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A PHILOSOPHICAL COMMENTARY ON C. S.

PEIRCE'S "ON A NEW LIST OF CATEGORIES":

EXHIBITING LOGICAL STRUCTURE AND

ABIDING RELEVANCE

A Dissertation in

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by

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ABSTRACT

This dissertation focuses on C. S. Peirce's relatively early paper "On a New List of Categories"(1867). The entire dissertation is devoted to an extensive and in-depth analysis of this single paper in the form of commentary. All fifteen sections of the *New List* are examined. Rather than considering the textual genesis of the *New List*, or situating the work narrowly in the early philosophy of Peirce, as previous scholarship has done, this work pursues the genuine philosophical content of the *New List*, while paying attention to the later philosophy of Peirce as well. Immanuel Kant's *Critique of Pure Reason* is also taken into serious account, to which Peirce contrasted his new theory of categories.

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General Introduction

The Subject of the Dissertation

This dissertation presents a detailed analysis of C. S. Peirce's paper "On a New List of Categories." The paper was presented to the American Academy of Arts and Sciences in 1867. In subsequent years Peirce famously held that it was "perhaps the least unsatisfactory" paper he ever produced from a "logical point of view." He also regarded it as his "one contribution to philosophy," or "one of the most perfect gems of all philosophy" (see **1.1.1**).

There is little doubt that "On a New List of Categories" — hereafter abbreviated as the *New List* — marked a highly significant work for Peirce. The primary reason I focus on this single paper is that a number of fundamental ideas of Peirce's philosophy already appear in this relatively early work. The *New List*, however, is a very difficult paper. Most of the theoretical explanations are given by Peirce in one or two sentences. My dissertation, accordingly, attempts to understand the highly compressed arguments of the *New List* through a close reading of the text.

Features of the Dissertation

There are three important features that distinguish this dissertation from other works on the *New List*. First, greater attention is paid to the *philosophical content* of Peirce's arguments, not the prehistory or genesis of the text itself, such as in De Tienne (1996). The central concern of my work does not consist in how Peirce reached certain ideas in the 1860's, but what those philosophical ideas express.

This leads to the second important feature. I interpret the *New List* consistently along Kant's *Critique of Pure Reason*. It is important to bear in mind that Peirce brings himself into constant dialogue with Kant and responds to issues raised and scrutinized in Kant's *Critique*.[1] It is thus often difficult to grasp Peirce's insights without first setting them under the light of the *Critique*, which is particularly true of the *New List*,

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[1] Peirce is prepared to remind us that he was "a passionate devotee of Kant" (CP 4.2, 1898) in the 1860's; that he was "sufficiently soaked in the *Critic of the Pure Reason*" (EP 2: 199, 1903 [CP 5.128]); that he was "greatly impressed with Kant's *Critic of the Pure Reason*" (EP 2: 423, 1907 [CP 1.560]); that the *Critique* was his "philosophical weaning-bottle" (MS 320: 37, c.1907); that it was "little short of a Bible" (MS 619: 10, 1909); and so on.

a paper Peirce regarded as his philosophical master piece. That this offers a powerful approach to the *New List* should become evident as my discussion proceeds.

Third, I do not situate the *New List* narrowly in the early philosophy of Peirce, such as in Buzzelli (1972, 1974). Since Peirce *continues* to think highly of the *New List* over decades, it is important to link the arguments of the *New List* to his later views. I do not, therefore, hesitate to refer to Peirce's late texts between 1908 and 1913, namely, the last several years of the philosopher's life, which in fact turns out helpful to understand Peirce's relation to Kant in the *New List*.

Interpretive Orientation

It goes without saying that I owe much to previous scholarship, of which I mention some in the main body of my argument. The reading of the *New List* I propose, however, is more or less new to Peirce scholarship, which would be obvious once a comparison is drawn. But instead of explaining where the work is original, it would be more useful to indicate my interpretive orientation by briefly gesturing towards the replies I would make to potential objections to the entire project. I will confine my attention to five, very typical objections.

Objection 1. In the *New List*, Peirce talks about *sensuous impressions* being reduced to unity by *concepts*. But the later Peirce does not retain such an analysis of experience starting with *sensuous impressions*, so that the basic assumption of the *New List* must have been later withdrawn by Peirce himself.

The truth is that Peirce's analysis of experience starting with sensuous impressions survives in his very late philosophy. It is true that Peirce famously rejected *intuition*, or *immediate cognition*, in 1868, but since impressions are *pre-cognitive* on his account, the doctrine of *impressions* remains consistent with his rejection of *immediate cognition*. Section **7.2** is thus devoted to Peirce's late doctrine of impressions.

Objection 2. Peirce's *logic* of the *New List* is limited to Aristotelian syllogistic logic. Since there is no *logic of relatives* in the *New List*, the theory of categories developed there could not have maintained its original form in the later philosophy of Peirce.

It would be correct to say that there is not much *formal* logic of relations in the *New List*. There is, however, robust insight into *relational predicates* in the *New List*, which is sufficient for the theory of categories. More details of this is covered in **5.5.1** and **7.4.2**.

Objection 3. The influence of Kant on Peirce, which is manifest in the *New List*, reduces over the years. The mature philosophy of Peirce leans more towards that of Hegel, such that the Kantian view of the *New List* cannot claim unvarying significance it appears to claim.

What Peirce says a number of times is that he later came to see that his philosophy resembles that of Hegel. But nevertheless Peirce draws more directly upon Kant rather than upon Hegel. For instance when Peirce says, "Nature only appears intelligible so

far as it appears rational, that is, so far as its processes are seen to be like processes of thought," it is Kant, not Hegel, that Peirce has in mind. This will be discussed in **8.3.2**. I note in passing that Kant's influence on Peirce tends to become greater in 1908-1913.

Objection 4. There is no crucial argument of Peirce that is supplied *only* by the *New List*. What Peirce considers in the *New List* would be repeated by Peirce later and with greater detail and prescision.

It is not quite true that all the arguments in the *New List* are repeated elsewhere by Peirce. For instance, §14 of the *New List* demonstrates why there are exactly three kinds of signs with regard to their relationship to their object. To the best of my knowledge, Peirce only restates that there *are* such three signs, but *never* repeats the rigorous argument that shows why there are three and only three such signs. Another example. Peirce explains how his logic extends the Kantian view of logic to a form of objective and teleological logic in §15 of the *New List*. He would mention similar conclusions later, but the bold extension of logic is never explained as precisely as in the *New List*. I cover these topics in **6.2**, **6.3**, and **8.2.1**.

Objection 5. But Peirce himself frequently criticized the *New List*. His explicit acknowledgement of *errors* undervalues the *New List* in Peirce's own words.

As a matter of fact, Peirce did develop self-criticism of the *New List*, but it is more important to understand what *exactly* Peirce regarded as his mistakes. Commentators who wish to stress the errors and thereby endeavor to distance the later Peirce from the Peirce of the *New List*, tend not to pay attention to the nature of the *specific* errors acknowledged by Peirce, and also often overlook the fact that the various self-criticisms of Peirce occur in one and the same manuscript in which Peirce *also* says that the *New List* is "perhaps the least unsatisfactory" paper "from a logical point of view." The specific errors of the *New List* are discussed in **7.4**.

I cannot extend the list of conceivable objections further. But by responding to them in this way, I certainly do not need to commit myself to the following claims.

(1) The *New List* is the single, most important work of Peirce.
(2) The later works of Peirce can be reduced to the ideas in the *New List*.
(3) There is no important idea of Peirce that originates after the *New List*.
(4) An examination of the *New List* does justice to Peirce's entire philosophy.

I do not hold the following views either.

(5) There is no flaw, logical or philosophical, in the *New List*.
(6) My study makes all the ideas of the *New List* clear and intelligible.
(7) My approach reflects all manuscript information pertaining to the *New List*.

Contrary to (6) and (7), I think that the *New List* remains a difficult paper both philosophically and textually. Some of Peirce's arguments are not as convincing as Peirce seems to think, which would refute (5). Again, nowhere in my work would I have to say such things as follows.

(8) Peirce is mimicking Kant's deduction of categories in the *New List*.

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(9) Peirce in the *New List* accepts all basic Kantian assumptions.

(10) Peirce's interpretation of Kant's *Critique* is fairly standard.

It may appear that I need not emphasize such matters, but since in correspondence and otherwise I have frequently encountered similar concerns expressed by other Peirce scholars, I mention this so as to keep my interpretive orientation clear. Obviously, it is pointless to consider *which* paper of Peirce is the *most* important as in (1), deny Peirce of philosophical development after the *New List* as in (2) and (3), pretend to do justice to Peirce's entire philosophy by examining a single work as (4) claims, or to suggest that Peirce accepts all (or none) of Kant's assumptions as in (9). With regard to Peirce's interpretation of Kant, an issue related to (10), one of the helpful remarks of Peirce we may take into account would be this (MS 848: 12, 1911):

> Kant's great work [*Critique of Pure Reason*] was my study until, without the intention of doing so, I found I knew it almost by heart in both editions. I interpreted it, however, as I thought it ought for the sake of its truth to be interpreted, often departing from usual interpretations, and sometimes recognizing that I was departing from Kant's own meaning.

As we shall see, Peirce's *new* list of categories diverges significantly from Kant's categories. The method of derivation Peirce adopts is completely different from how Kant arrives at his table categories. Peirce challenges a number of Kantian assumptions. In this regard (8) can hardly be true. Peirce *nevertheless* tries to retain as many fine facets of Kant's critical philosophy as possible. My reading of the *New List* is naturally sympathetic with Peirce, but I do not need to load the *New List* with forceful justifications, which it may not deserve, just to understand the work better. The same applies to Kant's *Critique* as I discuss it in this dissertation.

The Structure of the Dissertation

In what follows, I will discuss all fifteen sections of the *New List*. The first six sections of the *New List* set up the fundamental framework of the theory, which form Part I of this study. More specifically, chapter 1 considers §1 through §4 of the *New List*, while chapter 2 examines §5 and §6. Then the *derivations* of categories follow, which shall fall under Part II. Chapter 3 focuses on the derivation of the first two categories, *Quality* and *Relation*, whereas the derivation of the third category, *Representation*, is discussed in chapter 4. The new list of categories is also presented in chapter 4.

On the other hand, §14 and §15 of the *New List* develop two important applications of the theory of categories thus obtained. §14 deals with *semeiotics*,[2] or Peirce's theory of signs. But since the derivation of *Representation* in §9 of the *New List* offers limited account of what a *sign* is for Peirce,[3] chapter 5 precedes the discussion of §14 of the *New List* in chapter 6, so as to sketch Peirce's *semeiotics* prior to considering the derivations

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[2] For my particular spelling of *semeiotics*, see **5.1**, footnote 1.

[3] For a quick overview of the structure of the *New List*, see **1.1.2**.

of *icon*, *index*, and *symbol*. The last two sections of chapter 6 follow up on *icon*, *index*, and *symbol* in some detail, which is important since this renders the difference between Peirce and Kant manifest. Part III thus focuses on Peirce's *semeiotics*.

Proceeding to §15, Peirce considers the application of the theory of categories to *logic*. Peirce's discussion in this section is not only dense and complicated, but also requires an attentive interpretation of the relationship between Peirce general theory of representation and Kant's concept of representation. Chapter 7, therefore, prepares the ground for an in-depth examination of §15, in addition to addressing Peirce's later self-criticism of the *New List*. Taken together with chapter 8, the purpose of Part IV is to widely observe Peirce's logic of representations through the spectacles of the last section of the *New List*.

There will be no general conclusion at the end of this work, since this dissertation consists of an in-depth and extensive analysis of the *New List* in the form of commentary. The full text of "On a New List of Categories" is included in Part V as an Appendix, which is based upon the original paper published in the *Proceedings of the American Academy of Arts and Sciences*. It is cross-referenced with three published texts: (1) the critical text published in *Writings of Charles S. Peirce*, volume 2; (2) the *Essential Peirce*, volume 1; and (3) the *Collected Papers of Charles Sanders Peirce*, volume 1. For general convenience, I have used the page and line numbers of the text in the *Writings* when reference is made to the text of the *New List*.

In closing this general introduction, I remark that the last two sections of the *New List* eventually compel the reader to reinterpret the first thirteen sections of the work. That is, the initial setup of the *New List* should receive a fresh interpretation once the reader has explored the ambitious terrain of *semeiotics* and *logic* that Peirce cultivates in §14 and §15 of the *New List*.

Part I

Analysis of the Framework

Chapter 1

New List §1-§4

1.1 Introduction

1.1.1 The "Gift I Make to the World"

On 14 May 1867, C. S. Peirce presented a brief article entitled "On a New List of Categories" to the American Academy of Arts and Sciences, which was published in its *Proceedings* in the following year. The article remained a highly significant achievement for Peirce. The "gift I make to the world," he wrote around the time of its composition, continuing: "In it I shall live when oblivion has me — my body" (W 2: 1, 1867). Thirty-two years later,[1] Peirce famously commented that the article was "perhaps the least unsatisfactory" paper he ever produced from a "logical point of view"(MS 787: 33, c.1899 [CP 2.340]).[2] In a letter to William James, Peirce states (MS L 224: 73, c.1905):

> There is mighty little in the C. S. Peirce of 1905 of identity with the C. S. Peirce of 1867. I feel entitled to speak of him as quite another person. But my opinion is that the paper On A New List of Categories is one of the most perfect gems of all philosophy. I have not been able to find any positive error in it. There is a good deal that was not then worked out; but the leading features were made out correctly.

After more than forty years, Peirce still perceived "the substance of my central achievement" to be focused in the *New List* (MS L 387b: 327, 1908). These, together with other similar remarks,[3] indicate that the *New List* had fundamental significance for Peirce.

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[1] The exact chronology of Peirce's manuscripts constitutes a difficult and unfinished task in Peirce scholarship. I have given priority to the dates confirmed by the Peirce Edition Project, and then to the Robin Catalogue and other resources. In some cases I shall use my best judgment, although this will be kept at an absolute minimum.

[2] For more details about this manuscript, see **7.4** (p.120) below.

[3] Peirce writes: "Each reëxamination [of the *New List*] [...] has reinstated the impeached doctrine in my estimation"(CP 2.332, c.1895); "for years, I endeavored to pooh-pooh and refute it; but it long ago conquered me completely"(CP 8.328, 1904); together with "Some Consequences of Four Incapac-

There are, however, much debated mysteries about the *New List* as well. The *New List* is not only an important paper but seems to exhibit obscurity in a number of ways. Thus Murray Murphey writes: "Certainly of all Peirce's published papers there is none which is so cryptic in its statement of essentials, so ambiguous in its definition of terms, so obscure in its formulation of the central doctrine, or so important in its content."[4] Tom Short also observes such obscurity in the work and has recently claimed that the work is to be seen as a *stepping stone* for Peirce, rather than a *keystone* in his architectonic philosophy.[5] Short has further raised the following question:

> For a crucial question is: What is the fundamental significance he attributed to it? Did he suppose that it remained the keystone to his arch? Did he think it supplied a crucial argument otherwise missing from his writings?[6]

My view is that Peirce did supply in the *New List* a crucial argument otherwise missing from his writings. The first two chapters of this work thus attempts to respond to such questions and also to remove obscurities and difficulties Murphey and a number of others have found with the first 13 sections of the *New List*, of which the current chapter focuses on §1 through §6.[7] Moreover, it will be shown that the *New List* develops a solid philosophical framework which anticipates much of the evolution of Peirce's later thought. It is in some measure true that the details of Peirce's arguments in the *New List* are harder to grasp and the ideas it contains are not sufficiently developed in comparison with his mature philosophy. Yet such details can be supplied by the interpreter, and the ideas of the *New List* can be effectively appraised in light of Peirce's writings as well.

1.1.2 The Structure of the *New List*

The *New List* aims at discovering the fundamental structure of thought organized by categories. It is useful to take a quick overview of the structure of the *New List* as a whole before moving forward (Table 1). In §1 and §2 Peirce introduces the notion of *elementary conceptions*, which are *categories* in the Kantian sense. §3 and §4 discuss the two traditional conceptions of *Substance* and *Being*, respectively, which are *not* derived by Peirce in the *New List*.[8] They are inherited from Kant and from traditional epistemology, as Kant himself presented his table in reference to the categories of Aristotle in the *Critique of Pure Reason* (A80/B105).

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ities"(W 2: 211-242, 1868), the *New List* is one of his two "strongest philosophical works"(MS 845: 25, 1905 [Peirce's original pagination reads 'A26']); [the *New List* is] "my one contribution to philosophy"(CP 8.213, c.1905). See also RLT 147-148 (1898), where Peirce has the discovery of the *New List* in mind.

[4] Murphey, *The Development of Peirce's Philosophy*, p.66, 1993.

[5] Short, *Peirce's Theory of Signs*, pp.31-32, 2007.

[6] In personal correspondence, dated September 18, 2008, cited with Short's permission.

[7] The *New List* consists of 15 sections. See Figure 1.1 below.

[8] Hence the two categories of *Being* and *Substance* will be dropped from Peirce's theory of categories in subsequent years.

§1	Standpoint of the *New List*	Introduction
§2	The Task of the *New List*	
§3	*Substance* as the Nearest to Sense	Where the Analysis Begins and Ends
§4	*Being* as the Furthest from Sense	
§5	*Prescision*: The Method of Derivation	Methodology
§6	*Unpsychologism*: How *Logic* and *Psychology* are Related	
§7	Derivation of *Quality*	Derivation of Categories
§8	Derivation of *Correlate*	
§9	Derivation of *Representation*	
§10	*Representation* is the last Category to be Derived	
§11	Presentation of the *New List* of Categories	The List
§12	Remarks on the *Order* of the Three Categories	
§13	*Supposable Objects* Corresponding to the Categories	Possible Ontology
§14	Classification of *Representation* into Three Kinds	Applications
§15	General *Symbols* and the Application of the Categories to *Logic*	

Figure 1.1: Overview of the 15 sections of the *New List*.

Prior to engaging the actual derivation of categories, §5 explains the method of derivation, which is called *prescision*[9] by Peirce, and §6 provides a summary of the method and makes strong appeal to *unpsycholigism* of logic which Peirce identified in Kant. The central task, the derivation of three categories, is carried out in §7 through §10. The new list thus obtained is presented in §11. This is followed by a brief remark on the order of categories in §12. A possible or conceivable *ontology*, based upon the obtained categories, is touched upon in §13.

It is reasonable to judge that the first half of the *New List* ends with §13, while §14 and §15 can be seen as *applications* of the arguments and results leading up to §13. This is because, first, the considerations in §14 and §15 are based upon the list of categories previously obtained, and second, there is a natural continuation of theme across §14 and §15. In §14, Peirce's systematic view of *semeiotics*, namely the study or theory of *signs*, appears in the form of a classification of *representations* into three kinds, which are termed *likeness*, *index*, and *symbol*.[10] The last section, §15, includes not only discussions of symbols in general but also some "application" (W 2: 59.20) of his "categories" to the subject of logic.[11]

1.2 The Standpoint and Task of the *New List*

1.2.1 The Standpoint of the *New List*(§1)

The first two sections of the *New List*, which consist of only three sentences, present the general standpoint (§1) and the task of the paper (§2). Peirce opens §1 with the following remark, which is the whole of §1, designating the standpoint he takes in the *New List* (W 2: 49.1-49.5):

> §1. This paper is based upon the theory already established, that the function of conceptions is to reduce the manifold of sensuous impressions to unity, and that the validity of a conception consists in the impossibility of reducing the content of consciousness to unity without the introduction of it.

The main standpoint taken by Peirce, which he refers to in this passage as a "theory already established," is that of Kant in the *Critique of Pure Reason*. The senses in

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[9] In this study I will spell *prescision* for the noun and *prescind* for the verb, since these were Peirce's preferred spellings, but in the originally published version of the *New List* Peirce spells these terms *precision* and *prescind*, respectively. See the *Proceedings of the American Academy of the Arts and Sciences*, vol.7, pp.289-292, 1868.

[10] *Likeness* will later be called *icon*, although Peirce does not completely abandon *likeness* as a terminology in his mature semeiotics, such as in "A Sketch of Logical Critics" (EP 2: 460-461, 1911). [See **6.4.3.2** (p.102f.), case study (8).]

[11] For the *New List*, I will include line numbers of the *W* edition. Thus 'W 2: 59.20' refers to volume 2, page 59, line 20 of the *Writings of Charles S. Peirce*. [For mainly copyright reasons, the full text in the *Appendix* is not taken directly from the *W* edition but from the paper originally published in the *Proceedings*.]

which Peirce stands close to or remote from Kant in the *New List* will become clearer down the way.[12] For the moment, we only need to note that Peirce accepts a broadly Kantian assumption that in experience there are *sensuous impressions* and *conceptions*, and that the latter, conceptions, unite the former.[13] Simple as it is, this is the basic framework Peirce inherits from Kant's *Critique of Pure Reason*.[14] It is important to bear in mind that *conceptions*, as long as one follows the spirit of Kant, are not self-standing abstract entities considered independently of experience. As Kant insists, conceptions seen in isolation from sense are devoid of content, or merely empty. Hence Peirce claims in due course of the *New List* that it is only upon "the requirement of experience"(W 2: 52.34) that conceptions are introduced. Kantian categories, or *conceptions* for Peirce, are to be interpreted *functionally*, not substantively, in a way similar to Wilfrid Sellars' reading of Kant's *Critique*.[15]

Peirce's functionalist interpretation of Kant is manifest in a much later revisit to the *New List* as well. In his 1893 attempt to rewrite or expand the original *New List* of 1867, Peirce states: "Kant, the farther of modern philosophy, said that the *function* of conceptions is to reduce the manifold of sensuous impressions to unity"(MS 403: 2, 1893; my emphasis).[16] In this regard it is also useful to note that when the *bearers* of such *functions* are explicitly considered in §13 of the *New List*, Peirce calls them "supposable objects" that the conceptions afford (W 2: 55.13). Such separate treatment of the *supposable objects* makes it clear that Peirce does not take conceptions as objectual entities up to §13 of the *New List*. Conceptions are uniting *functions*, not uniting *entities*. As we shall see later, this perspective marks a decisive step toward *semeiotics*, or Peirce's theory of signs.

1.2.2 The Task of the *New List* (§2)

The passage of §2 carries us further into the *New List*. Peirce introduces *universal conceptions*, whose functions are categoreal in the Kantian sense. The phrase "this theory" in the citation below has Kant in mind again (W 2: 49.6-49.9):

> §2. This theory gives rise to a conception of the gradation among those conceptions that are universal. For one such conception may unite the

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[12] For some of the important differences, see **2.2.2** (p.32f.), **3.1.8** (p.48f.), **4.3** (p.65f.), **4.5** (p.69f.), **6.4.2** (p.98f.), **7.3** (p.117f.), **8.1** (p.128f.), and **8.2** (p.130f.).

[13] In §15 Peirce will make clear that his theory has the entire realm of *possible* experience in mind, such that *experience* need not be taken to be *actual*. For more detail, see **8.2** (p.130f.).

[14] By *conception* and *sensuous impression*, we may assume that Peirce has *Begriff* and *Empfindung*, respectively, in mind. [cf. "Vocabulary of Kantian Phrases" attached to Peirce's early fragment of the translation of Kant's *Critique of Pure Reason* (MS 1005: 25, undated).]

[15] Wilfrid Sellars, *In the Space of Reasons: Selected Essays of Wilfrid Sellars*, p. 417, 2007.

[16] This statement is made in the first section of Manuscript 403. The manuscript bears critical significance on the *New List*, since it can be seen as Peirce's own commentary on the *New List* written some twenty-five years later. The manuscript is entitled "Division I. Formal Study of General Logic," possibly echoing Kant's *allgemeine Logik*. It could have been intended as a continuation of the fifteen sections of the 1867 *New List* since the section number of this manuscript starts from §16, but the content overlaps extensively with the *New List* of 1867 as well.

manifold of sense and yet another may be required to unite the conception and the manifold to which it is applied; and so on.

Conceptions are said to be *universal* in the sense that they are involved in *any* experience, actual or possible, and they are also termed *elementary conceptions* by Peirce in §5 of the *New List*, the terminology being more or less specific to the *New List* and its drafts.[17] and The remark on the "gradation" of conceptions, on the other hand, adumbrates the direction in which Peirce moves. In §10 of the *New List*, it turns out that the conception which "unites directly the manifold" (W 2: 54.30) is *Representation*. In the passage above, this is suggested by the phrase "one such conception." The conception required to join this *Representation* to the united manifold, on the other hand, is *Relation*, which will be discussed in §8 of the *New List*. As one would start to see, a chain of such conceptions is foreshadowed in the expressions "yet another [conception]" and "and so on." Proceeding in this way, Peirce derives three elementary conceptions, *Quality*, *Relation*, and *Representation*, in addition to the two traditional conceptions of *Being* and *Substance*, the latter two marking the beginning and end of the analysis.

As Peirce makes quite manifest, the *New List* is written under the strong influence of Kant. It is, however, worth noting that a subtle divergence is already hinted at in §2, since the task of the *New List* is, as the idea of "gradation" indicates, to derive a *hierarchy* of conceptions or categories. The hierarchical structure of categories is not as clear in Kant's *Critique of Pure Reason*. There are twelve categories in Kant's table, but the order in which they are applied is left largely unexplained. Which of Kant's categories are the more fundamental ones, or are the categories treated by Kant with equal weight and primacy? Although we may consider that some categories appear more fundamental in Kant's system than others, his table is at best partially ordered, whereas Peirce, as suggested in the quotation above, aims at establishing a simple but fully *ordered* list of categories or "conceptions." The new ordered list of categories Peirce arrives at in §11 of the *New List* looks like this (W 2: 54.35-39):

> BEING,
>> Quality (Reference to a Ground),
>>
>> Relation (Reference to a Correlate),
>>
>> Representation (Reference to an Interpretant),
>
> SUBSTANCE.

Note that in this presentation four commas and a period are used, suggesting the order in which it is read and interpreted. The primary task of the *New List* is to obtain this list.

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[17] For later tangential remarks on *elementary conceptions*, see EP 1: 310 (1892); CP 3.560 (1898).

1.3 Substance: The Last Conception (§3)

1.3.1 Two Directions of Analysis

Before discussing the conception of *Substance* in the *New List*, a slightly confusing aspect of Peirce's argumentation ought to be addressed. There are two opposite directions in which Peirce develops his analysis. Most conspicuously, he proceeds from *substance* to *being* in §3 and §4, whereas he proceeds from *being* to *substance* thereafter. This has not only caused confusions in existing interpretations of the *New List*, but also tends to cloud Peirce's own exposition after §4, since the first direction, from *substance* to *being*, recurs several times in Peirce's later analysis, which is, however, now moving in the direction of *being* to *substance*.

There is a stylistic problem here. But the basic principle Peirce is following is that when he regards experience from the viewpoint of empirical psychology, where experience is not considered in purely formal terms, Peirce moves from *substance* to *being*. This analysis, therefore, is intended as empirical or genetic. On the other hand, when a logical or formal analysis is attempted, hence without reference to the particular content and origination of such and such experience, Peirce proceeds from *being* to *substance*, in which case the analysis is intended as *logical*. Thus in §3, where Peirce proceeds from *substance* to *being*, he is starting with the empirical fact that various sensuous impressions are brought to unity in experience.

