Gérard Deledalle

## PEIRCE'S NEW PARADIGMS

First Part
PARADIGM SHIFTS

## I. Against Aristotle

*1. The Syllogism: Against the reduction to the first figure (1866)*
In *Memoranda Concerning the Aristotelean Syllogism (1866),* Peirce proves that no syllogism of the second or third figure can be reduced to the first, contrary to what Aristotle maintained.

> It is important to observe that the second and third figures are *apagogical,* that is, infer a thing to be false in order to avoid a false result which would follow from it. That which is thus reduced to an absurdity is a Case in the second figure, and a Rule in the third. (W1: 506-507[1]).

Of course, the second and third figures involve the principle of the first figure, "but the second and third figures contain other principles, besides" (W2: 514).

*2. For another conception of the figures of the syllogism*
In the last article of the series "Illustrations of the Logic of Science" (1878), which was revised in 1893 as chapter XIII of *Search for a Method* (W3: 325-326), Peirce concludes that the three figures are therefore original and correspond to the three following types of inferences:

Fig. 1: Deduction  (in the classical sense),
Fig. 2: Induction   (in the classical sense),
Fig. 3: Hypothesis  (Peircean abduction).

### 1. Deduction

Rule.   -   All the beans from this bag are white,
Case.   -   These beans are from this bag,
∴      Result. -   These beans are white.

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[1] References in the text by volume and page to the *Writings of Charles S. Peirce*, Peirce Edition Project, Bloomington and Indianapolis, Indiana University Press, vol. 1 (1982), vol. 2 (1984), vol. 3 (1986).

### 2. Induction

Case.   - These beans are from this bag.
Result. - These beans are white.
∴      Rule.   - All the beans from this bag are white.

### 3. Hypothesis

Rule.   - All the beans from this bag are white.
Result. - These beans are white.
∴      Case.   - These beans are from this bag.

At this time, Peirce's classification is still Aristotelean, and even worse, if one may say so, since the three figures of the syllogism are no longer reducible and constitute three different types of inference. At this stage, Peirce's classification is Kantian (W3: 326).

Inference.

Deductive or Analytic.                      Synthetic.

Induction.      Hypothesis
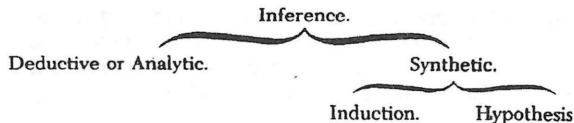
## II. Against Kant

### 1. Critique of Kant's categories (1866 and 1867)

In his article of 1867 entitled *On a New List of Categories,* Peirce asks himself Kant's question: "How can the manifold of sensuous impressions be reduced to unity?" At first he gives a Kantian answer: "The unity to which the understanding reduces impressions is the unity of the proposition" (W2: 49). But he then immediately broaches the question of the passing from being to substance. Thus in the proposition "the stove is black", the stove is the *substance,* from which its blackness has not been differentiated and the copula "*is*" only explains that the blackness is confused with the substance of the stove "by the application to it of *blackness* as a predicate" (W2: 50). So being does not affect substance. Being and substance are indeed "the beginning and end of all conception", but "substance is inapplicable to a predicate, and being is equally so to a subject" (W2: 50).

How can we pass from being to substance? The question is no longer Kantean, but Peircean. Peirce here introduces a notion on which all his subsequent thinking will hinge: the notion of "precision" which is not a reciprocal process, unlike "discrimination" and "dissociation".

In an article dated 1866, but not published until long afterwards, Peirce drew up a table showing the difference between the three possible types of distinction, of which we give here a modified version:

**Table 1: The three types of distinctions**

| Can we think | | | |
|---|---|---|---|
| | blue without red ? | space without colour ? | colour without space ? | red without colour ? |
| By discrimin-ation | 1 | 1 | 1 | 0 |
| By prescision | 1 | 1 | 0 | 0 |
| By dissociation | 1 | 0 | 0 | 0 |

It must be noted that it is not mathematical space nor Kantian space which is in question here, but the physical, in the sense of quantitative, space that Aristotle opposed to the intelligible, and the "*étendue*" that Descartes opposed to "*pensée*". At this stage of the development of Peirce's philosophy, an abstract concept like colour could be classified in the same way in the order of Aristotle's passive intelligible and of Descartes' "*pensée*".

In 1867, Peirce applied the process of precision to the conceptions or categories which he shows to be indispensable for the passing from being to substance: quality, which he here calls a "ground", the relation with a correlate and the mediating representation which he already calls "an interpretant." Let us remark that the Peircean categories owe nothing either to Kant nor to Aristotle.

