causation.

It has already been mentioned that Peirce refers to "habit as efficient causation," and that this particular notion of habit can best be understood against the background provided by the distinction between the Secondness of Thirdness and the Thirdness of Thirdness, i.e., between the actual compulsion of instantiated law and the intelligibility

of law. Consider now Peirce's analysis of *individuality*. Perhaps the most convincing interpretation of Peirce on individuals is located in Murphey's book on the development of Peirce's philosophy.[38] He argues that "the haecceity itself is . . . general" although individual reaction-events "remain irreducibly Seconds." As a consequence of this interpretation, it must be concluded that, for Peirce, individuality is a relative rather than an absolute category. All individuals manifest a certain element of continuity, and thus, of generality; they are determined as being individuals by a specific law or habit that both accounts for their identity as "single logical individuals" and constitutes them as a "continuity of reactions" (3.613). To borrow a term from Peirce's analysis of the logic of relations, it is most useful not to speak of individuals, but of individual "systems." An absolute individual would be a brute reaction-event devoid of intelligibility. A "single logical individual," since it endures through time, is of a continuous nature. Its behavior is governed by a habit that causes it both to endure (as a "continuity of reactions") and to continuously manifest certain essential properties and modes of activity. In short, individuals are systems, systems have essences, and essences are real habits or laws of behavior.

Such an analysis is not in direct conflict with the position of Duns Scotus. Peirce is clearly not refusing to ascribe essences to Scotus' individuals. Scotus' single existing things *are*, for Peirce, systems of meaningful relations defined by a final cause or habit. Any given object, existing and manifesting certain types of behavior over a period of time, is of the nature of a continous process; its essence will be law-like. Scotus himself seemed to suspect that this sort of analysis was necessary in order to explain the properties of a thing, not simply in terms of qualities instantaneously manifested, but as *dispositions* to behave in a certain predictable manner (so that our knowledge holds "for all instances"). He, also, appeals to the notion of essence, of the nature or form of a thing, in order to classify it as being of a specific kind.

Peirce extends this systems-type analysis in order to argue that continuous systems are embedded one within another, in much the same way that a line drawn on a blackboard represents both a continuous process and a discontinuity within a continuum (the blackboard) of

a higher dimensionality (6.203). It is possible to talk about systems and sub-systems then (1.501);[39] in fact, one can postulate a series of systems ordered hierarchically, each contained by a larger and more "general" system and each interacting with a variety of systems coexisting at the same level. Peirce's analysis seems to involve the claim that an individual system can have, at any level, a real essence, i.e., a defining habit or purpose. This habit will also function as a law governing the behavior of specific "sub-systems," and will partially determine the activities of more comprehensive, encompassing "super-systems." That is to say, the essential habit or nature of an individual may function as a "law of nature" for an individual at a lower dimensionality, while, at the same time, constituting a non-essential disposition or a partial determination of the nature of a more general system.

These habits or laws are not always immediately evident; it is the task of the scientist to discover them by exploring the manner in which things behave and interact. As indicated by both Scotus and Peirce, inductive reasoning plays an essential role in this process of exploration. Nonetheless, the fundamental "logic of discovery" is, according to Peirce, the logic of hypothesis. Inductively, one reasons from particulars to a general law; in order to grasp the essence of any given thing, however, one must reason hypothetically or "abductively." It has already been noted that the general or regular behavior of a thing is, for both Scotus and Peirce, the effect of a "natural" or essential cause. Furthermore, reasoning from effect to cause is, Peirce insists, always a case of abduction (2.636). Consequently, an object is classified, its habit defined, by a hypothetical inference. Peirce so frequently speaks of abduction as the "starting point" of inquiry (i.e., the formulation of hypotheses for subsequent deductive explication and inductive testing) that the manner in which inductive reasoning is "completed" by abduction might easily be overlooked. No amount of observation, no mere collection of confirming instances is sufficient to conclude that "X" possesses a certain defining habit or essential nature, that "X" is a member of a particular natural class (2.641f.). General habits or laws can be established inductively, however, and they can function as rules or general premises in an abductive inference that concludes, for a specific "X", that it is an instance of such a law. Induction is a

process of habit-formation then (2.644), and such habits function as perceptual or conceptual "sets" enabling one to abductively grasp the essence of a thing, its defining "idea" or "cause."