In terms of *conceptions*, however, we need to note that *substance* is the *last* conception, since the *logical* search for *categories* is not supposed to begin with grasping the psychological content of experience.[18] Observe also that prior to §5 Peirce has not introduced *prescision* as the method of derivation of categories, meaning that *substance* and *being* are not derived categories for Peirce. This implies that the question of how near we can get to sensuous impressions is partly an empirical question.

1.3.2 The Present in General

It is, therefore, not surprising that Peirce does not make the assertion that we can directly attend to *sense stimuli* or grasp the *given* in and of itself. Instead, what is considered by Peirce in §3 of the *New List* is the *conception* of that which is "nearest to sense," which is, of course, not sense stimuli themselves, whatever they could be. Peirce defines this conception as "*the present, in general*" (W 2: 49.10-11). Note that the sheer particularity of sense stimuli is already avoided, as it is the present *in general*. "This is a conception," Peirce continues, "because it is universal" (W 2: 49.11), or a phase universally involved in experience. It is "nothing but the general recognition of what is contained in attention" (W 2: 49.16-17), where "attention" is understood as a pure "denotative power of the mind, that is to say, the power which directs the mind to an [indefinite] object" (W 2:4 9.12-13) which "has no connotation" (W 2:49.12, 49.17).

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[18] Further details will be discussed in **1.4.2** (p.17f.) and **2.2** (p.30f.). [See also **5.1** (p.72f.) and **8.2.2** (p.133f.).]

In his 1893 revisit to the *New List*, Peirce characterizes *"the present, in general"* as follows (MS 403: 3, 1893):

> It represents the object of *attention*, in general.*[19] But the act of attention does not think its object has any particular suchness; it only seizes a fleeting phenomenon, as one might catch a fly, and makes it an *It* of it. We will term this conception, Substance. It is the making of an It out of a group of feelings.

There are three points to observe. First, *It* and *Substance* are not distinguished by Peirce in 1893 or in the *New List*.[20] Second, in such an inchoate state of experience, Peirce thinks that there is no definite structure of cognition that constitutes judgment or thought proper. This is why Peirce says in the *New List* that there is "no *proper* unity" (W 2: 49.17-18; my emphasis) in it. Third, such a state, however, does have a primitive or improper unity, since, as stated in the previous paragraph, the present in general is a *conception* whose function is to *unite*. Hence the conception of *It* or *Substance* in the *New List* implies, albeit improper, some form of unity, which is mirrored in Peirce's reference to *an* object without connotation.

An object as such is indefinite in the sense that no attribute is predicated of it yet. Hence the overall view Peirce has in mind is that, nearest to sense, experience can be described as a minimally united precognitive phase anticipating successive introduction of conceptions, by which experience obtains more structure and evolves into articulate forms of thought.

1.3.3 Substance and Phenomenalism

The connection to Kant is hence fairly obvious, but this needs to be underscored in yet another way. In the middle of §2 of the *New List*, Peirce suggests that the conception of the present in general, or "IT in general," as he calls it, is effectively the same as the conception of substance as he reaffirms in 1893. In Peirce's words (W 2: 49.18-26):

> This conception of the present in general, or IT in general, is rendered in philosophical language by the word "substance"[21] in one of its meanings. Before any comparison or discrimination can be made between what

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[19] In the manuscript there is an asterisk referring to a footnote which is not completely legible. Peirce appears to write: "The author, as long ago as 1867, assigned this fundamental importance [to] attention, wherein he has been fully borne out by more recent psychological researches." I will, however, not consider this further.

[20] For the *New List*, see the next section **1.3.3** (p.14), first block citation.

[21] In this study I will continue to use *double quotation marks* within block citations, rather than replacing them with single quotation marks. The reason for this is that (1) Peirce uses double quotation marks very often in his writings; (2) the current study pays particular attention to Peirce's original text; (3) there have been, however, erroneous presentations of the original text in the widely used editions of Peirce's writings. [See for example **4.4**, footnote 4 (p.68); **6.2**, footnote 5 (p.86); **6.4.2**, footnote 8 (p.98); **7.3**, footnote 13 (p.119); **8.3.2**, footnote 17 (p.138); and **8.4.4**, footnote 27 (p.143).] In order to reduce errors of transcription and retain the original features of Peirce's text, I prefer to leave the original double quotation marks.

is present, what is present must have been recognized as such, as *it*, and subsequently the metaphysical parts which are [first] recognized by abstraction are [then] attributed to this *it* [by the act of mind], but *it* cannot itself be made a predicate. This *it* is thus neither predicated of a subject, nor in a subject, and accordingly is identical with the conception of substance.

The remarks on substance toward the end of the passage might appear somewhat misleading if the phrase "in one of its meanings" is overlooked. As the foregoing discussion has already marked out, what is most important here is the Kantian notion of substance which Peirce continues to identify as a *conception*. As a conception, substance stands interior to sense, as it were, for on this account substance is more internalized to the experiencing agent than sense, or the sense is more external to the experiencing agent, to put it the other way round.

The conception of substance construed in this manner helps us unfold a form of *phenomenalism* in the *New List*. It is helpful to recall that in Kant's table of categories substance is subsumed under the first of the three categories of relation (A80/B106). On Kant's view the application of the category of substance to the manifold of sense by way of schematism constitutes the basis of an object that persists through time.[22] Otherwise, so argues Kant, impressions will never amount to the relative permanency of an enduring object. Impressions will have to fleet away as they come, a point Hume would be happy to make.

It is then natural for us to think that the kind of generality involved in Peirce's *present, in general* also arises from the unity of substance through time.[23] Without the conception of "substance" or "IT in general," no impression stays. The *conception* of substance is hence requisite for the seizing of every "fleeting phenomenon," to borrow Peirce's expression. This encourages us to interpret Peirce's substance as *phenomenal* in a Kantian sense, or as Peirce would make it clear four years after in 1871, his theory involves a "phenomenalism of Kant, and not that of Hume"(W 2: 470, 1871).

In light of phenomenalism, we are further prompted to observe that an *object* in the cognitive process must be seen as involving a stream or succession of phases, rather than being a solid entity given at the inception of perception. Peirce could have taken this to be a plain matter at the outset of the *New List*, as he offers little explanation, but that he held such a view receives little doubt. In fact Peirce remarks in §15 of the *New List* that "objects" are "always potentially a plurality, — at least, of *phases* or *appearances*" (W 2: 57.34-58.1; my emphases). What is meant by this is that each temporal phase of experience presents the object as appearing in that phase, and the unification or synthesis of the phases or "appearances" (note the Kantian expression again) results in the recognition of the object. "There are," Peirce succinctly explains in 1893, "distinguishable grades in the process of unification"(MS 403: 3, 1893). The

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[22] The *schema* of substance is "permanence of the real in time [die Beharrlichkeit des Reales in der Zeit]"(A143/B183). Note that the real — and hence the category of reality — is tacitly involved in Kant's schema of substance. [The concept of *reality* will be extensively reworked by Peirce.]

[23] Peirce writes: "In like manner, as Substance is the *generalized* idea of the excitation of sense, so we can *generalize* the quality of sense"(MS 403: 3, 1893; my italics).

conception of *substance* in §3 of the *New List*, therefore, designates the crudest unity of such phases or appearances in which objects of thought are afforded.

1.4   Being: The First Conception (§4)

1.4.1   Being as Copula: No Content

As it should be apparent by now, Kant remains influential in the *New List*. In obtaining a list of categories, Peirce thinks together with Kant that the analysis of the forms of thought provides us with the right starting point. This is because elementary conceptions, or categories for Peirce, are nothing but the logical instruments of mind by which experience is united and structured.

Through his study of logic, however, Peirce was lead to think that the particular table of judgments Kant adopted in the *Critic of Pure Reason* was not immune to criticism. Since the mid 1850's Kant's overall strategy appeared correct to Peirce, but the table of judgments Kant resorted to involved arbitrariness. For traditional Aristotelian logic on which Kant founded his table does not study the forms of thought exhaustively. In particular, there would be no place for relational predicates such as "murder"(W 2: 53.27) or "is less than"(W 2: 58.9) in Kant's treatment of judgments since they are missing in traditional syllogistic logic.

While admiring Kant for the grand enterprize, therefore, Peirce took the general structure of *proposition* as the starting point of his analysis. By *proposition* Peirce understands the logical construct of thought which has a predicate conjoined to a subject or subjects. Let us note that it is the starting point that Peirce has changed, not the idea of *categories* as unifiers of thought. §4 of the *New List* now opens as follows (W 2: 49.27-50.1):

> §4. The unity to which the understanding reduces impressions is the unity of a proposition. This unity consist in the connection of the predicate with the subject; and, therefore, that which is implied in the copula, or the conception of *being*, is that which completes the work of conceptions of reducing the manifold to unity.

There are two interrelated observations to be made in this passage. First, there is nothing *ontological* about the conception of *being*. As Peirce makes sufficiently clear, *being* is merely the logical function of the understanding, by which the predicate of a proposition is joined to the subject(s). *Being* refers to this logical bond, nothing more. Second, since thought achieves an explicit structure with the formation of a proposition, *being* is said to "complete" the reduction of manifold to unity. From a genetic point of view, this simply means that *being*, a conception that conjoins the predicate and the subject, constitutes the final phase of *apperception*, to speak in a more Kantian language.

It can be seen from this that Peirce is in basic agreement with Kant. In the *Critique of Pure Reason*, Kant makes the famous claim that *Sein* is not a real predicate but

"merely the copula of a judgment" (A598/B626) and that it adds nothing to the subject since its function is to "posit the predicate in its relation to the subject" (A599/B627). In much the same spirit Peirce goes on to remark that the conception of *being* is contentless (W 2: 50.1-7):

> The copula (or rather the verb which is copula in one of its senses) means either *actually is* or *would be*, as in the two propositions, "There *is* no griffin," and "A griffin *is* a winged quadruped." The conception of *being* contains only that junction of predicate to subject wherein these two verbs agree. The conception of being, therefore, plainly has no content.

It is to be remarked that the two first examples of propositions Peirce considers in the *New List* require *quantifiers* for modern formalization. The "*actually is*" is associated with the existential quantifier, whereas "*would be*" is associated with the universal quantifier. The precise relationship between the two quantifiers via negation would remain unclear for the next thirteen years. Yet it is noteworthy that Peirce has generalized the function of the *copula* to that of the *verb* in a proposition, marking a significant step toward his *logic of relatives*, a version of formal logic with n-place predicates.

To sum up, *being* is the final or completing function of unification that takes place in the synthesis of thought in the genetic sense. It is, however, the *first* conception to attend to as long as propositions are taken as the starting point of logical analysis. The next small section clarifies the distinction between the genetic and logical standpoints coexisting in the *New List*.

1.4.2   Being and Substance: The Genetic and Logical Standpoints

From a *genetic* or *psychological* standpoint, *being* is clearly the *last* conception to be arrived at since it completes the formation of a proposition. Yet it is the *first* conception to be attended to for the purpose of logical analysis, since it is from the *propositional structure*, not from an unknown psychological origin, that categories of thought should be derived. In contrast, *substance*, the conception nearest to sense, refers to the *first* improper unification of thought in terms of genetic order, while it is the *last* conception to be arrived at from a logical point of view. I have already mentioned in **1.3.1, p.13** that there are two distinct directions of analysis in the *New List*. They run opposite to each other in the following manner:

Genetic Analysis [empirical psychology]

first   *last*

Substance ⟶ Representation ⟶ Correlate ⟶ Quality ⟶ Being

Logical Analysis [transcendental logic]

first   *last*

Being ⟶ Quality ⟶ Correlate ⟶ Representation ⟶ Substance

The distinction between the two directions is not trivial, as it would correspond to the distinction drawn by Kant between empirical psychology and transcendental logic

as indicated in the brackets (A54/B78), although for Peirce logic is *not* transcendental logic, a point to be considered later. Yet for both Kant and Peirce, what qualifies logical analysis qua *logical* is the legitimacy of the starting point together with the direction and method of analysis. As Kant contends a good number of times, collecting psychological content as a starting point does not account for the universality of the forms of thought. Peirce in the *New List* consents to this Kantian programme.

The explanation Peirce offers at the end of §4 of the *New List*, on the other hand, appears slightly misleading with regard to the two opposite directions of analysis. Peirce writes: "Thus substance and being are the beginning and end of all conception" (W 2: 50.22-23). This, I say, is misleading, because it may wrongly hasten the reader to parallel the conception of "substance" with "the beginning," and the conception of "being" with the "end," which is true only in the *genetic* sense, while it is the logical analysis that plays the central role in the *New List*. Indeed the phrase "the beginning and end" is evidently rhetorical, since Peirce does not say 'the beginning and *the* end' in addition to the use of the singular form "conception." The statement should not be confused with what could have been meant by 'the first and *the* last of all *conceptions*.' Once *prescision* as the method of derivation is introduced in §5 of the *New List*, the direction of logical analysis will become much clearer, hence leading to the ordered list of the new categories we saw in **1.2.2**(p.11).

1.4.3   Example: "The Stove is Black."

1.4.3.1   Peirce's Text

In the remainder of §4, Peirce introduces another example of proposition, 'The stove is black," which has been widely discussed in Peirce scholarship (W 2: 50.8-11):

> If we say "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.

The reason "the stove" is so easily equated with "substance," which is supposed to be an indefinite object on our previous account, is that Peirce is looking at *substance* through the arising propositional structure. That is, he is considering substance through the synthetic mental acts as opposed to exploring substance as a dark psychological source of cognition. The example also reveals that by substance Peirce hardly means bare material of some sort lurking behind appearance. Substance is a conceptual formation through which an object is presented as phenomenon.

The passage cited above discerns two stages. First, when the proposition is uttered or thought of, Peirce writes that the blackness "has not been differentiated" from the stove. The consciousness of the stove and that of blackness are in one, as when, for instance, walking in the woods the green is not differentiated from the countless leaves, although we could happen to utter, "The leaves are green." Second, turning to the consciousness of the propositional structure itself, Peirce directs his attention to the

function of the *is* in the proposition. The *is*, which expresses the formal application of the predicate to substance, indicates the necessary *differentiation* of "blackness" from substance together with the *application* of this quality to it as a possible predicate. The claim is that if a proposition is formed, there should be structures to be combined so as to form the proposition. In this way, the *is* accomplishes its uniting work. The consciousness of the blackness, therefore, is differentiated from that of substance, which, by way of abstraction, renders the blackness itself a consciously conceived predicate by its contrast to the substance.

But in so far as the blackness is interpreted as an aspect *of* the substance, or *of* the stove in this case, the blackness has to be reunited with the substance. For it is not *our mind here* that is colored black in perception but *the stove over there* that appears to have the attribute of blackness. In §3 of the *New List*, this was expressed by Peirce in the statement that "the metaphysical parts which are recognized by abstraction are attributed to *it*"(W 2: 49.22-23). The expression "attributed" would be better understood as 're-attributed,' if we wish to highlight the differentiation process prior to the attribution of a predicate to substance.

1.4.3.2   Unification, Differentiation, and Reunification

Readers of the *Critique of Pure Reason* may notice that the principle governing such a process beginning with initial unification, followed by differentiation, and then re-unification, can be mapped to the Kantian principle of synthetic-analytic act of understanding. In his deduction of pure categories, Kant holds that "where the understanding has not previously combined anything, neither can it dissolve [auflösen] anything, for only through it [understanding] can something have been given to the faculty of representation as combined"(B130).[24]

Admittedly, Kant's point is that synthesis by way of categories requires higher unity without which the understanding is unable to operate. Hence the emphasis falls upon *synthesis* in Kant. But if both (1) a fundamental unity and (2) partial structures to be combined ('verbunden' for Kant) are presupposed, a phase of internal differentiation should be involved. In this sense Peirce is attempting to render the apperceptive process more conspicuous than Kant by reconstructing it as a continuous process of unification, differentiation, and re-unification. It would be like unfolding a confused knot (of impressions) and then refolding it into a ribbon (a better structured thought). Initial interpretation, and then re-interpretation, if one pleases.

Accordingly, Peirce considers that the introduction of the 'is' (or more generally a verb) into the cognitive process implies the transition from the differential phase to the more explicit formation of a proposition. This is why the 'is,' Peirce says above, "explains" the "confusedness" of the substance, meaning that without the formation of a proposition the mind is not in possession of a definite form of thought. Since a variety of predicates can be united to substance, Peirce naturally adds: "Though being does

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[24] Kant repeats the point: "the *analytical* unity [die a n a l y t i s c h e Einheit] of apperception is only possible under the presupposition of some synthetic one"(B133).

not affect the subject [which denotes substance], it implies an indefinite determinability of the predicate"(W 2: 50.12-13). A number of possible re-unifications through various predications are foreshadowed or anticipated in the thought process, of which in most cases only one becomes the actual predicate when a proposition is formed.

1.4.3.3   'Analysis' of the Synthetic Process

In view of unification, differentiation, and reunification, therefore, analysis presupposes synthesis, and *vice versa*. This is the view Peirce is trying to draw from Kant's *Critique*. However, the *vice versa* part is much clouded in Kant's *Critique*, since by 'analytic' (or 'Analytik') Kant is inclined to treat analysis in the ordinary sense very lightly and instead attempts to understand a rather peculiar mode of analysis, which is by no means an analysis of what is present to the mind, but "the analysis of the faculty of understanding itself"(A66/B90). It therefore becomes a *self-analysis* for Kant. We must then note that in Kant the connotation of 'analytic' is already quite different from that used in the sense of 'analytic [analytisch]' judgment.

Against this Kantian 'analysis' of mind, however, Peirce will have two serious questions. First, is the mind actually equipped with the competency to conduct such self-analysis? For Kant 'analysis' is reflective in an important sense, but how far can our reflection go? Second, which is related to the first, are not the supposedly 'analytic' judgments in fact synthetic judgments, in that whether a concept is already contained in or subsumed under another concept requires *comparison*, which is a synthetic act of the mind. For until we *compare*, there seems to be no way to know if a containment-relation obtains between two concepts.

Hence Peirce's view is that (1) the analytic process of mind is not in principle different from the synthetic process; (2) accordingly various modes of differentiation ought to be considered in the synthetic process itself; and (3) 'analysis' of thought should refer to the differentiation of conceptual elements in ordinary experience, not to peculiar introspective analysis of understanding itself regarded as a faculty. As one would see, the three points are reflected in Peirce's analysis of the proposition, "The stove is black." This means that a method of analysis, other than reflection or introspection, is in order for Peirce.

Chapter 2

New List §5 and §6

2.1 The Method of Derivation: Prescision (§5)

2.1.1 Overview of the Idea

The two conceptions, *substance* and *being*, do not require any special method of derivation, since Peirce thinks that the function of the demonstrative pronoun 'it' and that of the copulative element of a proposition are conspicuous to any competent agent. The harder work is to discover elementary conceptions or categories that might lie between *being* and *substance*. In order to probe for further categories, Peirce introduces a method of derivation, which he calls *prescision*.

As a preliminary remark, the method of *prescision* is not the *only* justification Peirce has for his theory of categories. In later years Peirce would for instance say that part of our knowledge of the categories can be directly obtained from experience, since the categories are, presumably, active or operative in *any* ordinary experience. This is, however, an *a posteriori* approach empirically verifying the plausibility of the theory, not a rigorous demonstration of the theory. Hence the formalistic procedure of *prescision* Peirce follows in the *New List* bears lasting significance, which, not incidentally, accounts for Peirce's high appraisal of the *New List* over the years to come.

In the forgoing sections, I said that the *New List* analyzes the ordered structure of the successive phases of cognition that results in the formation of a proposition. The intuitive idea of *prescision* is to reverse this formation process. That is, *prescision* is used to determine the logical order in which the indeterminate thought without explicit structure has been shaped into a determinate propositional structure. But returning to a previous question raised in **1.2.2** (p.11), how, or in which order, are the categories applied in the successive phases of cognition?

To answer this question, Peirce works backwards by reversing the formation process. That is, assuming that a proposition is formed in thought, Peirce uses *prescision* to peel off one by one the categories that effected the higher unities.[1] In other words,

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[1] Peirce writes in his definition of the verb *prescind* in *The Century Dictionary*: "To separate from other facts or ideas for special consideration; strip of extrinsic adjuncts, especially in

starting from the surface structure, which is the unity of *being*, Peirce wishes to reveal the deeper conceptual layers that have constructed the object of cognition into what it is. Thus the *first* category we shall discover by *prescision* would be the *last*, or the shallowest, category that was added to or integrated into the represented object at the latest stage. The *last* category that we shall discover by prescision would be the *first*, or the deepest, category that was applied to the object at the beginning of this process.[2]

If we have two categories X and Y, therefore, Peirce needs a method to determine which of the two was the deeper or the more immediate category that was integrated into the represented object prior to the other. *Prescision* is designed to do this work.

2.1.2 Definition of Prescision

2.1.2.1 Peirce's Text

Given the context, therefore, there is not much need to inquire into the etymology of *prescision*. This is because Peirce uses the term in the way he *defines* it, although his definition evidently mirrors his in-depth knowledge of medieval logic.[3] The proximate meaning of *prescision* is *non-reciprocal abstraction*. Peirce will claim that if X can be prescinded from Y, but not Y from X, then X is the more mediate conception than Y, hence higher or more mediate in the "gradation" of conceptions. Thus *prescision* determines the logical order of the elementary conceptions. The text of §5 begins with the following lines (W 2: 50.25-30):

> §5. The terms "prescision" and "abstraction," which were formerly applied to every kind of separation, are now limited, not merely to mental separation, but that which arises from *attention to* one element and *neglect of* the other. Exclusive attention consists in a definite conception or *supposition* of one part of an object, without any supposition of the other [part(s) of the same object].

As I mentioned already, cognition is for Peirce a synthetic development of lower unities toward higher or more mediate unities of thought. Hence it is essential to this

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conception"(pp.4700-4701, 1889). [For information on this entry, see Kenneth L. Ketner, *A Comprehensive Bibliography of the Published Works of Charles Sanders Peirce with a Bibliography of Secondary Studies*, second edition, pp.43, 71, 1986.]

[2] The adjectives *shallow* and *deep* are used intuitively and for expository purposes. If the spatial metaphor sounds misleading, take 'deep' to mean *immediate* or *external*, 'shallow' to mean *mediate* or *internal*. The latter adjectives are actually used by Peirce.

[3] In his contribution to Baldwin's *Dictionary of Philosophy and Psychology*, Peirce traces *prescision* back to *praecisio* and makes references to Duns Scotus and more remotely to Aristotle, which means that he has in mind the broad scholastic tradition descending from Aristotle. "The medieval doctors speak of *prāecisio*, by which they mean *prāescissio*, or forth-cutting," Peirce writes, by which is meant "that kind of mental separation which results from *attention to* one element of an idea, and *neglect of* the rest"(MS 403: 4, 1893). Compare with Aristotle, *De Anima*, III. vii. 7 [especially, 431a20-25, 431b13-21]; Baldwin (ed.), *Dictionary of Philosophy and Psychology*, vol.2, pp.323-324, 1902 (cf. CP 1.549n). For Peirce's relation to Scotus and the scholastic tradition, see Boler, *Charles Peirce and Scholastic Realism*, 1963.

view that we observe a *complex* of appearances already united into an object of thought — call this an *object-complex* — and then work backwards. In intuitive terms, we need to see step by step which layer of a represented object can be stripped off without destroying the definite cognition of the object up to a certain stage. This is why Peirce says above that we attend to 'one part of *an* object' without any supposition of '*the* other [part(s) of the same object].'

Thus if one perceives a square object colored red and commits herself to the proposition "The object is red and has a square shape," the question is this: 'Square' or 'red,' which was the more immediate or internal conception that was applied to the object prior to the other? To determine the order, we must do two things: (a) *attend to* the 'red' color of the thing to the *neglect of* the 'square' shape; (b) we *attend to* the 'square' shape of the thing to the *neglect of* the 'red' color. If (a) is successfully performed while (b) fails, the 'red' is judged to be the more mediate conception, and the 'square' judged to be the more immediate, or deeper, conception that was applied prior to 'red.' Conversely, if (b) is successfully performed while (a) fails, the opposite is the case. If both (a) and (b) fail or obtain *simultaneously*, no conclusion follows.

2.1.2.2 Our Definition

Based upon these considerations, Peirce's definition of *prescision* can be given as follows:

> **Definition**
>
> Let X and Y be elementary conceptions or categories.
> 1. [Meaning of *Prescision*] If we can *attend to*, or definitely comprehend, X, to the *neglect of* Y, we say that X can be *prescinded* from Y. If X *cannot* be *attended to*, or definitely comprehended, to the *neglect of* Y, we say that X cannot be *prescinded* from Y.
> 2. [Use of *Prescision*] Suppose X can be *prescinded* from Y, but Y *cannot* be *prescinded* from X. Then we judge that X is the more mediate category than Y, meaning that Y is the more immediate category and was employed prior to the employment of X.

This could appear somewhat confusing, but a relatively quick way to keep track of the principle is the following. Prescision means non-reciprocal abstraction. Thus successful prescision of X from Y — and in this direction alone — implies that X is more abstract and hence more mediate than Y. On the contrary, if X cannot be *prescinded* from Y, but Y *can* be *prescinded* from X, then X is the more concrete or immediate category which is nearer to 'substance' in the sense already explained. A diagram would be helpful: If X *can* be prescinded from Y but *not* vice versa, X is more abstract and mediate, meaning that Y lies deeper toward substance in comparison to X, as shown in Figure 1.[4]

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[4] Figures in this study are of course not meant to replace definitions or verbal explanations in general.

X can be prescinded from Y, but Y cannot be prescinded from X.
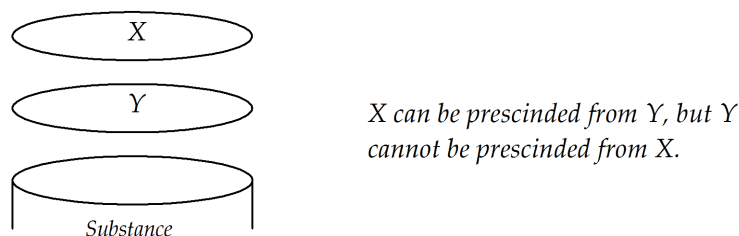
Figure 2.1: Prescision. Layer Y is more immediate or nearer to Substance than layer X.

Peirce's formulation of *prescision* is generally consistent with Kant's view on *abstraction*,[5] so that while *prescision* is often explained by Peirce as a mode of abstraction, it probably made sense to him to take *prescision* and *abstraction* as equivalent in the text cited in **2.1.2.1** (p.22). The italicized word "*supposition*" in the passage, on the other hand, is borrowed from medieval logic again, which Peirce has also phrased as "definite conception." If by "definite conception" we understand the layered structures of a given object, the interchangeability of the two expressions might be indeed suggestive, but we need not distract ourselves by delving into history because "definite conception" is intelligible enough.

2.1.3 Three Modes of Separation

To expound upon *prescision* (or equivalently "abstraction"), Peirce now observes three distinct modes of mental separations, which are *discrimination*, *prescision*, and *dissociation* (W 2: 50.30-51.1):

> Abstraction or prescision ought to be carefully distinguished from two other modes of mental separation, which may be termed discrimination and dissociation. Discrimination has to do merely with the essences of terms, and only draws a distinction in meaning. Dissociation is that separation which, in the absence of a constant association, is permitted by the law of association of images. It is the consciousness of one thing, without the necessary

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[5] Compare for example with Kant's *Attempt to Introduce the Concept of Negative Magnitudes into Philosophy* (1763), §3 (Academy edition 2: 190-191); *Inaugural Dissertation* (1770), §6 (2: 394); *Anthropology from a Pragmatic Point of View* (1798), §3 (7: 131). From Kant's lectures on logic, consult: The Blomberg Logic (early 1770's), §144 (24: 136-137), §254 (24: 252-253), and §257 (24: 255-256); The Vienna Logic (c.1780), "Of Concepts" (24: 907-908); The Dohna-Wundlacken Logic (early 1790's), "Of Concepts" (24: 753-754); The Jäsche Logic (relatively late lectures), "Introduction" (9: 45), §6 (9: 94-95), and §15 (9: 99); and so forth. [My references to Kant's work, other than the *Critique of Pure Reason*, are made to the Academiy edition, where I indicate the volume number, a colon, and then the page number.]