To say "the stove is black" is to say that the stove embodies blackness (W2: 52). But a quality is what it is because it is different from another. Hence the conception of reference to a correlate. The conception of reference to a correlate itself requires that of representation. Now a comparison can be made only by a "mediating representation which represents the relate (quality) as standing for a correlate with which the mediating representation is itself in relation" (W2: 53).

Precision shows that the three conceptions are *hierarchical*. The mediating representation or interpretant (a Third) presupposes the reference or relation (a Second) which itself presupposes quality or a ground (a First). But this relation is not reciprocal: quality or ground (First) is what it is in itself, whether there are any other qualities or not, or whether they are compared or not, if there are. Relation (Second) does not change, whether it be interpreted or not in a mediating comparison (Third). But relation will nonetheless imply the totality of qualities (Second) and there can be no mediating comparison (Third) without relation (Second) nor quality (First). In short, Peirce's categories are *ordinal* and not cardinal. A Third is triadic, a Second dyadic, and a First monadic (W2: 55). Which can be expressed in the following table:

**Table 2: Precision**

| Can we prescind | | | |
|---|---|---|---|
| quality (a First) from relation (a Second) ? | relation (a Second) from the interpretant (a Third) ? | the interpretant (a Third) from relation (a Second) ? | relation (a Second) from quality (a First) ? |
| 1 | 1 | 0 | 0 |

In 1867, Peirce is still Aristotelian. The three conceptions or categories he proposes are "intermediate" (W2: 54-55) between the conceptions or categories of being and substance which he does not reject. Quality in itself (blackness) is for him, as for

Aristotle, the ground of a quality embodied in a substance (the stove). Peirce says explicitly:

> Reference to a ground cannot be prescinded from being, but being can be prescinded from it. (W2: 53).

## III. Against Descartes

The first articles of the series "Illustrations of the logic of science" (1878) quoted above with reference to the figures of syllogism, are aimed at Descartes. The first is a critique of methodological doubt and the second a critique of evidence by intuition.

### 1. *Critique of methodological doubt.*

In the first article "The Fixation of Belief", Peirce objects that one cannot, as Descartes said, begin by doubting everything, that absolute doubt, even were it methodological, is impossible, for one cannot pretend to doubt. We begin with all our prejudices, all our spontaneous beliefs. Doubt is in fact a state of uneasiness and dissatisfaction from which we are always struggling to free ourselves, and to pass into the state of belief.

By *belief*, Peirce does not mean religious belief, but what the Scottish philosopher Alexander Bain defined as "that upon which a man is prepared to act" (5.12)[2], in other words, as the establishment or constitution of a habit; with the result that the different sorts of belief are distinguished by the different modes of action to which they give rise.

### 2. *Critique of evidence by intuition.*

In the second article, entitled "How to Make our Ideas Clear", which is the founding article of pragmatism, although the word "pragmatism" does not appear in it, Peirce

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[2] References in the text by volume and paragraph to the *Collected Papers*, vol. 1-6, edited by Charles Hartshorne and Paul Weiss, Harvard University Press, 1931-1935.

asks how we can distinguish an idea which *is* clear from an idea which *seems* clear. Intuitive evidence, he replies, does enable us to see the difference.

This is hardly unexpected. Already in 1868 Peirce had criticised intuition of any kind, as well that of the psychology of faculties as that of Descartes or of Kant. Ten years later he is able to reply to the question he asks in "How to Make our Ideas Clear", thanks to "the scientific revolution that found its climax in the 'Origin of Species'."[3]. The quotation is from Dewey who would advocate an identical method, on the basis of quite another experience.

It is only *action* which can differentiate a genuinely clear and distinct idea from one which has only the appearance of clearness and distinctness. If *one* idea leads to two different actions, then there is not one idea, but two. If *two* ideas lead to the same action, then there are not two ideas, but only one. Hence the pragmatic maxim: "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object" (W3: 266).

It will be noticed that Descartes was not far removed from pragmatism when he wrote in *Discours de la Méthode*:

> Il me semblait que je pourrais rencontrer beaucoup plus de vérité dans *les raisonnements* que chacun fait touchant les affaires qui lui importent, et *dont l'événement le doit punir bientôt après s'il a mal jugé*, que dans ceux que fait un homme de lettres dans son cabinet, touchant *des spéculations qui ne produisent aucun effect, et qui ne lui sont d'aucune conséquence*, sinon que peut-être il en tirera d'autant plus de vanité qu'elles seront plus éloignées du sens commun[4] [Italics mine].