Although he has been labeled as a forerunner of contemporary "scientific realism,"[40] it now appears that Peirce's perspective is actually much closer to that of the scholastics. For him, the real scientific explanation of a system will involve the discovery of the final end or cause that defines it, rather than the detailed analysis of how its components function (as "efficient causes") to bring about its normal operation. Such a detailed analysis may prove to be epistemologically prior to the discovery of the final cause. Metaphysically, however, it is a habit of action that is the source of the thing's intelligibility ("operari sequitur esse"). Such habits are real on every level, wherever a system is actually realized or instantiated. They play a causal and thus an explanatory role vis à vis a given system. Natural kinds (as opposed to other kinds of things having only "nominal essences") derive their existence, their "power" to "work out results in the world" from their final causes (1.220). The final cause that defines and governs the most comprehensive of all systems, i.e., the universe, will be the ultimate source of intelligibility. Metaphysically, Peirce tends to work "from the top down," from whole to parts, rather than vice versa.

Peirce's cosmology is extremely speculative, and it seems to have been influenced by certain religious notions and beliefs that he never clearly articulated. Even if it is possible to characterize individual entities as systems and their essences as habits or causal laws, a multitude of new questions and problems immediately arise. For example, if one system can be a fragment of another, then it will be governed both by the law or final cause that defines it and by the laws that determine its relationship to other fragments of the larger system. How are these laws related? Does one determine or entail the others? For any given individual, will its essential nature be defined by its own particular end or by the final causes that define all of the "super-systems" that encompass it as well? In what types of instances can a particular formal structure be the proper end of a system and thus constitute its final cause? An endless number of such questions could be formulated.

The purpose of this essay does not require or even permit that the answers to these questions be pursued here. Peirce's relationship to Scotism has served to focus this discussion, and one final comparison may be mentioned at this point. Scotus regarded the haecceity of a thing, its "thisness," as constituting the ultimate perfection of that thing. In a sense, the end of a given thing is precisely to be "this particular individual." The prominence and the centrality of the individual in Scotus' philosophy are often contrasted with Peirce's tendency to regard individuals as being fragments of a larger system. Peirce sometimes appears to consider individual persons, for example, as being significant only insofar as they function to serve social, indeed, cosmic ends. However, this contrast seems artificial for several reasons. First of all, it attends more to the rhetoric than to the logic of Peirce's argument. Peirce, within his philosophical system, allows for real individuals possessing essential and defining natures. He is concerned with denouncing "individualism," rather than with eliminating individuals. On the other hand, for Scotus, to be "this particular individual" is precisely to stand in a certain relationship to God. Furthermore, despite his emphasis on haecceity, Scotus respected the "reality" of common natures to such an extent, that his realism has frequently been regarded as "extreme." In the course of their philosophizing, both Peirce and Scotus often appear to be meditating on an issue that, in theological discussions, has come to be labeled as the problem of "eros and agape," of "this-centered" and "other-centered" love. It manifests itself in their constant efforts to define precisely the relationship between a thing's individuality and its relations, between its haecceity and its common nature. Peirce's "agapism," however inadequate as a solution, is clearly evidence of his struggle with this problem.

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NOTES

1. See, for example, Robert Almeder, *The Philosophy of Charles S. Peirce: A Critical Introduction,* (Totowa: Rowman and Littlefield, 1980), ch. 5; R. Bastian, "The Scholastic Realism of C. S. Peirce," *Philosophy and Phenomenological Research,* 14 (1953), pp. 246-49; J. Boler, *Charles Peirce and Scholastic Realism,* (Seattle: University of Washington Press, 1963); R. Goodwin, "Charles S. Peirce· A Modern Scotist?", *New Scholasticism,* 35 (1961), pp. 478-509; W. P. Haas, *The Conception of Law and the Unity of Peirce's Philosophy,* (Notre Dame: University of Notre Dame Press, 1964), pp. 112ff.; R. McKeon, "Peirce's Scotistic Realism," *Studies in the Philosophy of Charles Sanders Peirce,* ed. Wiener and Young, (Cambridge: Harvard University Press, 1952), pp. 238-50; E. C. Moore, "The Scholastic Realism of C. S. Peirce," *Philosophy and Phenomenological Research,* 12 (1952) pp. 406-17; Moore, "Professor Bastian's Comments on Peirce's Scolasticism," *P&PR,* 14 (1953) pp. 250-51, Moore, "The Influence of Duns Scotus on Peirce," *Studies in the Philosophy of Charles Sanders Peirce,* Second Series, ed. Moore and Robin, (Amherst: University of Massachusetts Press, 1964), pp. 401-13; Peter Skagestad, *The Road of Inquiry,* (New York: Columbia University Press, 1981), esp. ch. 2&4; M. H. Thompson, "The Paradox of Peirce's Realism," *Studies . . .,* Second Series, pp. 133-42.

2. See esp. Almeder, pp. 174-76.

3. M. G. Murphey, *The Development of Peirce's Philosophy,* (Cambridge: Harvard University Press, 1961), p. 131.

4. *The Collected Papers of Charles Sanders Peirce,* v. I-VI, ed. Hartshorne and Weiss, v. VII-VIII, ed. Burks, (Cambridge: Harvard University Press, 1931-58); references to these papers will include volume and paragraph number (e.g., 8.18) following the established convention among Peirce scholars.