> simultaneous consciousness of the other. Abstraction or prescision, there-
> fore, supposes a greater separation than discrimination, but a less separation
> than dissociation.

The explanation involves some ambiguity. Peirce is talking about both the *mental act of separation* and the *separation of elements* with regard to an object-complex. The correlation between the two is that if a separation of elements presupposes a stronger act of separation, then the bond or connection between the separated elements is tighter.

The strongest act of separation of the three modes of separation is *discrimination* on Peirce's account, since whatever in the object-complex can be distinguished in terms of essence of meaning can be separated accordingly. On the contrary, the weakest act of the separation of the three is *dissociation*, since it can dissociate elements in the object-complex only when there is no necessary connection. Hence if two elements can be *dissociated*, the bond between them is fairly week. From this it can be said that *Prescision* is a subtle separation,[6] since standing between *discrimination* and *dissociation*, it tries to pull elements apart neither too strongly nor too weakly.

As researchers have noticed, an essentially same explanation was drafted by Peirce in 1866, which appears more accessible than that in the *New List* because of a diagram accompanying the argument. Note that this part of the 1866 draft is very close to the final form found in the *New List* (W 1: 518-519, 1866):

> *Abstraction* [prescision], therefore, supposes a greater distinction be-
> tween its members than discrimination [. . .] ; but it supposes less distinc-
> tion than dissociation which is the consciousness of one thing without the
> necessary simultaneous consciousness of the other. Thus, I can discriminate
> red from blue, space from colour, and colour from space; but not red from
> colour. [. . .] I cannot prescind colour from space, nor red from colour. I can
> dissociate red from blue, but I cannot dissociate space from colour, colour
> from space, nor red from colour. In the following table O shows what I can
> hold and X what I cannot hold.

From the diagram Peirce draws above, it is clear that the *act* of separation is considered the most sensitive or strongest with *discrimination*, since it separates three of the four cases considered, and weakest with *dissociation* which separates only blue from red. The underlying idea is that if the strength of X connected to Y exceeds the strength of Y connected to X, then Y must be judged to be the higher or more mediate unifier of the two. A diagram modified with supplementary explanation is presented below as an aid to understanding (Figure 2.2 [p.27]). The most important point with regard to these examples is that the mode in which colour is connected to space is stronger than the mode in which space is connected to colour, since the same strength of separation by prescision can separate space from colour, but *not* vice versa, a case to be considered in the next section. The non-reciprocity is highlighted by shading the two middle cases of *prescision*.

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[6] Buzzelli (1972: 68) thus states: "Precision is intermediate and makes a delicate balance between these other two [modes of separation, namely, *discrimination* and *dissociation*]."

	blue without red	space without colour	colour without space	red without colour
By discrimination	O	O	O	X
By precision	O	O	X	X
By dissociation	O	X	X	X

2.1.4   Examples of Prescision

The example of prescinding space from color is repeated in the *New List* as follows (W 2: 51.1-4):

> I can prescind red from blue, and space from color (as is manifest from the fact that I actually believe there is an uncolored space between my face and the wall); but I cannot prescind color from space, nor red from color.

Recalling that the method of prescision is meaningful only when it fails in one direction, we see that the only *full* example Peirce mentions is the prescision of space from color but *not* vice versa. The question returns: 'Space' or 'color,' which is the more mediate category? Thus we start with a colored space. By the definition of prescision, we have to do the following: (a) *attend to* the 'space' to the *neglect of* its 'color'; (b) *attend to* the 'color' to the *neglect of* the 'space' it colors. As Peirce explains in the parentheses, it is obvious that (a) can be successfully performed. However, if we start with the colored space and try to *attend to* the color to the *neglect of* the space it colors, the space will have to lose all its dimensions, such that there remains no dimension that the color can cover at all, meaning that (b) fails. Thus space is the more mediate, color the more immediate.

Unfortunately, this is the only full example Peirce explains in the *New List*. But we can think of other examples on our own. Here is a Husserlian one. Imagine we hear a note from a musical instrument. It is heard with pitch and tone. "A violin has played a B-flat" we might say. 'Pitch' and 'tone,' which is the more mediate? We can *attend to* the pitch of the note to the *neglect of* tone, since this is what musicians do when they tune the strings. We cannot, however, *attend to* the tone to the *neglect of* pitch, because a tone without pitch is auditorily impossible. Accordingly, pitch is the more mediate, tone the more immediate. This makes natural sense because if we hear a physical sound, such as someone knocking on the door, we can perceive its qualitative tone quite immediately, but even the trained ear of the musician will require a moment of reflection to determine its pitch.

		blue without red	space without colour	colour without space	red without colour	
Strong Act	By discrimination	O	O	O	X	*Small Distinction*
	By precision	O	O	X	X	
Weak Act	By dissociation	O	X	X	X	*Great Distinction*

Weak Connection ⟷ *Strong Connection*
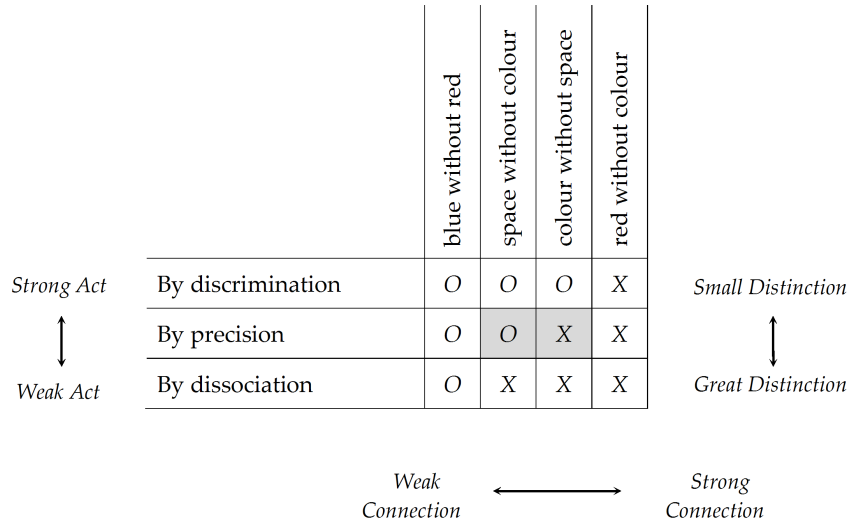
Figure 2.2: The three modes of separation with respect to the *act* of separation, *connection* between elements, and *distinction* between elements.

Since Peirce was a scientist as well as a mathematician, we can consider a somewhat Fregean example as well. consider the equation of a circle with radius r centered at the origin of the Euclidean plane. That is, we start with the equation $x^2 + y^2 = r^2$. We see the structure of the equation, the constant r, and the two variables x and y embedded in the equation. Which is more immediate, the structure of the equation or the two variables? We can *attend to*, or definitely comprehend, the variables x and y to the *neglect of* the structure of the equation, but we cannot *attend to*, or definitely comprehend, the structure of the equation to the *neglect of* the variables. Thus the structure of the equation is more immediate, the variables more mediate and abstract. This makes natural sense, too, because the variables, taken by themselves, refer to any real number, whereas when embedded in the equation their ranges are restricted and hence particularized to small subsets of the real numbers. When prescinded and liberated from the equation, therefore, they will certainly have greater, abstract generality.

It is *psychologically* imaginable, of course, that the perception of red is felt prior to the perception of space, or the pitch felt prior to tone for that matter, but that is not the point of the argument. It is the *logical* stratification of conceptions that Peirce aims at. Note also that Peirce takes the "colored space" as his starting point, not a pair of two conceptions — that of color and that of space — just put together in thought. As noted in **2.1.2.1** (p.22), the *object-complex* of colored-space must be taken as the starting point, and then whether its color can be definitely comprehend to the neglect of the space, and vice versa, is considered.

2.1.5 Further Details of Non-reciprocity

2.1.5.1 The Next Concern

As the discussion makes clear, the *non-reciprocity* of prescision is the key of the idea. Otherwise, X and Y, both being parts of an object-complex, will merely fall apart without providing further information. Thus Peirce states (W 2: 51.6-11):

> Prescision is not a reciprocal process. It is frequently the case, that, while A cannot be prescinded from B, B can be prescinded from A. This circumstance is accounted for as follows. Elementary conceptions [categories] only arise upon the occasion of experience; that is, they are produced for the first time [since they are uniting functions in experience] according to a general law, the conditions of which is the existence of certain impressions.

The nature of "general law" mentioned by Peirce in this sentence is important and will be discussed later.[7] The second half of the sentence starts to address another question: Why should non-reciprocity occur so commonly in analyzing the process of proposition formation by way of prescision? The concern Peirce brings up in this passage is that *prescision* might have a very limited scope, if abstraction is generally reciprocal, whereas he apparently wishes to make the opposite claim. This means that Peirce must explain (1) why in many cases X *cannot* be prescinded from Y, although (2) Y can nevertheless be prescinded from X.

2.1.5.2 Argument for (1)

Peirce's argument for (1) is mostly grounded in the definition of elementary conceptions (W 2: 51.11-18):

> Now if a conception does not reduce the impressions upon which it follows to unity, it is a mere arbitrary addition [without proper function] to these latter; and elementary conceptions do not arise thus arbitrarily. But if the impressions could be definitely comprehended without the conception, this latter would not reduce them to unity. Hence the impressions (or more immediate conceptions [in the hierarchy]) cannot be definitely conceived or attended to, to the neglect of an elementary conception which reduces them to unity.

A small argument by contradiction is presented in this passage. Let Y be an elementary conception, X a conception more immediate than Y, or 'impressions' in the simplest case. We want to argue that X cannot be prescinded from Y. By way of contradiction, assume that X *could* be definitely comprehended *without* the conception Y. Then Y is not reducing impressions, or the more immediate conceptions, to unity, for in such a case Y would be mere addition of a conceptual element, Y, to X. This would mean

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[7] Note that on each occasion of experience elementary conceptions appear as *instantiations* of such a law. See **8.2.1** (p.130f.), together with **6.4.3.2** (p.102f.), especially case studies (3), (7), and (8).

that Y is not an elementary conception, which contradicts our assumption. Hence X, the impressions or more immediate conceptions, *cannot* be definitely comprehended without the conception Y, that is, to the neglect of conception Y. Hence X *cannot* be prescinded from Y, which is exactly (1) in **2.1.5.1** (p.28) above.

2.1.5.3 Argument for (2)

Peirce then moves on to briefly explain why he thinks (2) in makes sense as well (W 2: 51.19-23):

> On the other hand, when such a conception has once been obtained, there is, in general, no reason why the premises which have occasioned it should not be neglected, and therefore the explaining conception may frequently be prescinded from the more immediate ones and from the impressions.

The passage is dense, but the characteristic way in which Peirce uses the words "premises" and "explaining conception" throws much light on how he considers an argument for (2), namely, the claim that the more mediate Y *can* be prescinded from the more immediate X, if Y is the elementary conception that reduces X to unity. To see why, suppose that a proposition occurs to our mind. A multitude of feelings, emotions, images, ideas, together with vague thinking, would normally precede the origination and formation of the proposition, most of which belong to subconscious processes of mind. These are collectively regarded as "premises" by Peirce, because the proposition is formed on the basis of such precedent mental processes, as if a temporary 'conclusion' surfaces into consciousness in response to the numerous underlying "premises."

On the other hand, the resulting proposition, or a conceptual construct in general, is also called an "explaining conception" by Peirce, since it replaces the enormous complexity of the "premises" with a much simpler cognitive structure. The confused impressions form the explanandum, the proposition or resulting construct the explanans. The confusedness of the impressions is reduced to unity in this way.

We are, however, for the most part unaware of the multitude of factors or "premises" that gave rise to a proposition. "It is a pleasant evening," one could utter, but there can be any number of factors that lead her to come up with such a proposition, which means that we most frequently *attend to* the proposition itself, or the explaining conception, to the *neglect of* the countless "premises."[8] More generally, therefore, Peirce holds that we can *prescind* the resulting construct, i.e. the more mediate explaining conception, from the "premises," namely, that which is reduced to unity. The *uniting* conception Y, therefore, *can* be prescinded from X, namely, that which is *united*, hence establishing claim (2) in **2.1.5.1** (p.28) above.

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[8] In the following year 1868, Peirce refers to this argument in §5 of the *New List* and writes: "just as we are able to recognize our friends by certain appearances, although we cannot possibly say what those appearances are and are quite unconscious of any process of reasoning, so in any case when the reasoning is easy and natural to us, however complex may be the premises, they sink into insignificance and oblivion proportionately to the satisfactoriness of the theory based upon them" (W 2: 199, 1868 [CP 5.223]).

2.1.5.4 A Summary Remark on Non-reciprocity

Thus what (1) and (2) jointly express is that elementary conceptions *can* be prescinded from that which are united by them, but that which are united by the elementary conceptions *cannot* be prescinded from them. The view is not far-fetched. For Peirce is simply saying that once a conceptual construct is obtained through the synthesis of cognitive phases, the resulting construct can be non-reciprocally separated from the various precedent factors. The thesis can be phrased in various terms: one can *attend to* a conclusion to the *neglect of* the premises leading to it; one can *attend to* the effect of cognition to the *neglect of* its causes; one can *attend to* conscious phenomena to the *neglect of* subconscious phenomena; and so on.

Additionally, we should bear in mind that a 'premise' need not be a proposition for Peirce, nor anything that *justifies* the proposition formed in thought. A 'premise' can be *any* element in the mental process that precedes the formation of a proposition. Such a highly generalized understanding of 'premise' and 'explaining conception' enabled Peirce to regard mental processes as constituting a flow of representations, and to develop a remarkably wide notion of logic which was hardly restricted to deductive reasoning. Every process of thought is thus an inference for Peirce.

2.2 The Unpsychological View of Logic (§6)

2.2.1 Prescision and Introspection

Having introduced the method of prescision, Peirce now writes as follows. The first sentence summarizes his considerations in sections 3, 4, and 5 of the *New List* (W 2: 51.24-51.33):

> §6. The facts now collected afford the basis for a systematic method of searching out whatever universal elementary conceptions there may be intermediate between the manifold of substance and the unity of being. It has been shown that the occasion of the introduction of a universal elementary conception is either the reduction of the manifold of substance to unity, or else the conjunction to substance of another conception. And it has further been shown that the elements conjoined cannot be supposed without the conception, whereas the conception can generally be supposed without these elements.

From the second to the last sentence, Peirce is clearly recapitulating his two arguments we saw in **2.1.5.2** (p.28) and **2.1.5.3** (p.29). That is, if a conception is introduced on an occasion, it either adds itself to what is there, or else reduces it further to unity. In addition, the reducing conception *can* be prescinded from what is there, but *not* vice versa. He then continues (W 2: 51.33-38):

> Now, empirical psychology discovers the occasion of the introduction of a conception, and we have only to ascertain what conception already lies in

the data which is united to that of substance by the first conception, but which cannot be supposed without this first conception, to have the next conception in order in passing from being to substance.

Needless to say, any theory concerned with cognition involves observation of mental phenomena. In this respect it is the work of empirical psychology to identify the occasion of the introduction of a conception prior to logical analysis. So far, not much new is said. But in closing the consideration of §6, Peirce makes the following important remark (W 2: 51.39-52.2):

> It may be noticed that, throughout this process, introspection is not resorted to. Nothing is assumed respecting the subjective elements of consciousness which cannot be securely inferred from the objective elements.

The phrase 'this process' refers to the process of prescision. The reason it is distinguished from introspection is that prescision is not grounded in the observation of what our ordinary mental experiences are like, but in a methodologically controlled operation on conceptions. There is some indication that the distinction between psychological and logical operations was not held sufficiently clear by Peirce up to 1868, since in a small note to the *New List* he states: "It may be doubted whether it was philosophical to rest this matter on empirical psychology. The question is extremely difficult" (W 2: 94, 1868).[9] Yet his later 1893 revisit to the *New List* maintains the distinction as follows, using another example of prescision (MS 403: 4):

> It may be doubted whether that is a very successful analysis of the operation [of abstraction or prescision].[10] It would be less objectionable to say that in abstraction [prescision] we *suppose* one part of a phenomenon, without any particular supposition about another part. Thus, I may *suppose* the chair on which I am sitting to have no action whatever on light, so that it is quite invisible. Then, I am said to *prescind* its rigidity etc. and *abstract from* its color and visibility.

The chair, as a matter of psychological fact, may not be completely invisible, just as certain parts of our body are normally present in our visual field without drawing particular attention. They can nevertheless be *supposed* to be invisible, which establishes a modified conceptual frame in which a thought experiment can be conducted. It would be more suitable to regard prescision as a phenomenological experiment on conceptions.

In Peirce's view, therefore, the fact that prescision involves references to cognitive features does not prevent it from being a method of logical investigation. Suppose I hear someone talking to me in a foreign language. I can attend to the voice to the

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[9] The editors of W 2 and EP 1 associate this note to §8 of the *New List* (W 2: 513, EP 1: 373). It seems, however, more natural to link this to "empirical psychology" in §6 (W 2: 51.33), given the fact that the immediately preceding 'Note 11' in Peirce's hands pertains to prescision (MS 785: 15, 1868 [W 2: 94].

[10] Observe that this sentence begins with 'It may be doubted whether' which is the same as his 1868 note just cited.

neglect of the words, but this would hardly imply that my observation of the utterance is introspective. In this regard prescision is not the same as introspection.

2.2.2   Peirce and Kant on Logic

As already noted in **1.4.3.3** (p.20), reflective observations are far more limited in Peirce's view than commonly believed. The difference between prescision and introspection mirrors this perspective. After the explanation of prescision quoted in the last section, therefore, Peirce adds that mental states are often not directly known to us (MS 403: 6, 1893):

> Some psychologists assume that that which is directly in the mind is the easiest possible thing to know. But that is a fallacy. Does the reader not know that it is possible to be angry without knowing that one is angry?

The denial of directly observed self-knowledge receives more weight in Peirce's writings shortly after the *New List*, such that he would start to propose corrections of Kant's system, which will be considered later. But the overall situation is that Peirce never thought that the *Critique of Pure Reason* was fundamentally misoriented. Rather, it required greater consistency and clarification on Peirce's view.

The important distinction between logic and empirical psychology, for example, is found in the *Critique*. But Peirce does not simply follow Kant. Thus observe how Peirce refers to Kant and the 'unpsychological view of logic' in his 1865 Harvard Lecture (W 1: 164):

> Since Kant, there has been a vast majority of the suffrages of logicians in favor of his definition [of logic] which is as follows — the science of the necessary laws of the Understanding and Reason — or what is the same thing — the science of the sheer Form of thought in general. Observe the two branches of this statement the former more psychological the latter scarcely at all so; one has two faculties and capacities; the other thoughts as *objects* with forms. This is certainly the best definition yet given. [...] But I will go a step further and say that we ought to adopt a thoroughly unpsychological view of logic.

The last sentence concurring with the "unpsychological view of logic" is important, but what matters more to us is Peirce's understanding of *unpsychologism*. If *logic* is taken to mean "the science of the necessary laws of the Understanding and Reason," as Kant hints at in the *Critique* (A57/B81), Peirce thinks it becomes a species of faculty psychology, whereas if it is taken to mean the science of "Form of thought in general," logic is "scarcely" psychological. Where is the difference? In the latter case, logic studies the laws concerning *conceptual objects* with forms, *not* human faculties or capacities themselves. It is evident that the idea of *prescision*, which starts off the analysis from a given object-complex, is consistent with this "unpsychological view of logic."

For Kant in the *Critique*, however, pure logic is *not* concerned with forms of *objects*. By this we need not exaggerate the distance between Kant and Peirce regarding the nature of logic, since Kant is of the opinion that logic *abstracts* from *objects* so that the understanding discovers its own rules, a thesis manifest in the preface to the second edition of the *Critique*.

Kant, however, makes the following assertion as well: "If more than the *cogito* were the ground of our pure rational cognition of thinking beings in general; if we also made use of observations about the play of our thoughts [das Spiel unserer Gedanken] and the natural laws of the thinking self created from them: then there would arise an empirical psychology"(A347/B405). That is, Kant stresses that if *logic* resorts to observations of the "play" of thought, which brings in more content than the pure self-cognition of the *cogito*, it is no longer *pure* logic but involves empirical psychology.

The reason Kant makes the second assertion is obvious. He does not want any empirical element blended into transcendental logic. But then his view in the *Critique* exhibits incoherency. Kant first shows how categories can be obtained through the table of judgements, where judgments are *objects* of thought for Peirce. Once the categories are obtained, however, Kant wishes to deem that from a logical point of view they never rested upon an observation *other than* what might be called a self-observation of the pure *cogito*.

Peirce thinks that the last assertion would point to a more *psychological* view of logic, since self-observation of the *cogito* can but be *introspective*, although *reflective* would be a better term for Kant. "Reflection (*reflexio*) does not have to do with objects themselves, in order to *acquire concepts directly from them* [geradezu von ihnen Begriffe zu bekommen]," Kant writes, "but is rather the sate of mind in which we first prepare ourselves to find out the subjective conditions under which we can arrive at concepts"(A260/B316, my emphasis). Note that Kant does consider abstraction from objects, while directing transcendental logic to the study of reflective consciousness itself.

Thus for Kant *logic* must discover pure categories *and* a priori rules of *faculties*. No doubt Peirce was sympathetic with Kant's view of logic in his 1865 Harvard Lectures, but of the two aspects of *logic* in the *Critique*, he considers that Kant's first thesis, namely the object-oriented thesis, should take precedence of the second faculty-oriented assertion. This is because in his view the relations of representations to the allegedly pure faculties cannot be introspectively determined. Note that Peirce's view of logic is consistent with one of the two aspects Kant's understanding of *logic* mentioned here, while their views would diverge more when logic is contrasted to empirical psychology.

2.2.3   Genetic Model and Logical Analysis

For Peirce empirical psychology assists us in identifying occasions of experience that may disclose relevant conceptual structures. Thus occasions do not justify anything, for the actual determination of the structures is left to logical analysis. This is why

Peirce is comfortable to switch between psychological issues[11] and logical topics in the *New List*.

As explained above, the aim of *prescision* is to discover categories that stand between *being* and *substance*, which turn out to be *Quality*, *Relation*, and *Represenation* (**1.2.2**, p.11). Taken together with the definition of *prescision*, the genetic hierarchy would appear like Figure 2.3. Since "substance" is one of the *conceptions* for Peirce, it is now represented as a thin layer, that is, without genetic depth (compare with the more intuitive Figure 2.1, p.23). But one step further, we must observe that the 'genetic

The Ordered Structure of Peirce's Categories.
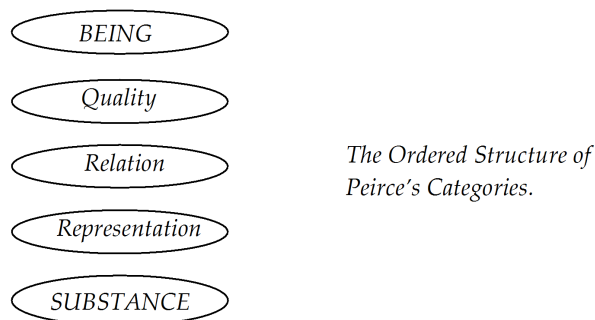
Figure 2.3: Peirce's hierarchy of categories.

depth' is still not completely absent from Figure 2, since the height of the structure, or the distance between the layers, remains. It is, accordingly, better to look at the entire structure, say from above as in Figure 3, if a strictly *logical* viewpoint is taken. In the *New List* Peirce tends to keep the 'genetic depth' somewhere in mind, since this is after all a logical analysis of *experience* with temporal breadth, but by collapsing the height of the structure less temporal or genetic succession of conceptions would be suggested. That is, the spatial metaphor is kept at a minimum.

Figure 3: Collapsing the genetic depth of the hierarchy.

The view I intend to explain is that, in contrast to the genetic model of cognition, according to which a proposition grows out of substance, a hierarchy of conceptions based solely upon the non-reciprocal prescision relation must be considered. In other words, after §5 of the *New List*, the attention has shifted from genetic transitions to logical transitions. The situation is poorly explained by Peirce, but as I have noted in **1.3.1** (p.13) and **1.4.2** (p.17), the two standpoints coexist in the *New List*, which is why we must alert ourselves to it more than once.

It is of crucial importance to bear in mind that the two viewpoints, the genetic and the logical, are *not* mutually exclusive. In the derivation of categories, which we shall consider in the next chapter, Peirce attends to the process of proposition formation

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[11] Peirce mentions *empirical psychology* twice in the *New List* (W 2: 51.33, 53.6).
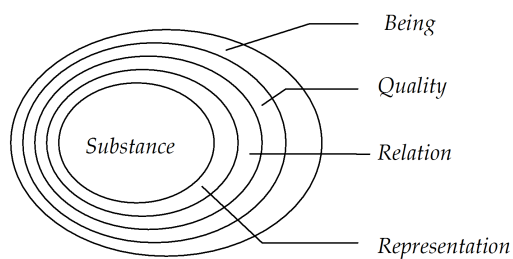
from a genetic point of view, and then appeals to prescision to determine the order of categories. This is certainly different from, for example, G. Boole's view of logic, according to which logical relations are extractions from the relations found in our actual thought. If we could directly read off logical structures from experience and justify them, the search for categories would be a psychological in nature. This is not the case for Peirce nor for Kant.

Part II

The Derivation of Categories

Chapter 3

New List §7-§8

3.1 Quality: Reference to a Ground (§7)

The categories formally derived by Peirce in the *New List* are *Quality*, *Relation*, and *Representation*. The present chapter considers the first two derivations in detail.

3.1.1 Quality in the Widest Sense

Once *prescision* is methodologically set up, Peirce proceeds to derive the conception of 'quality' in §7, which is, in terms of formal procedure, the first conception to be obtained. Starting from the formation of a proposition, Peirce states as follows (W 2: 52.2-8):

> §7. 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 the substance; and the conception of being is to unite the quality to the substance. Quality, therefore, in its widest sense, is the first conception in order in passing from being to substance.

The expression "in its widest sense" has to be underscored in order not to oversimplify Peirce's insight. Here *quality* need not be restricted to non-relational properties such as 'red,' 'hard,' and so on, which was already insinuated in §4, when Peirce remarked that the 'copula' of a proposition is "rather the verb which is copula in one of its senses" (W 2: 50.2).