Second Part
THE PEIRCEAN PARADIGMS

It was only after 1885 that Peirce was able to propose a new philosophy, for he had just conceived, to replace Aristotelean logic, a logic of relatives which could do without substance. Indeed, it was with the *substantive* conception of the world and

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[3] John Dewey, *The Influence of Darwin on Philosophy*, New York, Henry Holt and Company, 1910: 19.
[4] Descartes, *Oeuvres complètes*, La Pléiade, Paris, Gallimard, 1952: 131.

the mind that Peirce had always had difficulties. And it was the logic of relatives which enabled him to deliver a new Discourse of Method and to evolve a new phenomenology, which he called "phaneroscopy", in which substance has no place.

After saying a few words about the logic of relatives and describing briefly Peirce's new methodology, I shall examine phaneroscopy in greater detail, as without it one cannot understand and appreciate Peirce's semeiotic, which is only the application of phaneroscopy to the problem of knowledge.

## 1. *The logic of relatives*

It is a fact that Peirce became interested in the logic of relatives long before he read De Morgan in 1866, even if he drew the epistemological implications from it after writing his "Description of a Notation for the Logic of Relatives" derived from Boole, in 1870, and the phaneroscopic implications after writing his article "On the Algebra of Logic", published in 1885 in the *American Journal of Mathematics*. Briefly, Peirce substituted, for De Morgan's "relative terms" (W2: 359), and Aristotle's inference by "substantive" inclusion, inference by "transitive" inclusion (W2: 367).

## 2. *The new methodology*

In 1903, in his sixth lecture on pragmatism, Peirce no longer divides inference into analytic and synthetic inference in the Kantian way, but describes it as a process in three stages, the order of which is: abduction (already proposed by Peirce in 1878 under the name of hypothesis), deduction, and induction. It is unfortunate that Peirce used classical terms to denote two of these stages, as empirical induction has nothing to do with the process of testing deduction which constitutes Peircean induction.

> Abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea; for induction does nothing but determine a value, and deduction merely evolves the necessary consequences of a pure hypothesis.
> Deduction proves that something *must* be; Induction shows that something *actually is* operative; abduction merely suggests that something *may be*.
> Its only justification is that from its suggestion deduction can draw a prediction which can be tested by induction, and that, if we are ever to learn anything or to understand phenomena at all, it must be by abduction that this is to be brought about. (5.171)

## 3. *Phaneroscopy*

Phaneroscopy replaces Kantean phenomenology. Peirce maintains, like Kant, that we can apprehend the world only by reducing the manifold of phenomena or *phanera* to unity by recourse not to the *a priori* forms of sensibility, and the *a priori* categories of the understanding, but by recourse to those modes of being which Firstness, Secondness, and Thirdness are for Peirce.

The substitution of "phaneron" for "phenomenon" must not be underestimated. It is not another one of Peirce's terminological "quirks" (no more than are the other neologisms he introduced), but the expression of a genuine paradigm-shift. The phenomenon is no longer what *appears* to consciousness - which is the literal meaning of $\phi\alpha\iota\nu o\mu\varepsilon\nu o\nu$, and which consequently has to do with psychology, - but what is *apparent* independently of the fact that we perceive it - which is the literal sense of $\phi\alpha\nu\varepsilon\rho o\nu$ and which has to do with logic.

Historically, Peirce was first, from 1851 to 1867, an out-and-out nominalist: only Seconds - concrete individual existents - were real. Reality and existence were then synonymous. In 1857, he wrote: "Reality [refers] to the existence of the object itself" (W1: 18).

From 1867 onwards, more precisely during the winter of 1867-1868, in an unpublished item in which he criticised positivism, Peirce distinguished between existence and reality. What is real is "that which is independently of our belief and which could be properly inferred by the most thorough discussion of the sum of all impressions of sense whatever" (W2: 127). It will be remarked that this kind of reality, although general, is a sort of very classical Third, since it appears as the generalisation of Seconds. It was not before the logic of relatives and the new methodology that Thirds were no longer abstractions, but operative rules, *a priori* empty, of the type "if *p*, then *q*." Are they still realities?

It was not until much later, about 1890, that Peirce conceded that Firsts are also real. In 1891, he wrote: "In the beginning [...] there was a chaos of impersonalized feeling, which being without connection or regularity would properly be without existence." However, "this feeling, sporting here and there in pure arbitrariness, would have started the germ of a generalizing tendency" (6.33).