5. See A. B. Wolter and F. Alluntis, "Glossary" for *God and Creatures: The Quodlibetal Questions* (by John Duns Scotus), (Washington, D. C.: Catholic University of America Press, 1975), p. 532.

6. See Aristotle, *Categories,* ch. 5, 2^a11 and following; also, see Scotus, *Quodlibetal Questions,* 3.49-53.

7. Most recently, see Almeder, pp. 165, 179, and 181, n. 14; this same argument was advanced by Bastian in 1953 (see note no. 1).

8. Bastian, pp. 246-49.

9. Murray Murphey, "Charles Sanders Peirce," in *A History of Philosophy in America,* v. 2 (with Elizabeth Flower), (New York. G. P. Putnam's Sons, 1977), p. 590.

10. Almeder, p. 181, n. 14.

11. F. E. Abbot, *Scientific Theism,* (Boston: Little, Brown & Co., 1885), p. 25.

12. Abbot, p. 27.

13. Abbot, p. 28.

14. Abbot, pp. 41-42.

15. Murphey, *The Development . . .*, p. 304; Boler, pp. 73-78.

16. See also Peirce, *Selected Writings,* ed. Wiener, (New York: Dover, 1952), pp. 300-01, n. 45.

17. J. Owens, "Common Nature: A Point of Comparison Between Thomistic and Scotistic Metaphysics," *Medieval Studies* XIX (1957), pp. 7-8.

18. Boler, p. 77.

19. See N. Goodman on the notion of projection, in *Fact, Fiction, and Forecast,* (New York: Bobbs-Merrill, 1965), pp. 44ff.

20. Scotus, *Quodlibetal Questions,* 6.82.

21. Scotus, *Opus Oxoniense,* I, d.3, q.6, n.8 and IV, d.43, q.1, n.11.

22. Owens, pp. 7-13; see also A. Wolter, *The Transcendentals and Their Function in the Metaphysics of Duns Scotus,* (The Franciscan Institute, 1946), pp. 27-30.

23. Boler, pp. 46-50; Owens, pp. 8-9.

24. Scotus, *Opus Oxoniense,* II, d.3, q.1, n.9; see also Owens, pp. 11, 13.

25. Murphey, *Development,* p. 129.

26. Abbot, p. 28.

27. Scotus, *Philosophical Writings,* ed. Wolter, (New York: Bobbs-Merrill, 1962), p. 117.

28. *Ibid.,* p. 44.

29. J. F. Ross, "An Application of a Scotistic Principle," in *Scotus Speaks Today,* Seventh Centenary Symposium, (April 21-23, 1966), published by Duns Scotus College, Southfield, Michigan (1968), pp. 227-62.

30. Compare I. M. Copi, "Essence and Accident," *Journal of Philosophy,* 51 (1954), pp. 718-19.

31. See V. Potter's excellent analysis of Peirce on final causation in *Charles S. Peirce on Norms and Ideals,* (Amherst: University of Massachusetts Press, 1967), esp. in Part II.

32. See R. Goodwin's comparison of Scotus' "plurality of forms" with Peirce's notion that a substance is a "bundle of habits" (cited in note no. 1).

33. This example is probably borrowed by Peirce from Aristotle—*De Partibus Animalium,* Bk. I, 640b, 35 – and Peirce's discussion of final causation freely draws upon the Aristotelian analysis; see also, Scotus on the primacy of final causation in the essential order of causes, *De Primo Principio,* ed. Roche, (The Franciscan Institute, 1949), pp. 15ff..

34. Scotus, *Quodlibetal Questions,* 7.65.

35. Such an identification seems to be involved, for example, in Aristotle's analysis in *De Partibus Animalium,* Bk. I, 639b, 14-22; see also the *Physics,* II 8,199a30-32.

36. Note that the editors of Peirce's papers refer here in a note to an Aristotelian text where the formal and final causes of a thing are identified, i.e., *Metaphysics,* 1044b, 1.

37. See Peirce, *Selected Writings,* ed. Wiener, p. 292.

38. Murphey, *Development,* pp. 398-99.

39. Murphey, ch. 10 of *A History of Philosophy in America,* v. 2 (Flower and Murphey), pp. 613ff.; see also, Murphey, "On Peirce's Metaphysics," *Transactions of the Charles S. Peirce Society*, 1 (1965), pp. 23-24.

40. See, for example, Skagestad, pp. 63-64; also, see van Fraassen on Peirce in *The Scientific Image,* (Oxford: Clarendon Press, 1980), pp. 7, 209.