If the proposition considered is "Cain kills Abel," for example, the "quality" applied to the object-complex of Cain-Abel [1] would be " ... kills ... ," namely, what is indicated by the two-place predicate that could be written Kxy in modern notation, where Kxy is read 'x kills y.' Note that the analysis of the predicate as an unsaturated phrase

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[1] Peirce holds that in such a case Cain and Abel can be seen as *partial objects* forming a "Complexus" (CP 8.177n4, undated). This also explains why for Peirce *killing* and *being killed*, while involving two discernible relations, would be regarded as the same concept, for the two predicates designate the identical property of the same object-complex (cf. CP 1.294, c.1905).

like this had already appeared in §4, where Peirce considered the predicate "... is a tailed-man" (W 2: 50.14) with one unsaturated term, a sophisticated perspective for a work of 1867.[2]

This in turn means that the substance to which a *predicate* can be applied is potentially or structurally plural, say an ordered pair $\langle O_1, O_2, \ldots, O_n \rangle$, of which in the present example $\langle$Cain, Abel$\rangle$ would be a case with $n = 2$. As long as the 'copula' is taken widely as the verb of the proposition, it goes without saying that Quality ought to be taken in the wide sense, too. "The objects," Peirce writes, "indicated by the subject (which are always potentially a plurality – at least, of phases or appearances) are therefore stated by the proposition to be related to one another on the ground of the character indicated by the predicate"(W 2: 57.32-58.3).[3]

3.1.2 The Subject-Predicate Asymmetry

The second paragraph of §7 restates Peirce's rejection of *introspection*, which, given his argument of §6, should not come as a surprise. Peirce writes: "Quality seems at first sight to be given in the impression. Such results of introspection are untrustworthy"(W 2: 52.9-10). The more important stage of analysis concerns the asymmetrical distinction between the subject and predicate of a proposition (W 2: 10-15):

> A proposition asserts the applicability of a mediate conception to a more immediate one. Since this is *asserted*, the more mediate conception is clearly regarded independently of this circumstance, for otherwise the two conceptions would not be distinguished, but one [i.e. the more immediate conception] would be thought through the other [the more mediate conception], without this latter being an [separately attended] object of thought, at all.

The argument, we may notice, mirrors the non-reciprocity of elementary conceptions. If we say, for instance, "This stove is black," we recognize that "This stove" is the subject, "is black" the predicate, and that "black" is *asserted of* the stove. As Kant also observes in the *Critique* (A94/B129), an asymmetry of the subject and predicate emerges in a proposition. What Peirce says here is that if *substance*, or *it*, were not stratified into subject and predicate, there would be a mere cluster of conceptions which are not functionally distinguished, such that no proposition would be formed. The predicate would remain buried in the confused substance without being saliently attended to in thought. Thus Peirce contends (W 2: 52.15-20):

> The mediate conception, then, in order to be *asserted* to be applicable to the other, must first be considered without regard to this circumstance, and taken immediately. But, taken immediately, it transcends what is given (the

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[2] Note that the example of a tailed-man is seen as a one-place predicate by Peirce, not as a compound matrix such as $Tx \wedge Mx$, where Tx and Mx are read 'x is tailed' and 'x is a man,' respectively (compare with W 1: 288, 1865).

[3] Peirce, however, later remarks that in the *New List* he failed to consider n-place predicates *in general*, that is, with $n > 3$. For more details, see **7.4.2** (p.121f.).

more immediate conception), and its applicability to the latter is hypothetical. Take, for example, the proposition, "This stove is black." Here the conception of this stove is the more immediate, that of black the more mediate, which latter, to be predicated of the former, must be discriminated from it and considered *in itself*, not as applied to an object, but simply as embodying a quality, *blackness*.

It can be perceived that the first part of Peirce's explanation indicates the *prescision* of the predicate from the unity of substance: That which is *prescinded*, the predicate that expresses a quality, is attended to immediately. The word "transcends" does not mean much more than 'attended to as a conception higher in the hierarchy of conceptions,' and "given" means "the more immediate conception," as Peirce himself paraphrases.

The second part of the passage turns to the separated predicate or quality itself together with its application to the subject. The emergence of asymmetry contributes to the transformation of substance into the subject of the proposition described by the predicate. Thus Peirce is in principle following up on the process of *unification*, *differentiation*, and *reunification* discussed earlier. What is slightly different in §7 is that Peirce now directs more attention to "black" considered *in itself*.

3.1.3   Quality and Ground

3.1.3.1   Ground as Pure Abstraction

In the same paragraph as above, Peirce explains that the "blackness" of the stove is "a pure species or abstraction" (W 2: 52.25-26). The use of the word "abstraction" is misleading here in that Peirce previously defined the word *abstraction* as equivalent to *prescision*, whereas he now uses 'abstraction' in another sense. In fact the *blackness* considered in itself is obtained by an operation Peirce would later call *hypostatic abstraction*, which must be distinguished from *prescision*.[4]

The terminology *hypostatic abstraction* is not present in the *New List*, but the idea is. Its operation is to convert a non-substantive term into a noun, such as 'black' being converted into 'blackness.' More generally, a predicated quality can itself be rendered an object of thought, or *ens rationis*, by hypostatic abstraction, which is why earlier in §3 Peirce used the expression "the metaphysical parts"(W 2: 49.22) to designate qualities that are attributed to substance.

The reason such a pure abstraction is permitted into the analysis is important. Peirce briefly justifies his claim as follows, and proposes to call such a pure species of abstracted quality a "ground"(W 2: 52.35-53.3):

> Moreover, the conception of a pure abstraction is indispensable, because we cannot comprehend an agreement of two things, except as an agreement in some *respect*, and this respect is such a pure abstraction as blackness.

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[4] For *hypostatic abstraction* (and its relation to *prescision*), useful information can be found in: CP 4.235 (1902); EP 2: 270n (1903); CP 4.346 (1905); EP 2: 351n [CP 5.447n1] (1905); EP 2: 355 [CP 5.455] (1905); CP 5.531 (c.1905); and EP 2: 394 [CP 5.448n1, see p.302] (1906).

Such a pure abstraction, reference to which constitutes a quality or general attribute, may be termed a *ground*.

It has to be borne in mind that the starting point of the analysis is the *proposition*, in which we already have a juncture of the subject and predicate. Accordingly, the situation Peirce considers is that the consciousness of the predicate of the proposition is in synthesis with the consciousness of the substance, while the former, the predicate, attributes a quality *to* the latter.

But as far as a proposition like 'This stove is black' is concerned, there should be, so argues Peirce, a point of agreement between the substance and what the predicate of the proposition expresses, the *respect* in which the predicate is considered as applicable to it. The phrase "agreement in some *respect*" is employed by Peirce so as to suggest a weak but general account of predication. His view is that minimally something *like* what is thought of in the predicate of the proposition has to be thought of about the substance so that the quality the predicate expresses is *asserted of* the substance. The account is on purpose made weak, because the substance need not actually share an element with the predicate.

3.1.3.2   Some Contexts for the Notion of *Ground*

To give a little more context to the notion of *ground*, we may note that about a year before the *New List* Peirce meant "character" by "ground," and "reference to a ground" was then equated with "possession of a character"(W 1: 352). The *possession* of a character is different from the bare character itself. Hence in the *New List*, *quality* and *ground* are distinguished. The distinction bears significance, since *quality* is then functionally active in experience, which is why it is a *category*, while the ground is not. The ground is merely an abstract *respect* in which a predicate is asserted of substance, whereas quality always works as reference to some such ground — otherwise the quality would be "entirely indeterminate"(W 2: 50.19) without any "character" of its own (*ibid.*) — and is, therefore, identified with 'reference to a ground.'

The distinction between *quality* and *ground*, however, appears at times equivocated in Peirce's writings. For example, we see Peirce remarking that the "*ground* itself is not given in the impressions of sense, but is the result of generalization"(MS 922: 14, c.1862), on the one hand, and also writing, on the other, "Reference to a ground, i.e. possession of a character [hence *quality* in the *New List*] is not a conception given in the impressions of sense but is the result of generalization"(W 1: 352). Such remarks can generate the impression that the distinction between *quality* and *ground* is not very sharp.[5]

Nevertheless, quality and ground are different: The former is a category, the latter not, meaning that *quality* is a *functional* notion, while the *ground* is not. In this

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[5] Michael (1980: 196) writes: "it should be noted that in his use of 'quality', Peirce vacillates [...] it is not difficult to find cases in which an abstraction such as blackness is called a quality. Also it should be borne in mind that what Peirce calls a ground would more usually be called a quality. [...] there is considerable potential for confusion."

connection, it is of some help to consult with a much later letter draft which signals the subtlety of the notion (MS L 387b: 328, 329,[6] 1908):

> Well, I could not then [in the *New List*] see that my "ground," "correlate," and "interpretant" were not concepts but merely *elements* of concepts [...]. Only instead of being elements of matter, they are elements of thought.

> What I then called a "ground," I now call an *Idea*, that is to say, a pure predicate, which cannot stand pure in thought but must be referred to some subject, however indefinite. In itself it is mere capacity for making such an attribution.

There is, for sure, a sense of concession in his words here, but observe that what he says is not in conflict with the notion of *ground* in 1867, since on this much later account the *ground* is essentially an *element* of quality, hence suggesting that it can be abstracted from quality. Combined with Peirce's remark of 1866, therefore, it is safe to say that on Peirce's view *attribution* of a quality to substance requires such a notion of *ground*. But why? To see this, considerations can be developed from two complementary viewpoints again: the *genetic* viewpoint and the *logical* viewpoint. In the next two sections, therefore, I will explain from these two angles why the notion of *ground* is an indispensable device, as Peirce claims in the *New List*.

3.1.3.3 The Need for *Ground* (1): Genetic Viewpoint

(i) The Nature of the Phenomenon

A genetic analysis of proposition formation offers a more intuitive approach to the notion of *ground*. The cognitive phenomenon to be focused on is this. Suppose we notice an object on the table and in a fraction of a second recognize that it is a red apple. Prior to being recognized *as* a red apple, the object was merely a momentary *it* for Peirce, a *substance* without any definite character. After the judgment is furnished, however, the important difference between the definitely recognized *red apple* and the mere *it* does not consist only in the perceived *color* of the apple but also in the spatial location of the color. For the *redness* of the apple appears attributed to the object *over there*, no longer *here* in our minds.

The consideration is far more important than it might seem. Whitehead, for instance, includes the *Category of Transmutation* in his categorial scheme in order to explain why the datum of a derivative conceptual feeling, such as *redness* in a proposition, can be transmuted into a characteristic of the *nexus* involving the actual entities that were physically prehended prior to the genesis of that conceptual feeling. That is, the point is to account for the transmutation of the redness felt *over here* into a characteristic of the spatially expanded environment *over there*. Or we may note how

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[6] MS L 387b: 328 appears to continue to 387b: 335 instead of 387b: 329. That is, the two leaves, 328 and 329, are not consecutive, which is indicated by the break within my quotation.

Whitehead identifies the same issue in Bergson: "the course of thought can be indicated by adopting Bergson's admirable phraseology, sense-reception is 'unspatialzed,' and sense-perception is 'spatialized'." [7]

In more familiar terms, we could put it this way. Suppose our mind processes information in our mind, the result of which is the recognition of the red apple on the table. If the processing occurs in our mind *here*, the question is, how is it that the *redness* is now *over there* with the apple? Needless to say, we constantly experience such effects, since every time we blink, for example, the world loses much of its *perceived* extension, by which *qualities* are felt more *inward* to us, while the objects are pushed back into the spatial environment once our eyes reopen. The crucial point is that the *characters*, which we seem to have been processing in our minds *here*, fly back into the world, so to speak, as attributes *of* objects.

(ii) Peirce's Manuscript "Appendix No.2" (c.1867)

In an interesting and ambitious draft written around or before 1867, Peirce comes very close to identifying the phenomenon just described. The draft is entitled "Appendix No.2," which was most certainly prepared as a an appendix to a projected book which was never completed.[8] Peirce's analysis in this draft includes helpful clues to the current matter. Here is a passage that discusses visual perception with regard to space (MS 740: 13, 1867 [650-651]):

> Were the retina of the eye to receive extension as an impression, it should be spread out like a piece of paper. Instead of that, it consists of a countless multitude of nerve needles, each widely separated from the others, and all with their points to the light. The feeling of excitation[9] of any one of these points is probably simple, and therefore contains no notion of extension. But if no one of these impressions involve space, neither does their sum.

Thus Peirce thinks that at the initial stage of cognition objects and their attributes perceived by the eye may not appear as extended in space either in themselves or toward the viewer. Then he continues (MS 740: 14, c.1867 [651]):

> But in fact the eye trembles and gropes over the object, and thus we have successive impressions which are intimately but most intricately related. [...] The complexity of this relation makes it incomprehensible when taken by itself, but we have only to suppose the object to be extended and it is made intelligible at once [as a propositional structure arises]. Accordingly, the mind does suppose the object extended, and so, as Kant says, by

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[7] Whitehead, *Process and Reality*, p.112, 1978.

[8] The text is not published in the W edition but can be found in the *Transactions of the Charles S. Peirce Society*, vol.29, no.4, pp.645-669, 1993. For the important features of the manuscript, including the date of the text, see the editor's report on pp.638-640. My citation is from MS 740, followed by the corresponding page number in the *Transactions* in square brackets.

[9] In the original manuscript Peirce misspells this word as "ecitation." I thank David Agler for bringing this to my attention, which I initially overlooked.

> differentiating the time in the flow of the phenomena we get the image of
> space.

In fairness I note that after a few pages from this remark, Peirce contends that Kant's view of space and time as forms of intuition is unclear (MS 740: 18-19 [653])). For if they are *forms*, so argues Peirce, they are determinations, and in principle not different from conceptions. But aside from this issue, the point for Peirce is that objects do become intelligible in space with characters integrated into them as *their* attributes. It is as if the outcome of internal processing in our minds bursts out into extended objects with attributes *over there* as the propositional structure forms itself. We are seldom aware of the dynamic nature of attribution, since definite recognition occurs as the proposition is formed, which makes us blind to what occurs even earlier.

Returning to the notion of *ground*, therefore, the question boils down to the mapping between what we are conscious of in the predicate of the proposition and the attribute appearing as a quality *of* the recognized object, or the definitely comprehended substance. The *respect* in which, for example, the *redness* of the apple over there and the *redness* we are conscious of through the predicate 'red' over here are *ipso facto* mapped to each other. The like character mirrored in both ends of the mapping is the *ground*.

(iii) Sellars' Question

Compare this with a question Sellars raises about Peirce: "Did expanses of red present themselves to Peirce as firstness?"[10] The question is interesting because it precisely touches upon how *redness* can be a property of an actual object of perception. Sellars continues: "An expanse of red could be something *actual* and be *either* a sense datum in visual space, a manner of sensing, or a spatial constituent of a physical object."[11] As we may notice, however, such a split of 'either or' is idle for Peirce and for Kant,[12] since the point of the analysis consists in showing how it is both a felt red *and* an expanse of red of an object *at once*. Peirce's reply to Sellars' question is that expanses of red are no longer firstness but simply assumes a propositional structure.[13]

The need for the notion of *ground* is then quite clear. For if there is a mapping between two parts of a cognitively developed structure, there has to be a *respect* in which such a mapping is intelligible. But since Peirce does not explicitly discuss space and time in the *New List*, while *experience* always has spatiotemporal breadth, it is just harder to see why *ground* is an indispensable notion in the analysis of proposition formation. But when for example the redness, on the one hand, and the object to which the redness is attributed, on the other, are held wide apart as in our explication, the role of *ground* and its indispensability become more visible.

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[10] Sellars, *In the Space of Reasons*, p.244, 2007.

[11] Sellars, *In the Space of Reasons*, p.245, 2007.

[12] This is where Kant's deduction of categories in the A edition of the *Critique* comes to a deep point. See **4.3.2**, footnote 1 (p.66).

[13] Note in particular that Peirce has already argued in the *New List* that space can be prescinded from color but not vice versa (W 2: 51.1-4).

3.1.3.4 The Need for *Ground* (2): Logical Viewpoint

From a logical point of view, on the other hand, the need for *ground* can be explained by considering propositions with full generality. To see this, suppose a child finds an old dusty stove in the garage and utters 'the stove is sad' instead of 'the stove is black.' Whether the utterance was a metaphor or not is irrelevant, since it is the propositional structure, not the particular content of thought, that is under consideration. The central observation offered by Peirce is that *in general* there is no need of a factual correspondence between what is meant by such a predicate as 'sad' and the substance of which the 'sadness' is asserted. The only question is, how is it that such a proposition can be formed and understood right away?

At this point, it is worth recalling that Peirce considers such propositions as "A griffin *is* a winged quadruped"(W 2: 50.4) and "There is a beautiful ellipse"(W 2: 50.17) in the *New List*, that is, not just propositions that are of the nature of familiar observational reports. Thus if we encounter the proposition "The griffin roared" in a children's book, which proposition is under normal circumstances perfectly intelligible without evoking any correspondence in fact, the *respect* in which it was understood that a *griffin* was something that *roared* is what Peirce calls the "ground." It is thus the abstract conceptual element involved in any determinate predicate according to which the substance is interpreted as the corresponding subject.

In order to account for predication *in most general terms*, therefore, Peirce thinks that a "pure abstraction is indispensable"(W 2: 52.36). For the intelligibility of such a propositions as 'The griffin roared,' 'Hamlet drew his sword," or '$\sqrt{3}i$ is a square root of negative 3,' if you please, surely requires the grasp of certain abstracted qualities.[14] In this sense, we may say that the necessity for a *ground* stands out more clearly if an arbitrary proposition is considered. Peirce's own example, "This stove is black," could be a little unfortunate in this regard, since the need for a *ground*, which is a *pure abstraction*, seems less obvious. But the notion of *ground* is logically indispensable if arbitrary propositions are considered.

3.1.4 Hypothetical Application of the Predicate

From this, it readily follows that the application of a predicate to substance is always *hypothetical*. For predication by way of a *ground* is an attempt to characterize a substance, where the ground only requires that what is thought of in the predicate is *like* what is thought of in the subject of a proposition. Thus Peirce also writes in his later revisit to the *New List* : "We do not think objects are in themselves *red* or *blue*" (MS 403: 10, 1893). Of course a substance referred to as a stove need not be black *in itself*. A dark shade on the stove, for example, may well suffice to induce the belief that the stove is black in so far as it appears *like* black.

The next move Peirce makes in §7 is very fast (W 2: 52.25-29):

> Now this *blackness* is a pure species or abstraction, and its application to

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[14] Recall that for Peirce *substance* is a *conception* and as such can be fictional.

> *this stove* is entirely hypothetical. The same thing is meant by "the stove is black," as by "there is blackness in the stove." *Embodying blackness* is the equivalent of black.

An attentive reading is called for in the second sentence. If we recall that the formation of proposition involves spatiotemporal expansion on Peirce's account, such that the internally felt qualities are dynamically integrated into objects appearing external to us, the recognition that the stove is black is contentwise the same as the stove embodying blackness. For the qualities groped for in the cognitive process suddenly appear to us as having fallen into the constitution of objects, to put it figuratively.

Such a view was, we may note, in essence rehearsed in the fall of 1866 when Peirce wrote: "By a *ground*, you remember, I meant the pure form or abstraction which is the original of the thing and of which the concrete thing is only the incarnation. Reference to such a *ground* or *respect* of likeness is implied in every attribution"(W 1: 474, 1866). The word "incarnation" could be a little controversial or perhaps too strong, but all the more better mirrors the idea that when *attribution* occurs, which is due to a constructive act of the mind that we are for the most part scarcely aware of, a quality emerges as always having been integrated into the things we recognize. Consider yet another remark from a close period (W 1: 307, 1865; all italics mine):

> *Qualities* are fictions; for though it is true that roses are red, yet redness is nothing, but a fiction framed for the purpose of philosophizing; yet harmless so long as we remember that the scholastic realism it implies is false. When the element of quality is eliminated from *things* by abstraction; we have noumenal matter. When the connection with things [reference to things] is eliminated from qualities, we have Pure Forms [grounds]. [...] The *embodiment* of a pure form in noumenal matter *makes* a thing *with* qualities.

To this Peirce adds, importantly, that "noumenal matter" is obtained by prescision and hence a "fiction," although *ens rationis* would be less confusing than "fiction" (*ibid.*). Further, we are encouraged to observe: "The relevancy of the analysis consists in this, that if logic deals with the form of thought, it can be studied just as well in external as in internal representations"(W 1: 308, 1866). In other words, whether represented objects are internal or external to the mind makes no vital difference to the analysis, which is not so strange an assertion in that proposition formation in either case is essentially the same. It is then also natural for Peirce to think that the ground "*may* lie in the subject, in the object, or between them"(W 1: 330, 1865; my emphasis).

3.1.5 'Embodying Blackness' and 'Black'

The forgoing discussion indicates that for Peirce 'the stove is black' and 'there is blackness in the stove' indeed mean the same thing. A cautionary note is in order, however, with regard to the meaning of "in" in the second proposition. The *blackness* is not objectively *in* the stove, by which I mean *independently of predication*, for it would

immediately contradict Peirce's view that the application of a predicate is merely *hypothetical* if that were the case. Nevertheless it is as if the *blackness* is *in* the stove, for it is integrated into the conception of the stove through the constructive act of the mind.

Regarding the equivalence of *embodying blackness* and *black*, Peirce presents an argument which he regards as a proof of the thesis that *embodying blackness* is the equivalent of *black*.[15] The argument is more logical than genetic (W 2: 52.29-35):

> The proof is this. These conceptions [*embodying blackness* and *black*] are applied indifferently to precisely the same facts. If, therefore, they were different, the one which was first applied would fulfil every function of the other; so that one of them would be superfluous. Now a superfluous conception is an arbitrary fiction, whereas elementary conceptions arise only upon the requirement of experience; so that a superfluous elementary conception is impossible.

As before, we should not lose sight of the fact that Peirce is considering the process of proposition formation, and *therefore*, Peirce regards *embodying blackness* and *black* as pointing to the same facts, although the former, *embodying blackness*, is more informative than the latter, since it captures the dynamic movement of proposition formation. Thus Peirce writes that "*embodying blackness* defines *black*"(W 1: 521, 1866). The crucial point is that "the stove is black" should be analyzed as the stove *embodying blackness*. It is also not hard to see that the argument is in principle the same as the one we saw earlier,[16] based upon the definition of *elementary conception* and arguing by contradiction.

3.1.6 Functionalism and Pragmatism in the *New List*

This in turn leads to the view that the two "conceptions," *embodying blackness* and *black*, play exactly the same explanatory role in proposition formation. It is, therefore, a reinforcement of what I earlier on alluded to as a form of *functionalism* about conceptions: what a conception is or means must be defined in terms of its functional contribution to thought. The actual argument stated here by Peirce is apparently quick and sketchy, but already witnesses the genesis of *pragmatism*.

Buzzelli (1974) and De Tienne (1996) are keen enough to observe a link between this small argument and Peirce's pragmatism of the late 1870's. In my view, however, what is expressed here is more of a Kantian functionalism, which includes the following two basic assumptions: (1) Each propositional structure in a given occasion of experience

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[15] In a small footnote, which refers to the work of Peter Abelard (1079-1142), Peirce suggests that his view coincides with that of Abelard (W 2: 52.29; cf. W 1: 521, 1866). The historic link can be left aside, however, since what Peirce calls his own "proof" should be given due weight. Michael (1980: 195-196) considers a possible link between Peirce and Abelard by bringing in Ockham's doctrine of forms. But note that Peirce is not blindly accepting the scholastic tradition, as evidenced in the second block passage cited in the previous section.

[16] See **2.1.5.2**, p.28.

arises exactly in one way, because it cannot have had two distinct genetic histories at the same time; (2) conceptions, or categories, are forms functionally exemplified in the actual formation process, which have no existence outside this process. Note that (1) and (2) are hardly in disharmony with the spirit of Kant's *Critique of Pure Reason*, although the claims are much sharpened than in Kant's hand.

In his 1865 Harvard Lecture on Kant, therefore, Peirce tries to read in the *Critique* the view that an *a priori* cognition is "one which any experience contains reason for and therefore which no experience determines [from outside] but which contains elements such as the mind introduces in working up the materials of sense, or rather as they are not new materials, they are the working up"(W 1: 247, 1865). The earlier part of the passage is not altogether clear, but if conceptions are the *working up* itself, or in short the *effects* they bring about, the perspective already strongly points to the basic idea of pragmatism.

Seen in this light, we would notice that De Tienne in fact goes a little too far when he calls Peirce's proof above a "pragmatic proof,"[17] because for Peirce pragmatism was a doctrine to be *proven*, or more simply, a consequence of the theory developed in the *New List* and elsewhere, not the *basis* of his theory. What is meant by this is that the analysis of proposition formation up to this point can be seen as constituting a basis for, if not an adequate proof of, pragmatism.

3.1.7 Passing from Being to Quality

In order to keep the discussion simple, I have tacitly assumed up to this point that an n-place predicate has the general structure $Px_1x_2\ldots x_n$ for Peirce. This is true on a large scale, but of course not all sentences are atomic sentences. Peirce, however, states as follows even years after developing propositional and predicate logic: "A proposition has properly but a single predicate; but this is frequently compound"(MS 787: 27, c.1899). Hence for a compound phrase, such as "... is a man who killed himself," it is much closer to Peirce's understanding to identify a single compound predicate, say $P(x, x, x)$, instead of using conjunction, for instance, to form a non-atomic compound like $Mx \wedge Kxx$ in contemporary style. This interpretation is necessary so long as *being* remains the last *uniter* upon the formation of a proposition regardless of the complexity of the proposition.[18]

This having observed, the passing from *being* as the first logical category to *Quality* as the second is a relatively simple matter. For it just says that if the proposition we start with has the form $P(O_1, O_2, \ldots, O_n)$, then the conception of *quality* must have formatted the thought process such that it has been shaped into the more structured unity consisting of the predicative pattern $P(x_1, x_2, \ldots, x_n)$ and the cluster of objects $\langle O_1, O_2, \ldots, O_n \rangle$, a claim clearly tied up with the subject-predicate asymmetry

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[17] De Tienne, *L'Analytique de la Représentation chez Peirce: La Genèse de la Théorie des Catégories*, p. 283, 1996.

[18] A parallel complication is that the *ground* has to be regarded as a *compound ground*, accordingly, although I will not pursue this further in the interest of space.

of propositions.[19] The *ground* is then an abstract element with *respect* to which the two substructures, the predicative pattern and the object-complex, are put together, namely, the "pure abstraction, reference to which constitutes a *quality* or general attribute"(W 2: 53.1-3).

Although it may appear at this stage nearly self-evident that *being* is the more mediate category than *quality*, since *being* is the last act that completes the formation of a proposition from a *genetic* point of view, Peirce does not forget that the *logical* order of categories is yet to be determined by *prescision*. Hence he writes at the end of §7: "Reference to a ground [Quality] cannot be prescinded from being, but being can be prescinded from it"(W 2: 53.4-5). This means that *being* must be judged to be the more mediate conception, *quality* the more immediate conception, hence forming the first fragment of the hierarchy of categories.

3.1.8 Challenging Kantian Assumptions

This final step of *prescision* is not unimportant because it signals where precisely Peirce is starting to differ from Kant. In this regard, it is helpful to take a quick glance at the following remark on Kant (W 1: 351, 1866):

> Kant first formed a table of the various logical division of judgments, and then deduced his categories directly from these [judgements]. [...] The correspondences between the functions of judgment and the categories are obvious and certain. So far the method is perfect. Its defect is that it affords no warrant for the correctness of the preliminary table, and does not display the direct reference to the unity of consistency [in apperception] which alone gives validity to the categories.