## Firstness

This Firstness is no longer the Firstness of the New List of 1867. Whereas in 1867 it could not be prescinded from being and was consequently not really first, in 1890 "the idea of the absolutely first must be entirely separated from all conception of or reference to anything else" (1.357).

The contrast is striking:

1) 1867: "[T]he conception of *this stove* is the more immediate, that of *black* the more mediate" (W2: 52).

   1890: " The first must ... be ... immediate" (1.357).

2) 1867: Quality is what synthesises the manifold of sense. Thus in "'The stove is black,' the stove is the *substance*, from which its blackness has not been differentiated, and the *is*, while it leaves the substance just as it was seen, explains its confusedness, by the application to it of *blackness* as a predicate." W2: 50)

   1890: The first "precedes all synthesis and all differentiation; it has no unity and no parts" (1.357).

3) 1867: "The conception of *being* arises upon the formation of a proposition. A proposition always has, besides a term to express the substance, another to express the quality of that substance" (W2: 52).

   1890: The first "cannot be articulately thought: assert it, and it has already lost its characteristic innocence" (1.357).

4) 1867: Quality is "a pure abstraction" (W2: 53). "The *Ground* is the self abstracted from the concreteness which implies the possibility of an other" (W2: 55).

   1890: The first is "present, immediate, fresh, new, initiative, original, sponta- neous, free, vivid, conscious and evanescent" (1.357).

## Secondness

There is no more substance, not because Peirce has come back to his original nomi- nalism, but because the logic of relatives has transformed his conception of the proposition. In 1867, to Secondness still belonged "those [representations] whose re- lation to their objects consists in a correspondence in fact, and these may be termed *indices* or *signs*" (W2: 56). In 1885, the index no longer denotes a plurality of objects

(1.563), it has become, with the help of O. H. Mitchell, the existential quantifier. It was then that Peirce, in his article in the *American Journal of Mathematics* (1885) quoted above, divided the constitutive elements of the proposition into two classes, which Peirce called respectively "token" and "index"[5]:

> Without tokens there would be no generality in the statements, for they are the only general signs; and generality is essential to reasoning, ... But tokens alone do not state what is the subject of discourse; and this can, in fact, not be described in general terms; it can only be indicated. The actual world cannot be distinguished from a world of imagination by any description. Hence the need of pronouns and indices, and the more complicated the subject the greater the need of them (3.363).
> The forefinger or index finger shows very well what an index is: The index asserts nothing; it only says "There!" It takes hold of our eyes, as it were, and forcibly directs them to a particular object, and there it stops. Demonstrative and relative pronouns are nearly pure indices, because they denote things without describing them; so are the letters on a geometrical diagram, and the subscript numbers which in algebra distinguish one value from another without saying what those values are (3.361).

Although logicians are satisfied with these two quantifiers, Peirce goes further in his analysis and shows that they are insufficient for reasoning; for reasoning we also need logical diagrams and sensorial - most of the time visual - images", which are icons:

> With these two kinds of signs alone [symbols and indices] any proposition can be expressed; but it cannot be reasoned upon, for reasoning consists in the observation that where certain relations subsist certain others are found, and it accordingly requires the exhibition of the relations reasoned within an icon (3.363).

The article of 1885 thus marks a definitive break in Peirce's philosophy of logic: the index is no longer conceptual, as it was in 1867, but, properly speaking, "existential" - a Second.

Take the proposition "this is red". I do not take the proposition "The stove is black", since Peirce has now rejected the subject as substance, although I could have done so, as we shall see. In the proposition "This is red", "this" is obviously not a substance, although it denotes an object. Of course one could object that "This is red" is

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[5] To be more precise, the token is the replica - case, instance, occurrence of a legisign or type. It is therefore a degenerate third, and it is in this sense that "symbol" must be understood here as it is used in mathematics: a "symbol" is general by description, but always singularly inscribed within the space of its representation. On the contrary, the index is a genuine second.

not a proposition, but is rather, as Peirce suggested in 1867, an incomplete sign. Incomplete, because, although implying the concepts of denotation and object, the object itself would never be known immediately. Would it refer to an object among other objects that another previous sign represented, but which could no longer be precisely named?

My questions are in the conditional mood for two reasons:

1. After 1885, Peirce no longer maintains this idea;
2. Many logicians and philosophers still think as Bertrand Russell did, that "This is red" is an incomplete sign.

What is the existential quantifier for Peirce after 1885 and what does it imply? The answer is in the description he gives of it in terms of "haecceity", a word he borrowed from Duns Scotus, but which he uses in Ockham's sense. I can say "This is red", not because "this" is a general term standing for a singular thing existing in the external world; on the contrary, if I can say "This is red", it is because the "this-ness" - haecceity - makes something exist. Haecceity is a principle of individuation and existence.