A few relevant points are suggested in these remarks. First, the idea of the correspondence between *functions* of judgment and categories is perfectly acceptable, for it is nothing but a functionalist interpretation of the categories. But Peirce also detects in Kant a few unwarranted assumptions, namely: (1) that the table of judgment he started with is correct; (2) that the forms of understanding are faithfully crystalized in the table; and (3) that the forms are so infallibly manifest in the table such that no method is required to directly derive the categories from the table. The passage above thus shows that Peirce does not accept any of these assumptions. It is, in particular, clear that the method of *prescision* responds to the problems raised by (2) and (3). It is from the analysis of proposition formation, not from the table, that categories must be obtained.

Hence after several months in the same year, Peirce comes to stress *prescision* as the method of derivation: "It is *prescision* with which we have to deal in our present investigation"(W 1: 473, 1866).[20] In subsequent years, Peirce also shows through his

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[19] See **3.1.2** (p.38f.).

[20] Note that in contrast the order of categories appears still unsettled in 1865 when the "prescindible" is regarded as coextensive with the "Ground"(W 1: 327-328).

study of formal logic that assumption (1) is untenable. We have also touched upon Peirce's contention that Kant's idea of space and time as *forms* of intuition is unclear. But for the moment what needs to be stressed is that the *New List* is far more *method-sensitive* than Kant's *Critique of Pure Reason*, which is made sufficiently clear at the end of §7.

3.2 Relation: Reference to a Correlate (§8)

3.2.1 Overview: Correlate in the *New List*

3.2.1.1 The Basic Idea

The conception one step down the hierarchy of categories toward *substance* is the conception of *Relation*, which is formulated by Peirce as "Reference to a Correlate"(W 2: 54.38).[21] The purpose of §8, which contains fewer than a hundred words, is to derive this conception. Peirce thought that the derivation of the conception of *Relation* is the least complicated. "This conception is," Peirce wrote in one of his drafts of the *New List*, "so easy to seize that no elucidation of it is needed" (W 1: 522, 1866). In some sense this is true. For if a *quality* is to be integrated into the constitution of an object, we certainly need the conception of the *thing* into which that quality is integrated. This *thing*, other than the quality itself, is what is meant by *correlate* in the *New List*. But there are a number of subtle issues concerning this notion.

3.2.1.2 Kantian Analogue

The *New List* analyzes the ordered structure of the successive phases of cognition that results in the formation of a proposition. In this context, *correlate* refers to each phase of an object that appears in the stream of that formation. Although Peirce does not use the term *correlate* in exactly the same sense as Kant does, a helpful analogue of the idea can be found in Kant's *Critique of Pure Reason*. Kant writes (A198-199/B244):

> The situation, then, is this: there is an order in our representations in which the present [stage of cognition], so far as it has come to be, refers us to some preceding state [preceding cognition] as a correlate [Korrelatum] of the event which is given; and though this correlate is, indeed indeterminate, it none the less stands in a determining relation to the [present] event as its consequence, connecting the event in necessary relation with itself in the time-series.

Kant is saying many things here, but we shall confine our attention to just three points. First, a correlate is at the preceding stage of cognition if seen from the perspective of the present. Second, determination increases as we move along the time-series. Third, the succession is not arbitrary: It involves a logical structure, or a determining relation.

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[21] In §8 Peirce fails to state that by *Reference to a Correlate* he means *Relation*, but this is obvious from the table of categories in §13 and also from the discussion leading up to this conclusion.

These lead to the view that thought becomes structured as well as determinate when a *judgment* is formed on Kant's view, or when a *proposition* is formed on Peirce's view.

Every stage of thought thus has a preceding stage. The phase of an object appearing at each stage is called a *correlate* by Peirce in this context. Therefore, a correlate, if you please, refers to each of the many transitional snap-shots of an object that will eventually be described in the proposition as having such and such a quality. As briefly noted earlier, this is why Peirce warns us in the *New List* that the objects indicated by the subject term of a proposition is to be seen as always potentially plural (W 2: 57.33-58.3):

> The objects indicated by the subject (which are always potentially a plurality,— at least, of phases or appearances) are therefore stated by the proposition to be related to one another on the ground of the character indicated by the predicate.

The phrase "related to one another on the ground of ..." indicates the logical structure which would correspond to the "determining relation" mentioned by Kant above. In this manner *phases* and *appearances* of objects are all *correlates* for Peirce.

3.2.1.3   Peirce's Later Remark (1908)

It is helpful to consult with Peirce's later remark again, in which he explains what he meant by *correlate* in the *New List* (MS L 387b: 329, 1908):

> What I call there [in the *New List*] a "correlate" is an ordinary experiential correlate, reference to which is forced upon the mind. We may call it an "occurrence," meaning a *thing* or *fact*, single and definite. Since such an element of thought is due to an experience and that experience is an event, I like the word "occurrence" as reminding the thinker that a *thing* never is thoroughly singular, but the only object that is so is an instantaneous event. If you say there is no such thing as an instantaneous event, I reply, I suppose not; but these categories [ground, correlate, and interpretant] are not concepts but only the three kinds of elementary stuff out of which concepts are built. "Stuff" is not the word either; for they are *forms* of thought, not *matter* of thought.

Note that a *fact* or *thing* can involve plurality of things, each of which in turn having multiple phases, for events normally involve a number of 'objects' in the ordinary sense. Nevertheless it must be added that each snap-shot of an object has to appear in some unity, which is why Peirce says that the *occurrence* is singular and definite. That is, any cognition prior to the formation of a proposition is indefinite but each phase solidifies in itself in the time-series and contributes to the determination of cognition. No event is strictly instantaneous, Peirce concedes, but for the purpose of logical analysis a *correlate* can be likened to such a thin slice of an event, which is why I have called it a 'snap-shot' in my explanation.

3.2.2 Peirce's Text of §8

I now return to the text of §8. In entirety it reads as follows (W 2: 53.6-15):

> §8. Empirical psychology has established the fact that we can know a quality only by means of its contrast with or similarity to another [quality]. By contrast and agreement a thing is referred to a correlate, if this term may be used in a wider sense than usual. The occasion of the introduction of the conception of reference to a ground [Quality] is the reference to a correlate [Relation], and this is, therefore, the next conception in order.
>
> Reference to a correlate [Relation] cannot be prescinded from reference to a ground [Quality]; but reference to a ground [Quality] may be prescinded from reference to a correlate [Relation].

The intention of the second paragraph is clear enough: from the non-reciprocity of *prescision*, the conception of *Quality* is judged to be more mediate than that of *Relation*, or on our genetic model, *Relation* holds the manifold and the predicative pattern together more immediately than the conception of *Quality* does. Hence if interpreted genetically, the category of *Relation* could be seen as applied to the object-complex prior to the application of *Quality*, although from a logical point of view, it is better not to take 'prior' in the temporal sense.

The last sentence of the first paragraph of §8, as one can see, almost identifies the occasion of the introduction of *Quality* with that of the introduction of *Relation*, which suggests that they can be seen as occurring together, which will practically make the gap between the genetic and logical model very small. This is understandable since Peirce's analysis focuses on a phenomenon of thought that occurs in an extremely short time interval.[22] It also makes sense to say that the occasion of the introduction of these conceptions will be discovered by empirical psychology. For what happens when is a matter of empirical observation.

3.2.3 Further Details of Correlate

3.2.3.1 Similarity and Agreement

In §8 of the text, we may note that the word "similarity" (W 2: 53.7) is used by Peirce interchangeably with "agreement" (W 2: 53.8), since Peirce rephrases "contrast with or similarity to" simply as "contrast and agreement" (the "or" needs to be taken in the *inclusive* sense). A subtle difference between the words "similarity" and "agreement," however, might be pointed out in the form of objection to the effect that "similarity" and "agreement" are *not* interchangeable terms. For "similarity" could be taken as more suggestive of the similarity among pure qualities, namely *without* reference to an object, on the one hand, while "agreement," which Peirce already employed in his

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[22] Peirce for example writes: "it requires more than a hundredth of a second actually to have any thought" (CP 4.514, 1903).

explain of *ground*, is more suggestive of the "agreement" of a quality with an aspect of the object to which that quality is attributed, on the other.

The issue is by no means negligible, since by *correlate* Peirce wishes to talk about a phase of an *object* to which a quality is attributed.[23] Thus one can claim that the term "similarity" in §8 at least obscures the presence of such an *object*. I do not deny that Peirce is somewhat inattentive to his word-choice, but still consider that by "similarity" and "agreement" Peirce has the same thing in mind. For it is at this point that we should be heedful of the notion of *ground* as pure abstraction. To begin with, the sentence in question talks about the similarity of *qualities*, which implies that some reference to a *ground* is involved. But for Peirce a ground is always an *abstraction-from*, or a ground is nonsensical without the substance from which it is initially an abstraction. Hence even if Peirce were discussing similarities among pure qualities, the context of the *New List* demands that an object is referred to.

3.2.3.2   The Subtlety of Correlate

A much subtler issue, however, lurks behind Peirce's consideration. Once again, the second sentence from §8 reads: "By contrast and agreement a thing is referred to a correlate, if this term [correlate] may be used in a wider sense than usual." But what does Peirce mean by saying that the term *correlate* is used by him *in a wider sense than usual*?

Ransdell (1966: 86), for instance, interpreted Peirce's *correlate* in §8 of the *New List* as another *quality*, *form*, or *essence*. If this is correct, the *correlate* may not only be a phase of an object but also a *quality* considered in itself. This would then seem to suggest that "correlate" is indeed used by Peirce in a wide sense. As we have already seen, however, Peirce says explicitly that by *correlate* he meant "a *thing* or *fact*, single and definite" in the *New List* (MS L 387b: 329, 1908). Moreover, it is an "event" (*ibid.*) This sounds quite different from Ransdell's interpretation.

De Tienne (1996: 287) objects to Randsell in the following manner: "If the correlate is a form or quality, then the relate should be of such nature as well. But Peirce always speaks of the relate as substance-subject, that is to say, as that of which the form is yet indeterminate." Two things must be pointed out, however: First, there is no reason why the *relate* must be of qualitative nature if the *correlate* is qualitative; second, the claim does not harmonize well with Peirce's 1908 remark either, for a *correlate* is a "determinate" occurrence for Peirce, whereas De Tienne suggests that it is indeterminate.[24]

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[23] In §15 of the *New List* Peirce is thus comfortable to write "reference to an object"(W 2: 56.14), "object or correlate"(W 2: 57.28), or more simply "*objects*"(W 2: 57.15), but other similar remarks are not hard to find. In one of his drafts of the *New List*, he phrases "object(correlate)"(W 1: 355, 1866), in yet another draft "Reference to an Object [in place of 'Reference to a Correlate']"(W 1: 327, 1865), "reference to the object [in place of 'reference to the correlate']"(W 1: 333, 1865). See W 1: 322-336 *passim*; much later "Object, or Correlate"(EP 2: 279, 1903 [CP 2.316]); and so forth.

[24] De Tienne (1996: 297) however also writes, "the correlate is a subject of the passed experience which has already undergone predication."

What is at least in part missing in these two interpretations is that (1) a *correlate* is considered by Peirce as a transitional phase appearing in the process of proposition formation, and (2) each such phase realizes its own quality, the accumulation of which contributes to the determination of the resulting propositional structure. In the sense of (2), therefore, it is not entirely wrong to say that a correlate is a quality (Ransdell), but each correlate is not an abstract quality or form. For it is an object instantaneously snap-shot in an event, as it were. In the sense of (1), on the other hand, there is a respect in which indeterminacy prevails in the process (De Tienne), but each correlate has a determinate quality of its own.

Clearly, then, the subtlety of *correlate* consists in the fact that it is a quasi-instantaneous picture of an ongoing process. If seen as a temporally frozen slice of an event, it might be imagined as purely qualitative, but this is of course an abstraction, and *therefore*, we are referred to *that from which* the abstraction was made. The occasion on which such abstraction takes place is the occasion on which a correlate is presented.

3.2.3.3   Stream of Correlates

Viewed in this manner, we see that the succession of correlates expresses the transformation of substance into an object of representation, a thesis allied with Kant in the *Critique*.[25] Thus Peirce writes: "A correlate is a second substance with which the first is in comparison"(W 1: 524). Note that a succession of *substances* is considered, and that the first substance is the more mediate one, because the more mediate one is logically prior (hence 'first') in the analysis. A thread of thought developing in this direction can be detected in Peirce's much earlier draft as well. In his analysis of cognition or thought in the early 1860's Peirce writes: "Plurality depends on the pluralities of the series in thinking. [. . .] In any case the quality is dependent on previous, qualities. But this *constitutes* causality. The dependency of Plurality, therefore, is Causal infinity"(MS 921: 89, c.1860; italics mine). Note that any recognized quality is dependent on previously experienced qualities, and that, accordingly, Peirce has a *stream of qualities* in mind, out of which serial chains of causality evolve. But obviously such a stream cannot be a stream of pure qualities, but a stream of correlates each with its own quality.

When a correlate is seen as one of the phases in the thought process, therefore, Peirce is right that there is a sense in which *correlate* is understood in "a wider sense than usual"(W 2: 53.9). Indeed we could say that a whole philosophy lies behind the notion

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[25] This of course does not mean that Peirce is diverting Kant's concept of *correlate* in the *Critique*, which is in fact impossible because of Kant's diverse usage of the word. Instead it can plausibly be said that Peirce inherits some aspects of the concept and then generalizes the idea. For instance, *correlate* understood as an object of intuition (A429/B457, A431/B459, A477/B516) is inherited; *correlate* as the ultimately unknown (A30/B45) is found *meaningless*; the *transcendental correlate* or *I think* (A123, A250, A366, A402) is completely overhauled; *time* as a constant *correlate* of all existence of appearances (A183/B226) and *correlate* as collective possibility (A572/B600) may be seen as having merged into *correlate* in the first sense; and so on.

of *correlate*, on which account a *correlate* could be objectual as well as qualitative, while the difference is a matter of degree. But the view that each snap-shot of the world presents a single quality is not an unfamiliar theme in Peirce. For example, Peirce writes much later: "if the view be limited to any part of the phenomenal world, however great, and this be looked upon as a monad, entirely regardless of its parts, nothing is presented to the observer but a quality"(CP 1.429, c.1896). Besides, we may recall that the difference between *quality* and *object* is small for Peirce, since a quality can be rendered an object of thought by *hypostatic abstraction*.

3.2.3.4   Comparison and Contrast

Parallel to the foregoing considerations, it can now be seen that "contrast"(W 2: 53.7), "similarity"(W 2: 53.7), "agreement"(W 2: 53.8), and "comparison"(W 2: 53.16-17) could all be made between a quality and an objectual correlate, while not excluding the case in which the latter, the correlate, turns out to be just another quality.[26] Reflecting such a flexible notion of *correlate*, therefore, Peirce made the following statement two years prior to the *New List*. As the passage anticipates many of the things we have considered, I will cite it at some length (W 1: 336, 1865):

> But every verb does not appear to have a suffering object. Thus, the sentence, this is blue, is complete, in itself. But, if we retrace our steps [in proposition formation], we observe that we said, everything is such as it is in comparison with something else. This is an old and established axiom. Now, we may have used suffering object [correlate] in too wide a sense [a wider sense than usual], but in such a sense as we have used it, it is evident that anything *not blue* might be added as the suffering object of the above sentence. In fact, the effect of this ancient maxim is that '*blue*' MEANS 'blue in comparison to' and therefore [logically] requires a suffering object [correlate]. The transitive verb supplies this comparison [more explicitly]. If a man kills a deer, that in comparison to which he is a killer is the deer.

Thus whether a *correlate* is qualitative, such as a color, or objectual, such as a deer, is not an issue for Peirce from a logical point of view, which was not grasped sufficiently clearly by Ransdell and De Tienne.[27] Moreover, a stream of correlates need not be temporally serial in Peirce's view,[28] although a serial model would make more intuitive

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[26] As before, it must be borne in mind that the analysis develops within the framework of proposition formation. The nature of the *opposition* between relate and correlate is that between "subject nominative" and "object accusative"(W 2: 58.16). It is clear that there is no restriction as to what the *correlate* or *object accusative* must be.

[27] The point is indeed more important than it might appear, since the concept of *correlate* does *not* distinguish between mental and physical qualities, which clearly coheres with Peirce's later view that "matter is effete mind, inveterate habits becoming physical laws"(EP 1: 293, 1891 [CP 6.25]). Recall also that as early as c.1860 Peirce says that the stream of qualities *constitutes* causal infinity. [See **3.2.3.3** (p.53f.) above.]

[28] Thus on *correlate* Peirce would go on to write: "Logical analysis is not an analysis into existing elements. It is the tracing out of relations between concepts on the assumption that along with each

sense from a genetic perspective. Accordingly, Peirce's understanding of correlates may be modeled more along the temporal axis (Figure 1, left), or less so (Figure 1, right), although actual experience would include a multitude of correlates with various spatiotemporal connections in the forms of comparison and contrast (Figure 2 below). Accordingly, *comparison* and *contrast* could be drawn in various spatiotemporal modes for Peirce.
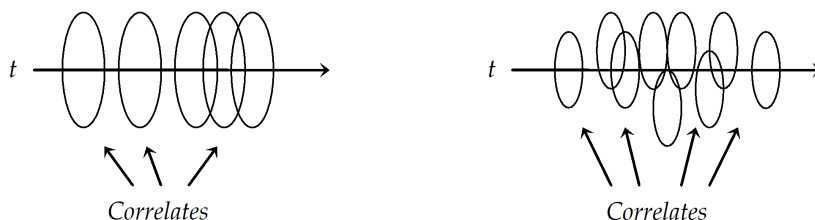
Figure 3.1: Stream of correlates. The left appears more serial than the right.

The dashed arrows illustrate
comparison and contrast.
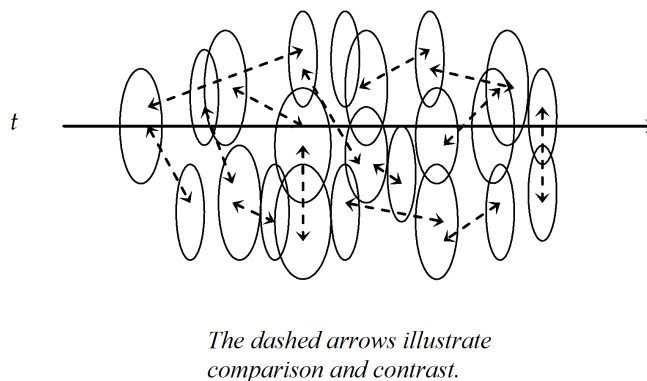
Figure 3.2: Comparison and contrast can be drawn in various spatiotemporal modes.

3.2.4 Important Implication

Given the subtlety and complexity of the notion of *correlate*, it seems a little unfortunate that Peirce did not expand his discussion of 'Reference to a Correlate' in the *New List*,

given or found concept is given its negative, and every other relation resulting from a transposition of its correlates. The latter postulate amounts to merely identifying each correlate and distinguishing it from the others *without recognizing any serial order among them*. Thus to love and to be loved are regarded as the same concept, and not to love is also to be considered as the same concept"(CP 1.294, c.1905; my emphasis).

contrary to a note he made in one of his drafts: "This section [on Relation or Reference to Correlate] should be enlarged and rewritten" (W 1: 522). Peirce did not do this. As a consequence, an important implication of his theory is veiled.

The implicit argument is nowise irrelevant to Peirce's broader philosophical interest. If *comparison* and *contrast* are drawn between a recognized quality and other unrecognized qualities, such as perceiving blue in comparison with non-blues, there would be qualities that are covertly cast out from recognition when we become aware of a certain quality. If I perceive the blue of an object, for example, the blue stands out either by contrast to non-blue colors, or as a generalization of similar shades of blue, or more likely, both at once. Turning to this phenomenon, Peirce writes: "The occasion of the introduction of reference to a ground, therefore, is generalization or contrast"(W 1: 522, 1866).

But framed in this way, it is not hard to see that a perceived color would be more like a composite color, standing in contrast to dissimilar colors, on the one hand, while similar tinctures fusing into a representative tincture, on the other. The initial tinctures have now merged into a general quality in perception. In Peirce's one of well-known arguments (CP 7.634, c.1903):

> Let us consider, first, the predicate, 'yellow' in the judgment that 'this chair appears yellow.' This predicate is not the sensation involved in the percept, because it is general. It does not even refer particularly to this percept but to a sort of composite photograph of all the yellows that have been seen.

The yellow itself, considered in the predicate, is the *ground*, a product of generalization and contrast, whereas the yellows seen in past experience form a subset of *correlates*. This means that a recognized quality is always accompanied with rich spectra of qualities that are not consciously attended to, although without interaction with them, the recognized quality itself would not have gained its salient status in cognition. But what is important is that each unrecognized quality, however subtle, relates the mind to a correlate, such that there are literally countless bundles of references to correlates that I am not consciously aware of. In perception, therefore, we are strongly referred to an object especially if the object exhibits a texture of diverse qualities.

The reason this is important is that the working of unrecognized qualities account for the genuine thickness of our experience. That is, on Peirce's theory, saying that the application of a predicate to substance is *hypothetical* does not mean that cognition is but in thin contact with the world. Quite the contrary, the formation of a proposition as a hypothesis is itself a living proof of qualitative diversity that are explicitly and implicitly thrusted upon the mind. If impressions were extremely simple and uniform, there would be no need to reduce them to unity even if they impress themselves upon the mind.

As argued above, therefore, reference to a correlate is multifold in nature, but furthermore we should stress that in experience references to correlates are made not only through recognized qualities but also through peripheral, unattended, or even excluded qualities. A recognized quality is, then, just an aspect of an object accompanied by

ample residues of qualities implicitly referring to other facets of the object.[29]

3.2.5 The Problem of Secondness

As Peirce specialists would notice from this discussion, therefore, *Relation* is a conception that accounts for aspects of *externality*. Taken together with the dynamic process of *attribution*, it refers us to something external to the recognized quality, although the externality might seem harder to discover in the *New List* if we ignore the roles played by *unrecognized* qualities. Such unrecognized qualities are transparent, as it were, only their blind effects being felt, but they nevertheless blend into the constitution of the object of cognition. The kind of externality suggested by this explication is associated with what Peirce later calls *secondness* in his theory of categories.

In this connection, Debrock (1998) offers an observation that is worth looking at. He claims: "while the terms given under Firstness and Thirdness remain relatively stable, there is a marked development when it comes to Secondness, which at first [around the time of the *New List*] is seen as a purely logical category, while at the end it receives an unabashedly ontological content."[30] The point made by the author is that Peirce's categories of *quality* (later *firstness*) and *representation* (*thridnesss*) appear to retain the same character over the many years of Peirce's philosophical development, while relation (later *secondness*) undergoes much greater change. There is no doubt, I agree, that such words as *reaction*, *brute fact*, and *struggle*, are more typical of Peirce's later writings, not employed by Peirce in the 1860's, hence in support of this interpretation.

There are, however, two ways in which a quick response can be made. First, *categories*, including *relation* (or *secondness*), are always *logical* conceptions, *forms* of thought and experience, for Peirce. It is not true that it was *initially* a purely logical conception, and later not. Secondness is the common *form* exemplified in such phenomena as reaction, brute fact, and struggle. Second, and more importantly, what Peirce means by *Relation* in the *New List* is *Reference to a Correlate*. Accordingly, we need to comprehend what a *correlate* is, which is why several sections have been devoted to it in this chapter. What our considerations have revealed is that (1) innumerable correlates or 'snap-shots' accumulate in a hundredth of a second to evolve into the "suffering object" of a proposition, and that (2) there is even a much greater residue of unrecognized qualities which also contribute to this process. It is, therefore, not wrong to say that each correlate, or each 'snap-shot' of an object, is less resistent or *ob-jecting*, but it must be noted that a *relation* would be found unduly thin if these two points are overlooked.[31]

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[29] In Whiteheadian terms we can say that *negative prehensions* also contribute to the subjective form of the prehending occasion.

[30] Debrock, "Peirce's Category of Secondness and Information," in *C.S.Peirce: Categories to Constantinople*, p.17, 1998.

[31] The massive correlates taken together would correspond to what Peirce later calls the *dynamical object* of a sign, although we shall not use this expression in the present context since the terminology belongs to much later writings of Peirce.

3.2.6　From Quality to Relation

I now turn to the transition from the conception of Quality to that of Relation. What Peirce is saying in §8 is that since a *ground* is obtained through comparison and generalization, there ought to be things or facts to be compared and generalized. The things and facts other than the quality are the correlates, or what I have informally called 'snap-shots.'

In view of the *unification, differentiation, reunification* process, however, there are once again two sides to this Peircean argument: (1) we need to take into account how the quality was obtained as a general attribute of an object; (2) we need the conception of a second *thing*, that is, a thing other than the quality, into which the recognized quality is integrated. The two sides are intertwined in Peirce's argument, but (1) is more logical, while (2) is more genetic. Clearly, both (1) and (2) are used to develop the thesis that whenever there is a quality, or a reference to a ground, there is also a reference to a *correlate*, or relation.

Although less articulate in some regard, we may take a quick look at another early draft of the *New List* in which perspectives (1) and (2) are mirrored and gives us a sense of where the conception of Relation came from (MS 921: 124, c.1860-1861):

> Quality is only the outside of substance and implies therefore something without. This notion which appears as Relation or Act — according as it is viewed subjectively or objectively, is the second generalization which that of Quality enables us to make. What is must not only have a *ground* but also and therefore, an *object*. This *object*, regarded abstractly, is matter.

Thus we are informed that (1) if the reference to an object is seen as a logical consequence of the conception of quality, it is termed "Relation," which Peirce suggests by the word "objectively," whereas (2) if the reference to an object is seen as the activity of mind by which the quality interacts with something "without," it is simply called an "Act." Seen under this light, it is understandable that *Reference to a Correlate* is identified with *Relation* in the *New List*. For "Relation" is evidently conceived by Peirce as the objective or logical conception to be derived after Quality,[32] while the 'Act' may remain in Peirce's consideration as the subjective side of the same experience. In the passage above, we also notice that the word "object" is used instead of *correlate*, which is "something without." An echo of this could be heard in the *New List*: "An *other* is plainly equivalent to a *correlate*"(W 2: 55.6-7). I will not discuss "matter" here mentioned by Peirce.

It is worth stressing that correlate and object are *never* absent in Peirce's theory of cognition. If there is a recognized quality, there is, necessarily, a correlate. This means that it is almost a self-contradictory fallacy to hold that there could be representations without correlates, or signs without objects. Hence no surprise comes to us when Peirce writes in §15 of the *New List*: "it is remarkable that, among all the definitions of the

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[32] Compare this with "representation" taken as "logical" by Peirce in the same draft (MS 921: 124, c.1860-1861 [6 lines from the bottom of the leaf]).

proposition [. . .] there is, perhaps, not one in which the conception of reference to an object or correlate is not *the* important one"(W 2: 57.23-28, my italics).

Finally, Peirce states in the second one-sentence paragraph of §8: "Reference to a correlate [Relation] cannot be prescinded from reference to a ground [Quality]; but reference to a ground [Quality] may be prescinded from reference to a correlate [Relation]"(W 2: 53.13-15). Proceeding from *Quality*, therefore, *Relation* is the next, or second, derived category in the *New List* in order passing from *being* to *substance*.

Chapter 4

New List §9-§13

Much space has been devoted to *Quality* and *Relation*. Once these two categories are derived, the third category, *Representation*, follows naturally, although *Representation* is probably the most original of Peirce's categories. In this chapter, we mainly focus upon §9 and §10 of the *New List*, which (1) derives the category of *Representation*, and (2) completes the derivation of categories. §11, §12, and §13 will be treated briefly since they present the results of the derivation.

4.1 Representation: Reference to an Interpretant (§9)

4.1.1 Example 1: Comparison of 'p' and 'b'

The third conception to be derived is *Representation*. The opening remark of Peirce in §9 is not very different from that of §8. He first focuses on the occasion of the introduction of a correlate. But in Peirce's view empirical psychology has not made sufficient observations of this occasion (W 2: 53.16-17):

> The occasion of reference to a correlate is obviously by comparison. This act has not been sufficiently studied by the psychologists, and will, therefore, be necessary to adduce some examples to show in what it occurs.

Thus Peirce proposes a thought experiment of comparing the two letters 'b' and 'p,' such that, if one is flipped around the horizontal axis, it can be placed upon the other resulting in the same shape (W 2: 53.19-25):

> Suppose we wish to compare the letters p and b. We may imagine one of them to be turned over on the line of writing as an axis, then laid upon the other, and finally to become transparent so that the other can be seen through it. In this way we shall form a new [i.e. third] image which mediates between the images of the two letters, inasmuch as it represents one of them to be (when turned over) the likeness of the other.

What the thought experiment does is quite evident, as partly illustrated below. But the

Figure 4.1: Peirce's example of flipping 'b' or 'p' and placing it on the other.

example Peirce gives also requires careful reading with respect to one point: whichever letter we start with, 'p' or 'b,' if we chose to flip one of them, we should keep that letter in mind as the one through which we look at the other. That is, their images are symmetric but the roles they play in the thought experiment are not. More specifically, the letter flipped around and placed onto the other is the 'relate' for Peirce, while the "other" letter staying in its original position is the 'correlate.' It is crucially important to observe that the one on the top, not the one beneath, becomes "transparent" so that "the other can be seen through it." The importance of this will become clearer as we go over two more examples Peirce considers.

4.1.2 Example 2: Murderer and the Murdered

The second example is this (W 2: 53.25-32):

> Again, suppose we think of a murderer as being in relation to a murdered person; in this case we conceive the act of murder, and in this conception it is represented that corresponding to every murderer (as well as to every [act of] murder) there is a murdered person; and thus we resort again to a mediating representation [act of murder] which represents the relate [murderer] as standing for a correlate [the murdered person] with which the mediating representation [the act of murder] is itself in relation.

The main idea is rather simple. Imagine a person X with the attribute of being a murderer, and some victim of murder Y. We know that person X murdered someone, and that person Y was murdered by someone. If we say that it was X that murdered Y, we have formed an interpretation in which X stands in a murder-relation to Y. We have applied the conception of the act of murder to the relation in which X, the relate, stands to Y, the correlate, while it is quite possible that Y was a victim of another case.

Thus if we conclude that X murdered Y, we have interpreted the relation of X to Y as the relation of the act of murder to Y. In this context, a 'relate' refers to that which is related to a second thing, but it must be noted that Peirce identifies the *relate* first, through which we are referred to the correlate. This is why Peirce says that we think of a murderer *as* being in relation to a murdered person. Note also that the murder-relation is an *asymmetric* relation.

The previous example of 'b' and 'p' is to be explained in the same way. Suppose we place one of the letters on the other so that we see the one beneath through the one on the top. It is possible that we compare the letters in terms of size, font type, color, pronunciation, frequency of appearance in the Bible, and so on, and think that the one beneath is *not* like the one on the top. This means that if they are seen as alike, we have formed a specific interpretation that identifies a likeness, such as that of shape. The mediating image or representation in this case is the iconic shape common to the two letters. It interprets the relation in which the letter on the top stands to the letter beneath *as* the relation in which the iconic shape stands to the letter beneath.

The *relation* between the two letters is *asymmetric*, since the one on the top is now transparent, while the other is not, though, strictly speaking, some part of the letter at the bottom also becomes transparent as irrelevant features recede into the peripheral. This also means that we are focusing our eyes more on the letter beneath, namely on the 'correlate.' That is, the relate becoming transparent, we are referred to the correlate, which continues the idea of 'reference to a correlate' introduced in §8.

4.1.3 Example 3: 'Homme' and 'Man'

A third example follows in Peirce's text (W 2: 32-35):

> Again, suppose we look out the word *homme* in a French dictionary; we shall find opposite to the word *man*, which, so placed, represents *homme* as representing the same two-legged creature which *man* itself represents.

The example is now easy to grasp. We imagine someone from France uttering, "homme." Suppose we fail to understand 'homme.' The word resounding in our ears, we feel perplexed, and what is more important is that the word "homme" stands in our mind like an impenetrable concept. Using a dictionary, however, we discover that what the word 'man' says in English is what 'homme' says in French, namely, that the relation in which the word 'man' stands to a two-legged creature is the relationship in which the word 'homme' stands to the same two-legged creature. Once we see that it is nothing but the two-legged creature that the word "homme" refers to, the word "homme" ceases to disturb us and becomes transparent. The word "homme" is the relate, the two-legged creature is the correlate, and "man" is a mediating representation, which shall be called the *interpretant*. Note that when words are functional, they are *transparent* rather than *abstract*.

4.1.4 Generalization to 'Representation'

Hence Peirce continues as follows, by which he introduces the most original of the three conceptions, namely, the conception of *Representation* (W 2: 53.35-54.2):

> By a further accumulation of instances, it would be found that every comparison requires, besides the related thing [i.e.the relate], the ground, and the correlate, also a *mediating representation which represents the relate to*

be a representation of the same correlate which this mediating representa-
tion itself represents. Such a mediating representation may be termed an
interpretant, because it fulfils the office of an interpreter, who says that a
foreigner says the same thing which he himself says.

The significance Peirce attaches to the idea of "mediating representation" or "inter-
pretant" is inferrable from the fact that this is the only line in the *New List* that is
extensively italicized by Peirce, although it is probably not easy to assess the originality
of the insight unless it is brought under the light of much later writings of Peirce as
well. But the idea itself is plain. In view of *Relation*, the previous conception, it is
almost instantly clear that having a relate, ground, and correlate is not enough to have
a relation, just like having a pair of things, such as persons X and Y, does not establish
how they are related to each other. An interpretation is needed to let them stand in a
specific relation.

The reason a *ground* is insufficient for this purpose is that there could be many re-
spects in which a relate and correlate could be in some agreement, although there should
be at least one such respect in order to form a propositional structure. Therefore, on
Peirce's analysis, what enables a reference to a correlate is a mediating representation,
in addition to a ground, that delimits and determines the relation(s) in which the relate
may stand to the correlate.

4.1.5   The Last Two Paragraphs of §9

The last two paragraphs of §9 summarize the argument up to this point. Note that
Peirce keeps using the expression 'reference to . . . ,' since conceptions are not abstract
elements, but forms functionally active in thought (W 2: 54.11-15):

> Every reference to a correlate [relation], then, conjoins to the substance
> the conception of a reference to an interpretant [representation]; and this is,
> therefore, the next conception in order in passing from being to substance.
> Reference to an interpretant [representation] cannot be prescinded from
> reference to a correlate [relation]; but the latter can be prescinded from the
> former.

As long as there is a specific relation in which the relate stands to the correlate, there-
fore, there has to be a determination to which the relation itself refers to, which is called
the "interpretant" by Peirce. Such a reference to an interpretant is in turn *defined* as
representation.

Note that in this last part of §9 Peirce's argument leans slightly toward the genetic
perspective, as he says that every relation conjoins to the substance the conception of
representation, which suggests that there had to be a representation to be applied to
substance so that *relation* comes into play. Further we may observe that Peirce should
have determined the order of categories *after* having stated the *prescision relation*, but
the intent of the argument is clear enough so that no confusion may arise.

Thus Peirce has obtained the hierarchy of conceptions, *being*, *quality*, *relation*, and *representation*. As remarked earlier on, *substance* will be the fifth and last conception in the list. Thus the next work is to argue that immediately below representation, there is only *substance* left. This is done in §10.

4.2   Characterizing Representation Further (§10)

The purpose of §10 is not to discover another elementary conception, but to show that there is no conception intermediate between *representation* and *substance*. Peirce makes a brief return to a consideration of impressions, which is understandable, because he is now further down the chain toward *substance*. Our discussion of the section will include a summary picture of the derivation of elementary conceptions, since §10 completes the whole procedure. Peirce's discussion begins as follows (W 2: 54.16-21):

> Reference to an interpretant is rendered possible and justified by that which renders possible and justifies comparison. But that is clearly the diversity of impressions. If we had but one impression, it would not require to be reduced to unity, and would therefore not to be thought of as referred to an interpretant, and the conception of reference to an interpretant [representation] would not arise.

The first sentence takes up on the first sentence of §9, where Peirce explained that the occasion of reference to a correlate is by comparison (W 2: 53.16-17). Comparison, which Peirce hardly assumes as a conscious act, occurs in the midst of diverse impressions, or to put it otherwise, that is the only occasion needed. The rest of the passage is easily grasped if we recall that a relate and part of the correlate are rendered transparent once the interpretant is at work. For the nature of this transparency consists in nothing but the effective transition from the confused impressions to a simplified and restructured stage of thought. Hence Peirce writes (W 2: 21-25):

> But since there is a manifold of impressions, we have a feeling of complication or confusion, which leads us to differentiate this impression from that [impression], and then, having being differentiated, they require to be brought to unity. Now they [impressions] are not brought to unity until we conceive them together as *ours*, that is, until we refer them to a conception as their interpretant.

It is easy to see that Peirce is repeating the *unification*, *differentiation*, *reunification* process in the first sentence. There is, on the other hand, some flavor of Kant in the second sentence on unity, although Peirce has apparently replaced the Kantian insight of having the manifold held as "altogether *my* representations [*ingesamt meine Vorstellungen*]" (B134) with the more anonymous or intersubjective expression "*ours.*" Note that for both Kant and Peirce, this is interpreted on the level of the manifold of impressions.

At this rather primitive level, however, what a reference to an interpretant does is just to establish a relational structure, in which differentiation and reunification of impressions occur in a certain direction. If, for example, I hear a fragment of an orchestral melody in a store which I only vaguely remember, I have a feeling of confusion, by which my mind is prompted to come up with, for instance, an occasion on which I heard the melody before, a particular orchestra that might play the piece, the title of the music, and so forth. Such a process Peirce sketches out above by saying that we refer impressions "to a conception as their interpretant." Peirce now continues as follows (W 2: 57.27-32):

> Thus, the reference to an interpretant [Representation] arises upon the holding together of diverse impressions, and therefore it does not join a conception to the substance, as the two other references [Relation and Quality] do, but unites directly the manifold of the substance itself. It is, therefore, the last conception in order passing from being to substance.

As Peirce has reached the crudest level of unity, there is no new category to be derived. Technically speaking, Peirce could have applied *prescision* to *representation* and *substance*, but since by definition *substance* does not involve any interpretation, the result is regarded as self-explanatory. For the difference between *representation* and *substance* is that the latter is the crudest base that holds the impressions in a muddled unity, as it were, while the former, *representation*, expresses the next step toward building a finer structure arising on the surface of the manifold. Note that as the finer structure lifts itself up, an increase in transparency quickly takes place.

4.3   The New List of Categories (§11)

4.3.1   Summary of Argument

Given the last step of analysis, the view reached in the *New List* is that once interpretants are referred to, *relation*, *quality*, and *being* are able to build up a propositional structure. The flow of the argument was like this. A proposition is a construct consisting of a subject and predicate, put together by *being*. Hence *being* is the first obvious category. The predicate asserts a quality of the substance described by the proposition. Thus *quality* is the next category. Seen more closely, however, a quality attributes a predicative element to substance, which element we may call the *ground*. The *ground* is a product of abstraction and generalization, and moreover, it is attributed to something other than itself. Thus reference to a correlate is in order. This is *relation*. But a relation requires comparison, or otherwise the relation in which the relate stands to the correlate would be indeterminate. Thus a reference to an interpretant, which we define as *representation*, is the next conception. Since representation acts directly on the manifold, no other conception remains between *representation* and *substance*.

4.3.2 The Elusiveness of the Categories

It is worth noting that *ground*, *correlate*, *interpretant*, and references to them, are highly elusive. To see this, suppose we recognize a black circle drawn on paper (Figure 4, left). The figure stands out black as we gaze at it, although in detail it can hardly be uniformly black in the way we perceive it, since the ink is printed thin or think on different parts of it. The shades of black, however, merge together and we perceive a generic *blackness*, which is the *ground*. The recognized *blackness* is also under the influence of the white background to which it stands in *contrast*. As a consequence the *blackness* appears sharp.

Figure 4.2: The perceived *blackness* of a circle is a *ground*.

But in order to reach such a recognition, our eyes have scanned over multiple snapshots of the ink pattern. Further, a transparent space has emerged between our eyes and the figure on the paper, such that the ink pattern now faces us in space as an object for us. This implies the stream of *correlates*, of which the last synthetic correlate is roughly the *object* before us.[1]

No circle drawn on physical paper, on the other hand, is a perfect circle, so that in a blink of second we might have conceptually distinguished the circle from an oval like the one on the right (Figure 4, right). Suppose such a comparison did take place. Then what mediated between the two figures, and made the left shape appear rounder than the right, is the *interpretant*. This is harder to detect. To magnify such an effect, let us combine the same circle with two ovals as below (Figure 5).

The circle now appears like a sphere. Hence if we see the circle through the ovals, there is an effect induced by the latter on the former. The point is that every *comparison* brings about such an effect, however subtle, which is certainly not part of the original items. This effect, therefore, signifies the *interpretant*. As I shall explain later in this study, it is at times difficult to identify the interpretant, but we could say for the moment that the *interpretant* corresponds to the total effect of the synthesis *minus* the effects of the items taken separately.

As one can see, therefore, references to *ground*, *correlate*, and *interpretant*, produce

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[1] Kant goes over such details in the *Critique* when he considers the drawing of a line. In Kant's terminology, the *object* is thus necessarily constructed as "a determinate space [ein bestimmter Raum]," which is, he stresses, "*to become an object for me* [*für mich Objekt zu werden*]" (B138).
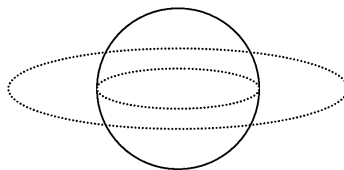
The same circle appears like a sphere.

Figure 4.3: An interpretant is at work in *every* comparison.

a synthetic effect which is subtle as well as elusive. For this reason Peirce writes: "Three conceptions are perpetually turning up at ever point in every theory of logic, and in the most rounded systems they occur in connection with one another. [...] they are hard to seize and may be easily overlooked"(CP 6.32, 1891). The elusiveness of the categories is reflected in Peirce's theory of signs, as I will argue in the next chapter.

4.3.3 The List Presented

Peirce now arrives at his new list of categories (W 2: 54.33-55.1):

> §11. The five conceptions thus obtained, for reasons which will be suffi-
> ciently obvious, may be termed *categories*. That is,
>
> BEING,
>   Quality (Reference to a Ground),
>   Relation (Reference to a Correlate),
>   Representation (Reference to an Interpretant),
> SUBSTANCE.
>
> The three intermediate conceptions may be termed accidents.[2]

The reason why commas and a period are used in the list requires no detailed explanation, since they just reflect the order of derivation. Note that the conceptions methodologically derived by *prescision* are the middle three. As stated earlier, BEING and SUBSTANCE are more like nominal definitions of the two extremities of the hierarchy, which, however, does not make them useless.

4.4 On the Order of Categories (§12)

The entire text of §12 reads as follows (W 2: 55.1-11):

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[2] There are no line spaces immediately above and below the list in the originally published article, but I follow the W edition here.

This passage from the many to the one is numerical. The conception of a third [reference to an interpretant] is that of an object which is so related to two others, that one of these [relate] must be related to the other [correlate] in the same way in which the third is related to that other [correlate]. Now this coincides with the conception of an interpretant. An other is plainly equivalent to a correlate. The conception of second [however] differs from that of other, in implying the possibility of a third. In the same way, the conception of self [if seen as first] implies the possibility of an other. The ground [in this case] is the self abstracted from the concreteness which implies the possibility of another.

There a few things to be noted. The numeric passage, the reduction of the many to one, is certainly a Kantian motif, as Kant considers the "numerical unity [numerische Einheit]"(A107) of apperception on which he grounds "a consciousness of a necessary unity of the synthesis of appearances"(A108), according to concepts, where the concepts are "rules [Regeln]" that determine "an object [einen Gegenstand]"(*ibid.*). Thus in accordance with the reduction of the many to one, an *object* or *correlate* appears as the *other* on both Kant's view and Peirce's view.

Yet Peirce is not simply repeating Kant. The self, the first, implying the other or not-self, the second, might appear plain. But by reinterpreting the other as the second in ordinal manner, Peirce wishes to underscore the implication of the more important third, which is why he states in particular that "the conception of second differs from that of other." With no less significance the same principle is applied to the first implying the second as well. For the *ground*, or the pure self in this case, is an abstraction from the concreteness of experience in which the other is already implied.[3]

At this point it is good to recall that Peirce's method of deriving categories is fundamentally different from that of Kant, and that the resulting list of categories is also markedly distinct from Kant's table. Peirce, we may say, works on Kantian themes from within, and thereby uncovers the more general forms of thought dimly present in Kant's table. Or as Kant himself remarked, "that each class [of Kant's categories] has the same number of categories, namely three, calls for reflection"(B110). Peirce writes later (MS 901: 2-3, c.1885 [CP 1.369[4]]):

> Kant, the King of modern thought, it was who first remarked the frequency in logical analytics of *trichotomies* or threefold distinctions. It really is so; I have tried hard and long to persuade myself that it is only fanciful, but the facts will not countenance that way of disposing of the phenomenon.

In light of the differences between Peirce and Kant, however, we need not dramatize Peirce's indebtedness to Kant. "My own list grew originally out of the study of the

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[3] Peirce's restatement in 1893 is this: "The three conceptions of Quality, Relation, and Representation, are numerical. The quality is *First*, in the sense of the original, the fresh. Relation is simply otherness, or duality. Representation is mediation, or thirdness"(MS 403: 14, 1893).

[4] The word "*trichotomics*" in the CP edition is an error. I follow Fisch, *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, p.180, 1986.

table of Kant"(CP 1.300, c.1894), Peirce would candidly acknowledge, but it is also true that the three categories were "derived from Kant and other writers"(MS 641: 37, 1909). The latter statement is, however, still somewhat too modest, given the unique insights of Peirce that originated with his own demanding and most exacting labor.

4.5   Possible Ontology (§13)

We may now turn to §13, short enough to observe in entirety (W 2: 55.12-19):

> §13. Since no one of the categories can be prescinded from those above it, the list of supposable objects which they afford is,
>
> What is.
> > Quale—that which refers to a ground,
> > Relate—that which refers to ground and correlate,
> > Representamen—that which refers to ground, correlate, and
> > > interpretant
> It.

The prescision relation is made conspicuous because of the overlap of references: We cannot attend to the lower of a pair of supposable objects to the neglect of the higher one in that pair. "Supposable objects" can be taken in the sense of "formal objects" of thought (W 1: 524, 1866). The ontological implication of this list is that entities not appearing in it would not be admitted into Peirce's metaphysics. The most unique of the formal objects is *Representamen. Sign* in Peirce's mature semeiotics forms a subclass of *Representamen*, although Peirce does not always find it necessary to distinguish between sign and representamen.

If compared with the list of categories in §11, a difference stands out. In the list of categories, "Relation" was "Reference to a Correlate"(W 2: 54.38), not 'Reference to Ground and Correlate,' and "Representation" was "Reference to an Interpretant"(W 2: 54.39), not 'Reference to a Ground, Correlate, and Interpretant." Unlike the list in §11, therefore, the table of objects in §13 is thicker toward the bottom, which feature is clearly inherited from a preceding draft (W 1: 524-525, 1866).[5] A proximate interpretation I propose is that since *objects* are concerned in §13, they are regarded as supposable formal *contents* of thought in the cognitive process, as shown below (Figure 4.4, p.70).

Hence on this interpretation Peirce is leaning toward a genetic viewpoint, so that the *content* of the process is rendered comprehensible. It is at least natural to view the list in this way, because the material of thought becomes thinner and transparent as the inchoate cognition enters developed stages of thought. Cognition is largely an abstractive process.

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[5] There is no corresponding table of *objects* in MS 403, 1893.
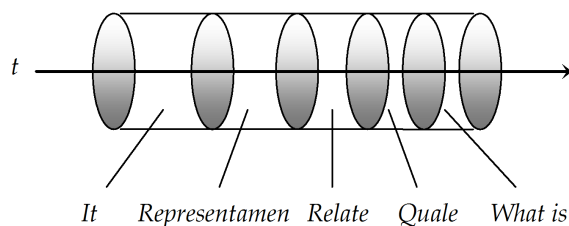
Figure 4.4: Supposable objects afforded by the categories.

More properly speaking, however, the list of supposable objects in §13 should be regarded as a consequence of the list of categories in §11. The idea is that if a higher category can be *prescinded* from the lower categories, this would mean that in terms of content the more abstract part of thought can be distilled from the more concrete parts. Thus there would be five supposable objects as considered in §13. Note that "What is," which corresponds to BEING in §11, is the *thinnest* in terms of conceivable content, in so far as it is prescinded from the rest of the structure. For the conception of being "plainly has no content"(W 2: 50.6-7).

In this regard Figure 6, although it offers a simple illustration, sacrifices accuracy. As I have insinuated, the supposable objects in the *New List* can be seen as characterizing the formal *content* of thought at each stage of the cognitive process, but the claim is not that we can discover them by introspection. For it is logical analysis that *should* inform us about the genetic nature of the process of thought. "Logic itself," hence Peirce writes, "has nothing to do with the process of thinking"(MS 498: 24, undated[6]), while "its highest and greatest value is that it affords us an understanding of the processes of reasoning"(CP 2.6, 1902).

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[6] Since the manuscript refers to 1896 as the year Peirce invented his *existential graphs*, it is at least as late as 1896.

Part III

New List and Semeiotics

Chapter 5

The Theory of Signs

5.1 Basic Characterization of Sign

This chapter offers a sketch of Peirce's theory of signs in light of the *New List*, so as to link the category of *Representation* in the *New List* to his later *semeiotics*.[1] In other words, the purpose of this chapter is to flesh out the semeiotic ideas of the *New List* sufficiently far by comparing the conception of *Representation* with the concept of *sign* found in the mature *semeiotics* of Peirce. We shall go over five definitions of *sign* given by Peirce, some of which are well-known, and compare them with the argument in the *New List*. Of the five definitions, the second and fifth definitions reflect a *genetic* viewpoint. The third and fourth definitions suggest a more *logical* perspective. The first definition is chosen as a relatively neutral formulation.[2]

5.1.1 Sign as Part of the Relate: Definition 1 (1904)

As we have seen in the previous chapter, Peirce's *New List* develops the fundamental idea of *representation*, as well as that of *representamen*, where the latter is a formal object of thought considered as the bearer of the function of representation. This is a landmark in the *New List* that points to Peirce's *semeiotics*. Murphey is right in seeing that the "sign relation" is the most original achievement made by Peirce in the *New List*,[3] although such a sign relation would only be properly understood when its place in Peirce's theory of categories is clarified.

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[1] In this study I will use the spelling *semeiotics* (adjective *semeiotic*) to designate Peirce's version of *semiotics*, which is a compromise between Peirce's preferred term *semeiotic* and the more common term *semiotics* used today (in Peirce's hand *semeiotics* occurs in MS 774: 3, 1904 [EP 2: 327]; MS 775: 5, undated (probably c.1904); and in MS 777: 2, undated. Fisch (1986: 322) remarks that Peirce *never* spelled *semiotics*. I shall not pursue this matter further, however, since the spelling does not have much to do with the theory itself (Peirce, for instance, spells both *semeiotics* and *semeiotic* at MS 755: 5).

[2] The reason there are *genetic* and *logical* definitions of *sign* in Peirce's writings is explained in **7.3** (p.117f.).

[3] Murphey, *The Development of Peirce's Philosophy*, pp.65-66, 1993.

What appears rather remarkable from this viewpoint is that once the ideas of the *New List* are apprehended adequately, Peirce's vast semeiotic writings do not really revise the ideas, except for, of course, certain changes in terminology as well as the extensiveness of analysis. This simply means that the core of Peirce's theory of "Representamen"(W 2: 18), or 'sign,' is very stable in his thought after the *New List*, which should not surprise us if Peirce's high appraisal of the work is taken into account. For the sake of simplicity, let us not distinguish between *representamen* and *sign* for the time being and take a quick look at one of the well- known definitions of *sign* Peirce gave in a letter to Lady Victoria Welby. The words in square brackets are inserted so as to translate the formulation back into the earlier language of the *New List* (CP 8.332, 1904):

> A sign [representamen] therefore is an object [part of the relate] which is in relation to its object [correlate] on the one hand and to an interpretant on the other, in such a way as to bring the interpretant [an interpretive effect] into a relation to the object [correlate] corresponding to its own relation to the object [so that the interpretant explains how the relate stands to the correlate].

There are a few delicate points involved in the formulation, as might be suggested by my insertions, but I will address only the most important one: A sign, recognized as such, is a formal object which appears to us as a *part* of the *relate*. This is because when we recognize a sign, we are viewing an object-complex through the sign that represents it.[4] More details of this will be considered in the next several sections.

5.1.2 Definition 1 in Light of the *New List*

There is, however, no significant variation in the definition above from what Peirce held in the *New List*. To see this, suppose we see the word 'homme' printed on paper, this time in *blue* ink. In half a second or so, we judge that it is a French word, and call to mind that 'homme' means 'man' in English.

The interpretation then brings three things into relation. It brings (1) the word 'homme,' (2) a two-legged creature, and (3) the conception of man, into a triadic relation, in such a way that, (3) the conception of man, which refers to (2) or the two-legged creature, interprets the relation between (1) the word 'homme' and (2) the two-legged creature, to be the same relation in which (3) the word 'man' itself stands to (2), namely, the two-legged creature. Then 'homme' is seen as a *sign* of the two-legged creature, or more simply, 'homme' *represents* the two-legged creature, to the interpreter. When we recognize the meaning of the word 'homme,' therefore, we are recognizing the two-legged creature through the word 'homme,' which is the *relate*.

The reason the sign representing the two-legged creature is not the whole of the relate, but only a *part* of it, is simple. The sign that actually operated upon our mind

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[4] Recall that a *representamen* is nearest to *substance* and hence rich of content by involving references to a *ground*, *correlate*, and *interpretant*. That is, all three elements are implied in the sign. See Figure 6 of the previous chapter.

is clearly not the whole of what we found on paper, since such features as the word being printed in *blue*, or in large or small font, had little or nothing to do with the resulting recognition. Only some part of the relate is functional as a sign.

5.1.3   Signs and Physical Objects

Likewise, physical objects commonly thought of as signs, such as flags, traffic lights, or portraits, are not themselves signs in the strictest sense of the word. Part of such physical objects can act as signs, and it is only when we have such functional features of the objects in mind that we refer to them as signs. For example, a flashing light can be used as a sign, but the brightness of light, for example, is normally not a functional feature of an intended signal.

As an approximation, therefore, we can say that it is only certain abstracted features or traits of things encountered in an ongoing process that operate as *signs*. This is, however, the basic view developed in the *New List*, since a degree of abstraction is always involved in *representamen*. For a *representamen* is more structured and abstract than the almost bare *It*. The point to be made is that the action of a sign occurs when a structure of thought emerges, which means for Peirce that the working of sign is a fugitive phenomenon.