**Principle of individuation**

This is an experience which does not consist in a "sensory perception." Of course, Peirce said in 1903 "[w]e perceive objects brought before us; but that which we especially experience - the kind of thing to which the word "experience" is more parti-cularly applied - is an event" (1.336), something indescribable, unique, individual.

> A whistling locomotive passes at high speed close beside me. As it passes the note of the whistle is suddenly lowered from a well-understood cause. I perceive the whistle, if you will. I have, at any rate, a sensation of it. But I cannot be said to have a sensation of the change of note. I have a sensation of the lower note. But the cognition of the change is of a more intellectual kind. That I experience rather than perceive. It is [the] special field of ex-perience to acquaint us with events, with changes of perception. Now that which particularly characterizes sudden changes of perception is a *shock* ..
> ...It is more particularly to changes and contrasts of perception that we apply the word "experience" (1.336).

## Principle of existence

This uniqueness of experience is thus the effect of a coupling: action-reaction, effort-resistance. Because haecceity is a principle of individuation, it is a principle of existence:

> Existence is that mode of being which lies in opposition to another. To say that a table exists is to say that it is hard, heavy, opaque, resonant, that is, produces immediate effects upon the senses, and also that it produces purely physical effects, attracts the earth (that is, is heavy), dynamically reacts against other things (that is, has inertia), resists pressure (that is, is elastic), has a definite capacity for heat, etc. To say there is a phantom table by the side of it incapable of affecting any senses or of producing any physical effects whatever, is to speak of an imaginary table. A thing without oppositions *ipso facto* does not exist (1.457).

In short, I can say "This is red", not because "this" stands for a substance, because in this case the existential quantifier would be only a constitutive element of the universal quantifier and would have no proper role or function as it was the case in Aristotle's logic. I can say "This is red," because the existential quantifier is a *sui generis* function whose nature is radically different from that of the universal quantifier and because, in addition, it constitutes the act of foundation of the world of existents without which the universal quantifier could not exercise its function of generalisation.


## Thirdness

The universal quantifier is third. It says: "For every $x$, if $x$ is $a$, then $x$ is $b$." It is not an inductive generalisation from particular cases. it is a rule or law of which the cases are instances. The relation of the universal and the singular is that of the type and the token. The token is a replica of the type, a replica which is an existent whose very existence was not of course necessary, but necessarily possible, according the hierarchy of categories.

Does this conception of the universal condemn us to an aggravated form of nominalism? I do not think so, for the reason that the opposition between nominalism and realism has no longer any sense since pragmatism defined the idea as what it does. We are beyond nominalism and realism. The mind is in the world and in continuity with it. The law is a natural as well as a logical process. As a third without occurrences, the law is empty and as a second the occurrence without law is blind.

As for direct experience, a first, it is indeed "purely and simply", but it is not a cognition, because there is nothing intrinsically substantial to know beyond the triadic process which confers generality (thirdness) on the singular object (secondness) of my direct experience (firstness).

Elisabeth Walther

# Charles Sanders Peirce
## Leben und Werk

Charles Sanders Peirce (1839–1914) erfuhr in den letzten Jahr-
zehnten weltweite Anerkennung als Begründer des amerikani-
schen Pragmatismus und der modernen Semiotik (allgemeine
Zeichenlehre) auf relationaler Basis. Eine wachsende Anzahl
von Schriften und Büchern über seine grundlegenden Ideen und
die Gründung von Instituten für semiotische und pragmatische
Forschung waren die Folge. Kaum bekannt wurde jedoch bisher
das persönliche und berufliche Schicksal des universalen Ge-
lehrten, da eine Darstellung von Leben und Werk bisher fehlte.

Elisabeth Walther, ehemals Professorin für systematische Phi-
losophie an der Universität Stuttgart und seit 1960 durch Veröf-
fentlichungen zur Semiotik und zu Ch. S. Peirce international
bekannt, unternimmt mit diesem Buch den Versuch, die Lücke
zu schließen. Die faszinierende Persönlichkeit sowie der intellek-
tuelle Enthusiasmus von Charles Sanders Peirce, den schon
Zeitgenossen als genial bezeichneten, wird hier ausführlich dar-
gestellt. Daneben werden seine naturwissenschaftlichen und
philosophisch-wissenschaftstheoretischen Werke dokumen-
tiert und erläutert sowie seine Wirkung auf zeitgenössische und
nachfolgende Forscher aufgezeigt.

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