5.2   The Working of Sign

5.2.1   Sign at Work: Definition 2 (1911)

A sign, therefore, can be very hard to seize. To illustrate this, consider a figure like Wittgenstein's duck-rabbit, or perhaps just an ink-blot such as the ones used in a Rorschach test. Whatever the figure looks like at first glance, a belief, say 'this is a duck,' or 'this is a human face,' could be formed in a few seconds. Suppose that through certain features of the ink pattern we start to see a human face. In Peirce's language, an interpretant is referred to when such an interpretation is formed, which in turn informs us that a sign was at work. But where did the sign actually do its work?

A rough Peircean sketch would have it like the following. Prior to the framing of an interpretation, we had a confused feeling about the presented figure. In this state what we see is an ill-focused snapshot of some given object. As we wonder what the figure represents, certain features of the pattern, whose initial characteristics depend on how the ink is spread on the paper, are configured, reconfigured, and organized, the outcome of which could be a duck, a human face, or something else. It is important to note that, if slightly magnified, we actually see the features of the ink-blot vibrate, move about a little, or melt away, while we are staring at the same ink pattern.

Intuitively speaking, such a felt movement *minus* the effects of the physical movement of the eye, changes in light and angle, and so on, is where the working of *signs* is witnessed by us. The supposed agents of the working, which are almost inseparable from the features in rapid motion, are the *signs* regarded as formal objects by Peirce. If the features are completely abstracted from the object and taken in themselves,

they are *grounds*, but they would not know how to move about so that at least one interpretant must be referred to in order to settle with an interpretation.

The final snapshot of the correlate, then, is the object represented *as* a duck, *as* a human face, and so on, with which the most lively working of signs comes to a rest. Note that once an interpretation is formed, the moving features fuse into the correlate again and show it *as* an object, as if parts of the ink pattern were initially set free, moved about, and then flew back into the pattern again so as to represent an image that was previously hidden in the object. Thus a recognized sign appears as a part of that which represents the object, namely, part of the *relate*.

A definition of *sign* consonant with such an analysis would be found in one of Peirce's late drafts (MS 849: 4-5, 9, 1911):

> The word Sign, as it will here be used, denotes any object of thought which excites any kind of mental action, whether voluntary or not, concerning something otherwise recognized. This definition has encountered the objection that a Sign may refer to itself. The definition, however, does not deny this. Provided the Sign refers principally to something else, it may refer to itself in order thereby to single out that Principal Object.

> Every sign denotes something, and anything it denotes is termed an *Object* of it. [...] I term the idea or mental action that a Sign excites and which it causes the interpreter to attribute to the Object or Objects of it, its *Interpretant*.

Of course features of an ink-blot may not necessarily excite a mental action, since in an extreme case no interpretation might follow. But voluntary or not, if an interpretation is formed, a sign is at work. Further, if a sign is part of the relate, as I noted above, it is clear that the relate represents its own features, although the mental action will not normally stop with the trivial interpretation, 'these are features of an ink-blot.' Normally, a more developed interpretation will arise, through which the correlate evolves into an object with definite attributes.

5.2.2   Definition 2 in Light of the *New List*

It is not difficult to see that the way a sign works is essentially the same as proposition formation analyzed in the *New List*. When the features of the ink fluidize and interact with each other, they are in mutual *comparison* and *contrast*, on the one hand, whereas when they fly back into the pattern and determine the appearing, a *quality* is asserted *of* the figure, which is the same as the *embodiment* of a quality. The working of signs, although undeniably subtle, is quite dramatic in some sense, too, since changing physical conditions, such as the brightness of the room, would not affect the resulting image as much as an interpretation would.

The phenomenon in question is undeniably fugitive. For example, the *ground* is considered, Peirce says, in the sense "in which when a man continues to think anything, say for a tenth of a second, in so far as the thought continues to agree with itself during

that time, that is to have a *like* content, it is the same idea, and is not at each instant of the interval a new idea" (CP 2.228, c.1897). But in general, the *ground* is much easier to recognize than the transient *correlate* and the mediating *interpretant*. The phenomenon to be analyzed becomes extremely elusive as we follow down the chain of conceptions toward *substance*.[5]

5.3 Sign in the Triadic Relation

5.3.1 Sign as 'a First': Definition 3 (1903)

As long as the basic analysis is kept in place, it is not too surprising that Peirce's definition of *sign* remains stable throughout his writings. Here is another well-known definition, which might seem a little different from the previous two definitions (EP 2: 272-273, 1903 [CP 2.274]):

> A *Sign*, or *Representamen*, is a First which stands in such a genuine triadic relation to a Second, called its *Object*, as to be capable of determining a Third, called its *Interpretant*, to assume the same triadic relation to its Object in which it stands itself to the same Object.

It might be asked, why is "*Sign*" said to be "a First"? Was not *Representamen* the *third* kind of *supposable object* in the *New List*? The straightforward reply is that in terms of *categories*, sign or representamen corresponds to the *third* species, but within a specific sign relation, it is simply seen as the *first* member of the triadic relation.

In general, if X represents Y, this means that Y is seen through X, or more simply, X is a sign of Y. But Y, namely, that which is seen through the sign, is the *correlate* or *object*, whereas X, namely, that through which we see the correlate or object, is the *relate*. If a person, for example, reads off the direction of wind through the motion of a weathercock, the weathercock is the *relate*, the wind is the correlate. Hence a sign is always the relate, or better a part of the relate, which makes it the *first* member of the triadic relation, or 'a First' in Peirce's definition above.

5.3.2 Sign as the 'First Correlate': Definition 4

From a more logical point of view , we could also say, and quite simply, that in view of the linguistic scheme 'X represents Y to Z,' X is the "First" or sign, Y is the "Second" or object, Z is the "Third" or interpretant. It is clear that if we regard representation in this fashion as an ordered triplet $\langle X, Y, Z \rangle$, the terminological distinction among *relate*, *correlate*, and *interpretant* becomes nominal. Hence Peirce would also say that the sign or representamen is the "First Correlate," the object the "Second Correlate," and the interpretant the "Third Correlate"(EP 2: 290, 1903 [CP 2.242]):

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[5] Peirce is of course not alone in seeing the elusiveness of the phenomenon. Kant famously says that synthesis in general is an "effect of the imagination [Wirkung der Einbildungskraft]" without which "we should have no cognition whatsoever," but "which we are so scarcely even conscious of"(A78/B103). On this score Peirce is in agreement with Kant.

A *Representamen* is the First Correlate [relate] of a triadic relation, the Second Correlate being termed its *Object*, and the possible Third Correlate being termed its *Interpretant*, by which triadic relation the possible Interpretant [Third Correlate] is determined to be the First Correlate [another relate] of the same triadic relation to the same Object, and for some [further] possible Interpretant.

For simplicity's sake I have inserted 'relate' instead of 'part of the relate,' and made clear that (1) the "Third Correlate" or *Interpretant* becomes a "First Correlate" again, which is accordingly a second relate or sign, and that (2) a further Interpretant is therefore anticipated.

5.3.3 Definition 3 and 4 in Light of the *New List*

Yet such a view was pursued in the *New List* as well in that a stream of correlates immediately implies streams of relates and interpretants. For in the stream of correlates, each phase, through which preceding phases are seen, is a *relate*, or *sign*, the accumulation of phases so seen through constitutes the *correlate*, or *object*, of the *sign*. The phase emerging as the synthesis of the relate and the correlate can be seen as the *interpretant*, although it is more accurate to say that the interpretant is integrated into the resulting synthetic phase. In each triadic relation, accordingly, we can take the sign as the "First Correlate," the object as the "Second Correlate," and the interpretant as the "Third Correlate." Hence if we wish to highlight the *stream of correlates* by denoting an arbitrary relate C_k, the object would be C_{k-1}, and the interpretant C_{k+1}. An intuitive illustration is presented below (Figure 5.1).
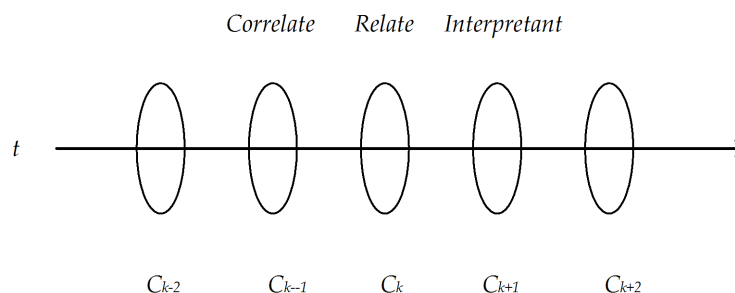
Figure 5.1: The stream of correlates. The sign is the first of the three interrelated correlates.

In this scheme the synthesis of C_k and C_{k-1}, through the working of C_k itself, yields C_{k+1}. Sliding C_k along the temporal axis, therefore, every correlate can be seen as a sign, object, or interpretant. The sign relation is the ordered triplet $\langle C_k, C_{k-1}, C_{k+1} \rangle$.

But how should we figure back would this explanation into the consideration of proposition formation? Peirce maps the propositional structure to the triadic sign relation as follows (EP 2: 379, 1906 [CP 5.553]):

A proposition has a subject (or set of subjects) and a predicate. The subject is a sign; the predicate is a sign; and the proposition is a sign that the predicate is a sign of that which the subject is a sign.

If we take the *subject* of the proposition as C_k, the object is C_{k-1}, while the predicate C_{k+1} interprets the relation between the subject and object by differentiating a quality from C_{k-1}. If we slide our perspective toward the future and take the *predicate* as C_k, then the subject of the proposition is C_{k-1}, while the proposition C_{k+1} interprets the relation between the predicate and subject by attributing a quality to C_{k-1}, i.e. the subject of the proposition, which is itself a sign of the object, which we can denote C_{k-2}. This second triadic process is reunification. Of course the proposition, C_{k+1}, in its turn gives rise to further interpretants (Figure 5.2).
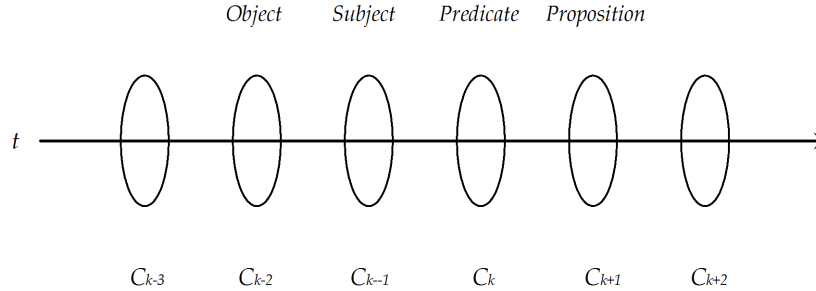
Figure 5.2: Looking at the predicate as the first correlate or sign.

In overtly viewing the triadic relation as a *process*, we are adopting a genetic point of view, which does not unfairly interpret Peirce's definition of signs. In fact definitions 2 and 5 examined above take a genetic viewpoint, such that they reflect a kind of thought-process Peirce has in mind, and for this reason the definitions have some intuitive appeal. On the other hand, definitions 3 and 4 are intended as logical definitions, which designate nothing but the triadic structure $\langle C_k, C_{k-1}, C_{k+1} \rangle$. On such logical definitions, *semiosis* refers to *any* such ordered triplet. I note in passing that definition 1 is more neutral.

The motivation for the logical definitions is three-fold. First, they adhere to the unphysiological view of logic. Second, they state what a sign is with *full generality*. This becomes important below. Third, they prevent us from making a simple but grave error regarding the sign process: It is *not* the case that there is first, in the temporal sense,

an *object*, then a *sign*, and finally the *interpretant*. Only the simultaneous presence of all three correlates can form a semiosis.

This can be made clear if we consider proposition formation. For it is *not* that we first decide what the *subject* is, wait for a while, then consider what the *predicate* is, take a second breath, and all of a sudden decide to put the two parts together to make up a *proposition*. In the quick recognition of a red object on the table, for example, it is clear that the subject, predicate, and proposition, ought to grow and mature *together*.

From a logical standpoint, therefore, the genetic depth as represented in the previous figure had better be collapsed and be represented like the one below: We grasps the object through the proposition, meaning that we see the object though the quality expressed by the predicate, where the quality is asserted of the subject, which in turn points to the object. Note that the outer frames must be there whenever the inner frames are formed. This is because the inner frames, the more immediate frames, can *not* be prescinded from the outer or more mediate frames.
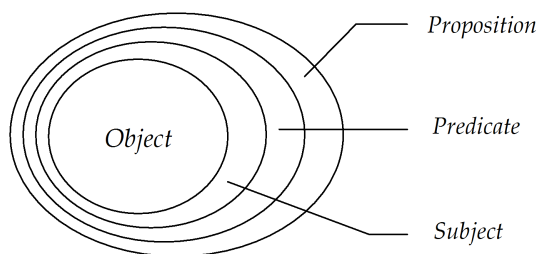
Figure 5.3: Collapsing the genetic depth of proposition formation. "The subject is a sign; the predicate is a sign; and the proposition is a sign that the predicate is a sign of that which the subject is a sign."

On such an analysis, it is also important to note that distinct kinds of representations or signs constitute the propositional structure. The *subject* is an *index*, the predicate is an *icon*, and the proposition is a *symbol*.[6] The contrast between *index* and *icon* parallels the subject-predicate asymmetry we saw above. In the *New List*, therefore, Peirce derives "three kinds of representations"(W 2: 56.5) with regard to the relations in which they stand to their objects. We will consider this after a few more observations are made.

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[6] This view is commonly expressed in Peirce's writings. For convenient reference, see CP 2.438 and 2.442, c.1893; EP 2: 19-20, 1895; EP 2: 279, 1903 [CP 2.316]; CP 5.76, 1903; CP 4.572 [p.462], 1906. Peirce also says that the *subject* is an "*index*" or "*external element*" of the proposition (MS 594: 13, 1893), while the *predicate* is an "idea" or the "*internal* element"(MS 791: 2, undated [c.1893]), hence reflecting the internalization process of proposition formation.

5.4 The Object of Sign

5.4.1 Originals of the Sign: Definition 5 (c.1907-1911)

If we recall the derivation of the conception of *Representation* in the *New List*, it is perspicuous that there is absolutely no *representamen* that does not refer to a correlate, or its object. This means that it is illogical for Peirce to think of a sign without an object, as long as one understands the sign relation. Note that of all Peirce's writings, it is only the *New List* that explains in detail why a *representamen* or *sign* necessarily has *its* object. For we only need to say that *Representamen* cannot be prescinded from *Relate* or Quale.

It might be objected, however, that we can instantaneously invent a sign that has no object. If we are asked what a Norwegian dragon is, or who the present king of France is, the referents seem absent. But what the *New List* argues for is that such commonplace objections overlook the simple fact that one cannot make up mental images in a hundredth of a second. Ir order to have thoughts about Norwegian dragons and French kings, certain qualities must be attributed to them so that they are distinguishable from the character-less *It* as well as from each other.

Further, what we normally believe to perceive definitely are all interpreted objects, namely the synthetic picture of correlates brought forward to the mind through the effects of interpretants. But from this it is readily observed that the effects of the interpretants can temporarily overwrite, so to speak, the outward features of the original object. If I am obsessed by the idea that there are no goats in North America, for example, I might judge a goat on a farm to be a sheep and report that I saw a sheep, whereas if I attend to the animal with a less biased view, I might just perceive that it is in fact a goat. But obviously, my interpretation does not render a goat a sheep. The interpretant of a sign is hardly the same as the object of the sign.

In the following manuscript, therefore, Peirce not only draws our attention to the distinction between 'object' and 'interpretant,' but also calls the objects of a sign the "originals" of the sign (MS 277: 77, c.1907-1910):

> Of the distinction between the Objects, or better the "Originals" and the Interpretant of a Sign. By A "*Sign*" is meant any Ens which is determined by a single Object or a set of Objects, called originals, all other than the Sign itself, and in its turn is, capable of determining in a Mind something called its Interpretant, and that in such a way that the latter Mind is thereby mediately determined to some conformity to the Original or Set of Originals. This is particularly intended to define (very imperfectly) a Complete Sign.

Note that Peirce talks about "objects," "originals," and "Set of Originals," all in plural form, and "a Sign" constantly in singular form. As readily noticed, objects are generally construed in pluralities, which we remarked earlier in connection with the *New List*. The reason the plurality is not always made explicit in Peirce's definitions of sign is that it will complicate the basic analysis. Or as Peirce says later: "Signs will be treated as

having but one object each for the sake of dividing difficulties of the study"(CP 2.230, 1910).

5.4.2 Definition 5 in Light of the *New List*

The idea important in the above definition is that the triplet $\langle C_k, C_{k-1}, C_{k+1} \rangle$ is *ordered*, where it is always C_{k-1}, the object or the second correlate, that determines C_k, the sign, which in turn determines C_{k+1}, the interpretant, in such a way that the interpretant stands in the same relation as the sign stands in to its object.

The reason such care is needed for the order of the triplet is that the streams of correlates, interpretants, and relates, can at times blur the functional distinctions among them. For if a sign is part of the relate, which in turn is a sign, do we not just have a stream of signs? The answer is: (1) *Yes*, only in the sense that each correlate *may* act as a sign; (2) *No*, in the sense that when each correlate so acts, it requires *its* object and interpretant, which are functionally distinct from the sign. As a simple analogy, to say that each person in a row *may* act as an evil person to others would be very different from saying that all people in the row are actually evil to others.

When we focus on each sign in action, it is important to bear in mind that representation is the conception that directly holds the manifold of impressions together, reducing it to higher unity. In this regard a representamen is almost attached to the manifold itself, just being next to *It*, such that it makes no sense in Peirce's framework to hold that a representamen can be floating around without the manifold in which streams of correlates originate. Seen in this light, the reason why Peirce calls the objects of a sign its *originals* is quite obvious.

5.5 The Plurality of Objects and the Logic of Relatives

5.5.1 Relational Predicates

The *plurality* of objects of a sign is more important than it might appear. There is a relatively wide-spread perception among researchers of Peirce that around the time of the *New List* Peirce thought that propositions are all of the form 'S is P.' The best known is perhaps Murphey again, who contended that in the *New List* Peirce "assumes that all propositions are fundamentally of the subject-predicate type" and that the "theories of the categories, cognition, and reality had all to be reworked so as to make them consistent with the new logic."[7] By "new logic," Murphey means Peirce's *logic of relatives*, that is, versions of formal logic with *relations*, which was developed by Peirce after the 1870's.

Such a reading of the *New List*, however, is refuted by more than a few facts. First of all, the interpretation dramatically fails to account for Peirce's unvaryingly high evaluation of the *New List*. Nor does it cohere with Peirce's own explanation of the

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[7] Murphey, *The Development of Peirce's Philosophy*, pp. 65f., 133, and 153, 1993.

relationship between the *New List* and his formal logic with relations. Peirce writes (MS 439: 20, 1898 [NEM 4: 334]):

> Having in 1867 made out the three categories [Quality, Relation, and Representation], various facts proved to me beyond a doubt that my system of formal logic was still incomplete.

This suggests that it was in light of his theory of categories, which is general logic in Peirce's sense, that he started to see a larger system of formal logic, not the other way round. But there is no great surprise in this since the copula of a proposition is regarded as "the verb"(W 2: 50.2) in the *New List*. Such an example as "murderer" and the "murdered" in §9 would require a predicate with two variables, say 'Mxy,' for its formalization. Or we can just take another proposition considered in §15 of the *New List*: "Whatever is the half of anything is less than that of which it is the half"(W 2: 58.9-10). In a formal context, we may write over a suitable domain in contemporary notation,

$$\forall x \forall y ((x > 0 \land y > 0 \land x + x = y) \rightarrow \exists z (z + x = y \land z > 0)),^8$$

which says, in a little more familiar language, 'for all positive x and positive y, if Hxy, then Lxy,' where we read 'Hxy' as 'x is half of y' and 'Lxy' as 'x is less than y.' Although the sentence itself is not too interesting, trivially true if we set $z = x$, it suffices to show that relations are dealt with in the *New List*. Further, and most importantly, *representation* in the *New List* is regarded as a 3-place predicate by Peirce. There are also manuscripts around the time of the *New List*, such as "Appendix No.2," in which Peirce considers logical formalism with relations, in addition to his paper "On an Improvement in Boole's Calculus of Logic"(W 2: 12-23, 1867), which was presented to the American Academy of Arts and Sciences prior to the *New List*. The view that the lack of the logic of relatives impaired Peirce's theory of categories confesses that the gist of the work is simply missed.[9]

5.5.2 Relations and the Object-Complex

A misinterpretation of this kind tends to arise from oversimplifying the nature of propositions considered by Peirce. For we could ask, what are the *objects* of the proposition in the last example, when seen from Peirce's perspective? We have *at least* such partial object-complexes as $\langle x, 0 \rangle$, $\langle y, 0 \rangle$, $\langle x, x, y \rangle$, $\langle z, x, y \rangle$, $\langle z, 0 \rangle$, in addition to the objects of each quantified variable, predicate symbol, the constant 0, parenthesis, and so on. As the eye scans over and grasps the proposition, a whole object-complex also emerges as the *object* of the entire proposition. Hence even in a much simpler example, such as the proposition "Cain killed Abel," Peirce writes as follows (CP 2.230, c.1910):

> A sign may have more than one Object. Thus, the sentence "Cain killed Abel," which is a Sign, refers at least as much to Abel as to Cain, even if it

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[8] Obvious parentheses are ommited.

[9] See also **7.4.2** (p.121f.) for Peirce's later comment on the *logic of relatives* in the *New List*.

be not regarded as it should, as having "*a killing*" as a third Object. But the set of objects may be regarded as making up one complex Object.

Intuitively speaking, the *object* of a *sign* in Peirce's sense can be defined as 'that which the sign informs about.' Then the act of killing is certainly an object of the proposition "Cain killed Abel," as much as are the individuals conceived of as Cain and Abel. In a proposition we certainly do not perceive all the parts of an object-complex, in which numerous correlates are compared, contrasted, connected, and hence interpreted in every passing moment. But to frame the idea of *representation* in such a way was surely one of the most central aims of the *New List.*

It is with such complexity in mind that Peirce would invite us to think what a *sign* is (EP 2: 402-403, 1904):

> Now how would you define a sign, Reader? I do not ask how the word is arbitrarily used. I want a definition as a zoologist would give of a fish, or a chemist of an aliphatic or an aromatic body,— an analysis of the essential nature of a sign, if the word is to be used as applicable to everything which the most general science of semeiotic must regard as its business to study.

Peirce defines *sign* probably a few hundred times in his published and unpublished writings. But regarding objects of sign, we must bear in mind that "a Sign may have any number of them"(MS 637: 39, 1909). The reason I have stressed the plurality of objects in this section is twofold. First, it is easy to overlook such plurality because it is not logically required for the *definition* of sign. For what we need is *at least one object.* Second, if "objects indicated by the subject" of a proposition are, as Peirce says in the *New List*, "always potentially a plurality, — at least, of phases or appearances," such that they are described by the predicate as "related to one another"(W 2: 57.33-34), it is obvious that a logic of relatives underlies the entire project of the *New List.*

Chapter 6

New List §14

6.1   A Problem: Sign and Causation

In the early 1870's, Peirce works out more than a few definitions of *representation* or *sign*, which are essentially all the same.[1] But a quick look at this period is worthwhile, since Peirce alludes to the *causal connection* between *sign* and its *object*, a view that might seem missing in the *New List*. As I shall argue below, however, the idea is already unmistakably present in the *New List* but relatively hard to notice, since the kind of 'causal' link considered by Peirce in and after the *New List* already involves a bold transformation of the very concept of *causation*.

In a draft of 1873 entitled "On Representations," Peirce considers three conditions that every sign has to meet. The first is that a sign has to possess some quality of its own. The second is the 'causal' connection between sign and its object. The third condition has it that a sign should address itself to some mind so as to produce an interpretant of the object of which it is a sign. The first condition is easy. If a sign is a relate, or part of a relate, it has to have its own qualitative feature(s). The third condition is now familiar to us. Hence we shall concentrate on the second 'causal' condition in this section, which is explained by Peirce as follows. The passage is cited at length so as not to equivocate the context (W 3: 62, 1873):

> A representation [representamen] is an object which stands for another so that an experience of the former affords us a knowledge of the latter. There are three essential conditions to which every representation must conform. It must in the first place like any other object have qualities independent of its meaning. [...] Thus the word 'man' as printed, has three letters; these letters have certain shapes, and are black. [...] In the 2nd place a representation [representamen] must have a real causal connection with its object. If a weathercock indicates the direction of the wind it is because the

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[1] With regard to terminology in the early 1870's, Peirce freely switches between *representation* and *sign* in W 3: 62, 65-66, 77, 82, and *passim* (all from 1873). [For the distinction between *sign* and *representamen*, see **7.3** (p.117f.).

wind really turns it around. If the portrait of the man of a past generation tells me how he looked it is because his appearance really determined the appearance of the picture by a train of causation, acting through the mind of the painter.

In the first line, Peirce uses the word 'representation' instead of 'representamen.' The convention, as explained by Peirce later, is that when 'representamen' as a formal object of thought need not be distinguished from the act or working of representation, we can just use the two words interchangeably.[2] This is not a simple blunder made by Peirce. For the distinction between *representamen* and *representation* is not particularly significant as long as a *functionalist* standpoint is pursued: What a *representamen* is consists strictly in its *function* or *act*. Besides, that *representations* can themselves become *objects* of thought is a thesis basic to Kant and Peirce's position.

The view, on the other hand, that there should be some 'causal' link between representation and its object might sound a little new. What we may first note is that since every representamen involves a reference to a *correlate*, this is but a restatement of the idea that every sign has *its* object. But the more significant matter is this: what is the nature of the *causal determination* Peirce has in mind when he says that a sign is *determined* by its object?

It turns out that there is a crucial insight in §14 of the *New List*, where Peirce sets the very concept of causation under completely new light. After this point, physical causation becomes a particular form of a more general type of causation, which we may term *semeiotic causation*. Note that the thesis itself was plain enough to Peirce, because a sign is a *formal object* in his theory, meaning that the relation between a sign and its object cannot be the same as a relation between, for instance, two physical objects.

6.2 Differentiating Index from Icon

The transformation of thought regarding *causation* is veiled in Peirce's classification of *representations*, or *signs*, into three classes, namely, *icon*, *index*, and *symbol*, which classification follows the detailed analysis of proposition formation in the *New List*. What I have just called *semeiotic causation* is a consequence of this classification, which draws its central insight from the distinction between *icon* and *index*.

The argument of §14 of the *New List* remains as dense as before. It is, therefore, helpful to note in advance that Peirce's argument consists of two steps. First, Peirce will differentiate *index* from *icon*. Second, he will differentiate *symbol* from *icon* and *index*. The first step is explained by Peirce in fewer than hundred fifty words, the second step in fewer than ninety words. The current section considers the first step, while the second step will be considered in section 9.

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[2] In Peirce's words: "When it is desired to distinguish between that which represents and the act or relation of representing, the former may be termed the 'representamen,' the latter 'representation'." See Baldwin (ed.), *Dictionary of Philosophy and Psychology*, vol.2, p.464, 1902 [CP 2.273].

As a matter of terminology, I will not distinguish between 'representation' and 'sign' or between 'likeness' and 'icon' for the sake of simplicity. In doing so we shall simply follow Max Fisch,[3] the editors of the *Collected Papers of Charles Sanders Peirce*,[4] and Peirce's own suggestion.[5] I have briefly mentioned in the previous section that *representation* and *sign* are not always distinguished by Peirce. The same applies to *likeness* and *icon*, since these words appear as interchangeable terms in Peirce's writings up to at least 1911.

6.2.1 Peirce's Text

The first step of the argument occupies roughly two thirds of §14. The theoretical consideration is done in just one sentence, from which Peirce proceeds to declare that there are two kinds of 'relation.' The last two paragraphs of the citation below are additional explanations made by Peirce, which I shall return to in section 6.2.5. Here is the text that differentiates *Index* from *Icon* (W 2: 55.20-34 [CP 1.558]):

> §14. A quality may have a special determination which prevents its being prescinded from reference to a correlate. Hence there are two kinds of relation.
>
> 1st. That of relates whose reference to a ground is a prescindible or internal quality.
>
> 2d. That of relates whose reference to a ground is an unprescindible or relative quality.
>
> In the former case [the '1st'], the relation is a mere *concurrence* of the correlates in one character, and [therefore] the relate and correlate are not [sharply] distinguished. In the latter case [the '2d'] the correlate is set over against the relate, and there is in some sense an *opposition*.
>
> Relates of the first kind are brought into relation simply by their agreement. But mere disagreement (unrecognized) does not constitute relation, and therefore relates of the second kind are only brought into relation by correspondence in fact.

This is the entire text that purports to show that there are, to this point, exactly two kinds of *representations*, or *signs*, which will be termed *likeness* or *icon*, on the one hand, and *index*, on the other. Note that the first sentence of §14 is the only theoretical explanation Peirce offers.

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[3] Fisch, *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, p.324.

[4] See the editorial notes on p. 295 of the *Collected Papers*, volume 1.

[5] More precisely, Peirce writes: 'In the original publication of this division, in 1867, the term "representamen" was employed in the sense of a sign in general, while "sign" was taken as a synonym of *index*, and an *Icon* was termed a "likeness"'(*The Monist*, vol.XVI, no.4, p.495, 1906 [CP 4.531n1 drops the second comma, and prints '*Index*' instead of '*index*']). [cf. MS 295: 3, c.1906; MS 292: 9, c.1906; and CP 8.335, 1904.]

6.2.2 The Idea of the Argument

In order to decipher Peirce's view, we need to remind ourselves that a *quality* in the *New List* refers to the dynamic attribution of an abstract property, called the *ground*, to an underlying substance we are conscious of in a proposition. If the proposition is, "This stove is black," the predicative part 'is black' expresses the attribution of *blackness* to the stove, which Peirce analyzed as a flashing *embodiment*. If we start with a proposition, therefore, at least some such quality, real or fictive, is represented. The representation of a quality in this broadest sense gives rise to the class of representations called *icons*. Hence every *sign* is at least an *icon*.

This argument is based upon the observation that *relation* is never prescindable from *quality*, but *quality* may or may not be prescindable from *relation*. The point was carefully phrased by Peirce in the following way: "Reference to a correlate [Relation] cannot be prescinded from reference to a ground [Quality]; but reference to a ground *may* [or may not] be prescinded from reference to a correlate" (W 2: 53.13-15; emphasis added). Thus given that a *quality* is expressed in a proposition, there will be two cases to consider. I repeat part of the text above (W 2:55.21-26):

> §14. A quality may have a special determination which prevents its being prescinded from reference to a correlate [relation]. Hence there are two kinds of relation.
>
> 1st. That of relates [signs] whose reference to a ground [quality] is prescindible or internal quality.
>
> 2d. That of relates [signs] whose reference to a ground [quality] is an unprescindible or relative quality.

In both cases "relates" can be taken to mean *signs* as I have indicated in the brackets. The *prescision relation* then becomes important. The idea underlying the consideration is that the more mediate or abstract part of the object-complex can be *attended to* or definitely comprehended to the *neglect of* the more immediate part, but the more immediate (hence lower in the categorial hierarchy) part cannot be definitely comprehended to the neglect of the more mediate part. Accordingly, Peirce says that a relation "cannot," that is *never*, be prescinded from quality, but quality "*may be* prescinded"(my emphasis) from relation. In other words, it is also possible that quality may *not* be prescinded from relation. Note that *quality* is considered in terms of two subcases.

Thus what the first sentence of §14 says is this: What if, for some reason, a quality cannot be prescinded from relation? This means that, by the *definition* of prescision, the quality can *not* be definitely comprehended to the neglect of the relation in which the quality stands to a correlate. When this happens, Peirce says that the quality has "a special determination," whence it is differentiated into the "2d" case. Now since the whole consideration is intended to introduce the differentiation of *index* from *icon*, let us first examine what this "2d" case of *index* says, by taking the familiar example of a weathercock considered as an *index* of wind. After this, the same weathercock example will be used to consider the "1st" case as well.

6.2.3 The Concept of Index

So suppose I see my weathercock through the window of my house. When it is working, it is a sign of the direction of the wind. I think, for example, that there is a wind blowing along the driveway in the direction the weathercock heads. The *directedness* of the weathercock, its heading in a certain direction in response to the wind, is the essential quality of the sign, in the sense of "quality" Peirce talks about in the first sentence of §14. As explained earlier, we may regard the weathercock to be the 'relate,' namely the sign, and the wind, its correlate. In order to see what an *index* is, we consider the *prescision relation*.

 If we attend to the *directedness* of the weathercock to the neglect of the relation between the weathercock and the wind, the *directedness* no longer makes sense, because without that particular relation, we will have to think that the weathercock is moving in some random way unrelated to the wind. It is important to see that this is perfectly possible. For instance, if my weathercock had been replaced by a fake weathercock with an internal motor, it may have been turning around for amusement not serving as a sign of the wind. Obviously, I cannot tell if this is *not* the case, by just watching the motion of the weathercock through my window. This means that the very quality of *directedness* I see in the weathercock vanishes, if that *relation* is neglected. Thus the quality of *directedness* cannot be *prescinded* from the *relation* in which the relate, the weathercock, and the correlate, the wind, stand. If we look at Peirce's passage again (W 2: 55.28), Peirce says for this reason that the quality is a "relative quality." This means that the *relation* between the relate and correlate is essential to the very nature of the quality considered. This is what Peirce says in the "2d case," and a sign with such a "relative quality" is termed *index*.

6.2.4 The Concept of Icon

Now we turn to the "1st" (W 2: 55.25) case. Suppose I happen to see another weathercock in my neighbor's yard, which appears very similar to the first one. After a couple of seconds I notice that it is the similar colors of the two weathercocks that make them look alike. In such a case I am conscious of a pair of objects in which two similar colors are brought together in comparison. As before we must consider the *prescision relation*. Let the color of my weathercock be the quality I attend to, and remove the consciousness of that *paring relation*. Clearly, this does not alter the color of my weathercock at all, since what I have before my mind remains exactly the same. In such a case Peirce proposes to regard the quality as non-relative, or internal, since it can be attended to or definitely comprehended to the neglect of the relation in which the relate, one of the two similar colors, and the correlate, the other color, stand. This is, therefore, the case in which the quality is "prescindible" from the relation or 'reference to a correlate.' If we look at Peirce's passage again, he says for this reason that the quality is "internal" (W 2: 55.26) to the relate. Since the quality of the sign is prescindible from the relation, it can be said to only depend on its own nature, and such a sign is termed *icon* (or *likeness* in the *New List*).

6.2.5 Peirce's Explanation of Icon and Index

We can now return to the middle and last parts of the text presented in **6.2.1**, where Peirce adds a brief remark. With regard to the "1st" and "2d" cases, Peirce states as follows (W 2: 55.27-30 [CP 1.558]):

> In the former case [the '1st'], the relation is a mere *concurrence* of the correlates in one character, and [therefore] the relate and correlate are not [sharply] distinguished. In the latter case [the '2d'] the correlate is set over against the relate, and there is in some sense an *opposition.*

To see what the first sentence says, we may consider a Husserlian example of the pattern of a polka-dot necktie. When we perceive such a tie, the slightly different but very similar colors of the detached dots will instantly merge together and form a single quality of interrelated dots. To use Peirce's favorite expression, we may say that the colors of the individual dots become 'welded together' although the dots remain held apart equidistantly from each other. Take one dot as the relate, through which we see the other dots, or the 'correlates.' We do perceive the dots in relation to each other, which is why the dots work *together* as forming one unified pattern. But what is the nature of this *relation* in which the dots stand to each other? Clearly, we can prescind the relate — the one dot we focus upon — from its *relation* to other dots without changing its quality. Thus the "relation" is "a mere *concurrence* of the correlates in one character," and "the relate and correlate are not [sharply] distinguished," for the dots are welded together in one pattern or "character."

On the other hand, the second sentence of the citation above is better understood when taken together with the last part of Peirce's explanation. Here is what Peirce said (W 2: 55.33-36 [CP 1.558]):

> Relates of the first kind [icons] are brought into relation [with correlates] simply by their agreement [in some qualitative respect]. But mere disagreement (unrecognized) does not constitute relation, and therefore relates of the second kind [indices] are only brought into relation by correspondence in fact.

The first sentence needs no explanation. But the second sentence moves fast. Peirce considers a situation in which there is no consciously recognized agreement among things, which are *nevertheless* brought together. The point is that, when the disagreement as such is unrecognized, no mind has brought them together as in the perception of a polka-dot pattern. But examples of this case abound. Most of the objects around us, say a cup and a pen, by no means share a recognized quality, but they accidentally sit together on the desk. Since their relations are not formed by virtue of any recognized agreement, Peirce simply says that we can characterize them as "correspondence in fact." This is why an indexical relation stands out conspicuously when there is but the slightest similarity between the relate and correlate(s). The relation is just 'brute fact,' as Peirce would put it. For this reason Peirce says that "there is in some sense

an *opposition*." The boundary between the colors of two polka-dots, for example, is felt as much blurred, whereas the boundary between a cup and a pen is felt sharp once recognized. In the latter "a sense of *opposition*" is involved.

6.2.6 Prescision Defines Icon and Index

What is the central idea in the differentiation of *index* from *icon*? No doubt, it is the high degree of generality of the method of *prescision*, not the naive or intuitive way of classifying signs into two kinds. Although we did use the weathercock as a familiar example, it is not that we first identify the weathercock as a fine example of an *index* and then seek for explanations and excuses for that identification. The kernel of the idea Peirce presents in §14 of the *New List* is to check if the represented quality is *prescindible* from the *relation* in which it stands to its object, or to its 'correlate.' If yes, then it is an *icon*. If no, it is not an *icon*, but an *index*, so far (we shall consider *symbol* below). It is this *prescision relation* that constitutes the proper distinction between *icon* and *index*.

But once this is observed, the account should come natural to readers of Peirce as well. It is for the same reason that a portrait is mainly an Icon while a photograph is mainly an Index. Note that a poorly focused photograph may resemble a person less than a well painted portrait, but the *degree* of such resemblance is inessential to the theoretical differentiation of the two kinds of signs. We cannot base the proper definitions of Icon and Index upon how much you or I feel that a sign resembles its object. It is the *prescision relation* that *defines* the distinction between *icon* and *index*.

6.2.7 Causal and Non-causal Relations

With regard to the distinction between *icon* and *index*, it has to be emphasized that in the case of *icon* the two colors of the weathercocks are seen in a relation without being causally related to each other. The very heart of the analysis is that similarity, or some sort of qualitative likeness, is sufficient to put two things into a relation. It is a loose and primitive relation, of course, a "mere *concurrence*" of some quality in two or more things, where things mirror each other, as it were, without the one being in contact with the other. Apparently, none of the dots in a polka-dot tie is a 'cause' of other dots, while they indubitably constitute an object-complex exhibiting a form of interrelatedness.

We may also add that in the actual world relations based upon similarity of qualities abound. For it is the simplest way in which multiple things can be associated. If I think that three historic events, one in France, another in Brazil, and yet another in China, resemble each other, of course there need not be any causal relation between them. Most animals are able to associate things only because they are somehow similar. In Peirce's view it is just a very basic kind of relation that representations involve. In recollection of the *New List*, therefore, Peirce explains as follows (CP 1.566, c.1899):

> I observed in 1867 that dual relations [Relations] are of two kinds according
> as they are or are not constituted by the relate and correlate possessing

non-relative characters. This is correct. Two blue objects are *ipso facto* in relation to one another [by intrinsically resembling each other].

The most significant contention is that if a relate is an *icon* of a correlate, therefore, the relate represents the correlate without assuming *any* causal interaction. Thus starting with the general conception of quality, Peirce has introduced a class of non-causal representations and a class of potentially causal representations, which correspond to *icons* and *indices*, respectively. That is, *icons* represent objects but are causally detached from them, on the one hand, while causal relations constitute a subclass of indexical relations, since 'correspondence in fact' is far broader than what we usually call *causal relations* (Figure 6.1). Further characteristics of icon and index will be discussed below, after taking a look at Peirce's derivation of *symbol* in the *New List*.
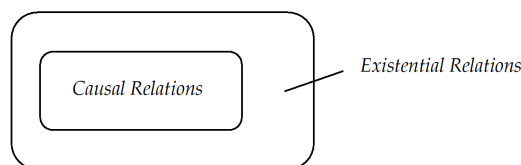
Figure 6.1: Causal relations form a subset of indexical relations.

6.3   The Derivation of Symbol

6.3.1   Peirce's Text

The second step of consideration in §14 differentiates *symbol* from the two representations already obtained, namely from *icon* and *index*. The following is Peirce's entire argument (W 2: 55.35-56.12 [CP 1.558]):

> A reference to a ground [quality] may also be such that it cannot be prescinded from a reference to an interpretant [representation]. In this case it may be termed an *imputed* quality. If the reference of a relate to its ground [quality] can be prescinded from reference to an interpretant [representation], its relation to its correlate is a mere concurrence or community in the possession of a quality, and therefore the reference to a correlate [relation] can be prescinded from reference to an interpretant [representation]. It follows that there are three kinds of representations.
>
> 1st. Those whose relation to their objects is a mere community in some quality, and these representations may be termed *Likenesses* [Icons].

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2d. Those whose relation to their objects consists in a correspondence in fact, and these may be termed *Indices* or *Signs*.

3d. Those the ground of whose relation to their objects is an imputed character, which are the *general signs*, and these may be termed *Symbols*.

6.3.2 The Idea of the Argument

First, as before, we remind ourselves that a quality, the more mediate, is in principle prescindible from representation, the more immediate, since the shallower in the list is always prescindible from the deeper in the list. This does not work in the other way round because if we try to lift up the deeper structure, we will have to necessarily bring the superstructure together with it. Although the superstructure is generally prescindible from the deeper structures, Peirce considers, once more, in the first sentence quoted above: What if a quality cannot be prescinded from representation? That is, what if a quality, which is at the very surface in the hierarchy of the derived categories, is for some reason, so tightly connected to the deeper layer of representation, such that the quality cannot be prescinded from representation? Thus there are two cases to consider again.

The second sentence in **6.3.1** above considers the case in which a quality *can* be prescinded from representation. In this case Peirce quickly observes that if a quality survives prescision from an interpretation, this means that the quality is unaffected by the specific interpretation of the relation between the relate and correlate. Then its nature is not affected by the specific relation between the relate and correlate, from which it follows that the quality is internal to the relate. This is why Peirce almost repeats above, "its relation to its correlate is a mere concurrence or community in the possession of a quality,' which is nothing but the explanation of *icon* he stated earlier (W 2: 55.29-31). In other words, this first case simply reduces to *icon*. Therefore, such representation of a quality in a propositional structure will *not* give rise to a different kind of sign. Hence Peirce is done with the case where the quality *is* prescindible from representation.

The new case, therefore, is when a represented quality *cannot* be prescinded from representation. Note that (1) since *representation* is not prescindable from *relation*, such a sign has to be at least an *index*, and that (2) this is the only possible new case, since representation is already the deepest determination that *directly unites* substance. That is, nothing lies beneath *representation*, except for the *substance* itself to be united. Thus Peirce thinks that he only needs to label anew the last kind of representation. To repeat, this is the case in which a represented quality cannot be prescinded from reference to an interpretant, or in short from *representation*. Hence Peirce concludes that there are exactly "three kinds of representations," which are "*Likenesses* [Icons]," "*Indices* or *Signs*," and "*general signs*" or "symbols."

As we can readily observe, the differentiation of the three kinds of representation rests upon the fact that every proposition has a *ground*. Note that with regard to *symbol* Peirce is trying to characterize the relation of a "ground" to their *object* in the

condensed phrase "the ground of whose relation to their objects" above, whence he says that the ground is an "imputed character." A *symbol* is such a representation that *imputes* a quality to its object.

6.3.3 The Nature of Symbol

6.3.3.1 Symbol and the Prescision Relation

In order to characterize *symbol* further in Peirce's sense, it is best to compare it with the previous two kinds of signs. To summarize, the derivations were carried out in two steps: *index* was differentiated from *icon* in the fist step, while the second step differentiated *symbol* from *icon* and *index*. Figure below presents four diagrams that show how the *prescision relation* differentiates *index* from *icon*, and *symbol* from *index* and *icon*. The *heavy lines* indicate that the bonds between the represented quality and the more immediate categories are *tight* and hence *not* prescindible. The diagram third from the left corresponds to the case in which the quality *can* be prescinded from *representation*. That is, the representation reduces to *icon*, as we saw in the second paragraph of the previous section.

Icon	*Index*	*No New Sign*	*Symbol*
Quality	**Quality**	**Quality**	**Quality**
Relation	Relation	Relation	Relation
Representation	Representation	Representation	Representation
Internal Quality	*Relative Quality*		*Imputed Quality*
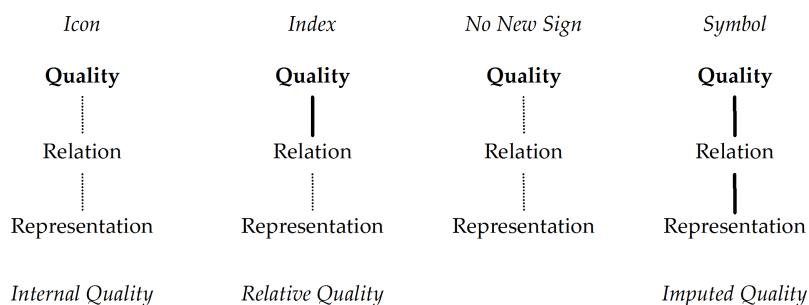
Figure 6.2: The derivations and the prescision relation. The heavy lines signify that the Quality cannot be prescinded from Relation or from Representation. Note that index and icon can be seen as *degenerate* forms of symbol with respect to the prescision relation illustrated by the heavy lines.

At this point, it is worth remarking that Peirce did *not* decide in advance that there should be three kinds of signs with regard to their relations to their objects. The *prescision relation* first distinguished *index* from *icon*, and then *symbol* from *icon* and *index*. To put it another way, the analysis of the *New List* forces that there are three kinds of representations, and no more than three. Note also, that it is *only* in the *New List* that Peirce rigorously demonstrates why there are *exactly* three kinds of representations or signs in relation to their objects. In his later writings, he discusses examples, gives formulations of the three signs, but no such rigorous demonstration is found.

Another important observation must be made. First, if we compare the structure of *symbol* with those of *index* and *icon*, we notice that *symbol* involves both an *index* and *icon* as partial structures. Second, if the structure of *index* is compared with that of *icon*, the former involves the simpler substructure of *icon*. The thesis that every *symbol* involves *index* and *icon* and that *index* involves *icon* is well-known to Peirce specialists, but the theoretical ground of the thesis is rarely discussed in literature.

6.3.3.2   Intuitive Illustration of Symbol

If a sign is a *symbol*, Peirce thinks that the qualitative respect in which it is related to its object is an "imputed character"(W 2: 56.11). What does this mean? The quickest way to grasp what Peirce is saying is to combine what we have observed up to this point with respect to categories. Figure 6.3 below collects our knowledge together.[6]
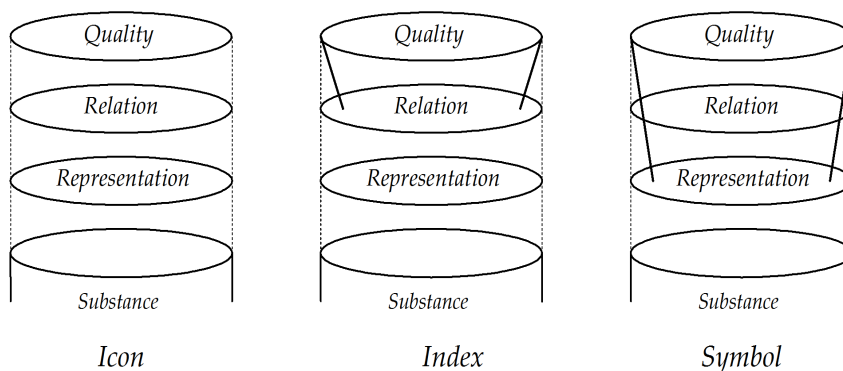
Figure 6.3: Icon, Index, and Symbol in the *New List*. The dotted lines on the sides signify that they all directly unite substance, while differing from each other in terms of the prescision relation.

An *icon*, as illustrated on the left, can be seen as a representation that refers its object to our mind without directly touching the layer of *Relation* beneath. This detached representation is visualized by the vertical dotted lines on the sides. Figuratively speaking, therefore, an *icon* only mirrors something below without actually reaching it, or ro use our previous terminology it stands in a *non-causal* relation with its object. This is why Peirce for instance stresses that an icon "really stands unconnected with them [objects]"(EP 2: 9, c.1894).

If, however, a quality is *not* prescindible from relation, the quality of the sign, being a "relative quality," strikes its root much deeper into the structure such that it comes into direct contact with the correlates on the level of *Relation*. As the second

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[6] Since *BEING* plays no role in this consideration, I will omit it from Figure 6.3 and Figure 6.4 below.

diagram illustrates, in this case the quality drops off much deeper into the middle layer, stretching toward the more immediate, although it does not deepen further. This is the *index*. Note that it *does* represent substance, but the represented quality does not depend on *Representation* since it is prescindable from it.

If, on the other hand, a represented quality is not prescindible from *Representation*, or reference to an interpretant, it descends even deeper toward the most immediate or external layer of *substance* as illustrated on the right. In this specific sense, *symbol* expresses the deepest or the most far-reaching kind of qualities among the three signs.

We may now recall three things about Peirce's categories: (1) a *quality* is a determination of substance in the form of attribution; (2) *correlates* are phases of objects; (3) *relation* is defined as 'reference to a correlate.' Based upon this, we can modify the model of symbol in Figure 6.3 above into a model like the one in Figure 6.4, by replacing the thin middle layer of *Relation* by phases of correlates, which constitute the *object* of the sign, or *symbol* in this case.
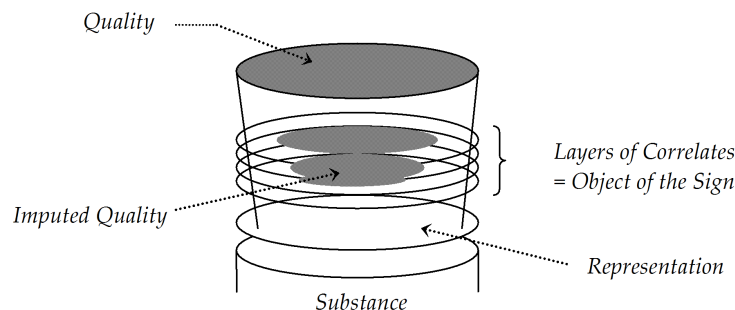
Figure 6.4: Intuitive Illustration of Symbol. The *Quality* represented by a *Symbol* is an *Imputed Character*.

As illustrated, the quality, whose abstracted content is the *ground*, does not merely reach the correlates beneath it but permeates them, as it were. This is why Peirce says that the quality, when seen in abstraction, is an "imputed character"(W 2: 56.11). Metaphorically speaking, the quality in the propositional structure drains down toward the layer of *Representation* by which it 'imputes' its own nuance to the correlates, namely to its 'object.' In this regard we may say that a *symbol* bottoms far deeper than *icons* and *indices*, so as to influence our world view by imputing its own character to the very root of experience.

To avoid confusion, however, it is to be noticed that *icons* and *indices* do respond to the deepest layer as well, since they are forms of *Representation*, which "unites directly the manifold of substance itself"(W 2: 54.30-31). In short, *icons* and *indices* do *not* fall short of directly uniting substance, but since the qualities they express are prescindable from reference to an interpretant, the qualities are not as deeply infused into substance

as in the case with *symbols*. In the case of *icon*, for example, it is merely a mirroring representation that bears detached affinity with the object.

Hence what we may underscore with regard to *symbol* is its *unique locus* in Peirce's theory of representations: *Symbol* is the deepest or the most far-reaching of the three kind of representations in terms of the *quality* it expresses as a sign. More specifically, *symbol* in the *New List* can be said to be a sign whose quality is *imputed* to its object. Further characterizations of the three signs will be given below.

6.4 Further Characterizations of Icon, Index, and Symbol

The theoretical classification of signs into *icon*, *index*, and *symbol* in the *New List* presents an argument Peirce never repeated elsewhere. In subsequent writings he takes pains to elaborate upon the nature of the thee kinds of signs, and also attempts to introduce further classifications, but it suffices for the purpose of this study to delimit our observation to the basic characterizations of *icon*, *index*, and *symbol*. This will give us a firmer grip on Peirce's philosophy of representations, before we consider the theory in full generality after chapter 7.

6.4.1 Characterization of Icon

By definition, an *icon* is a sign that represents its object simply by being *like* the object in some respect. I used the verb 'mirror' in previous sections, since the object is presented to the mind through an *icon* that resembles it. A painting of an object, such as a portrait, is a basic example of an *icon*, since we are referred to the portrayed person mirrored in the painting, which more or less resembles that person. A map is also an example of *icon*, although not exclusively so, since we are referred to the landscape through the corresponding image reproduced in two dimensions.

It is, however, important to bear in mind that an *icon* is a representation, and that *representation* is primarily a functional category for Peirce, not a *thing* or *physical object*. Hence Peirce attends to the working of the *icon* when he considers a painting (W 5: 163, 1885 [CP 3.362]):

> So contemplating a painting, there is a moment when we lose consciousness that it is not the thing, the distinction of the real and the copy disappears, and it is for the moment a pure dream — not any particular existence, and yet not general. At that moment we are contemplating an *icon*.[7]

It is misleading to say, therefore, that the physical painting of an object *is* an *icon*. For the sign appears when we see the correlate through it, the moment at which the painting and its object become one. If for instance I recognize Napoleon on the horse, the spatial distance between what I see on canvas and a historic figure I have in mind vanishes for a flashing moment, which is why I am able to see Napoleon in the painting. When this

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[7] Immediately after this sentence Peirce continues: "I have taken pains to make my distinction of icons, indices, and tokens [symbols] clear [in the *New List*]" (W 5: 163, 1885 [CP 3.363]).

happens, and only when this is an on-going experience, am I witnessing the working of an *icon*, by virtue of which the relate, the painting, becomes a transparent frame through which I see *Napoleon the man*. The *icon* is thus specific to the occasion, and is not a *general* or *universal* in this regard, but nor can it be said to have physical existence like the canvas, since it is a representing function toward the viewer. Concerning the nature of *icon*, therefore, Peirce also explains (CP 4.447, c.1903):

> It is of the nature of an appearance, and as such, strictly speaking, exists only in consciousness, although for convenience in ordinary parlance and when extreme precision is not called for, we extend the term *icon* to the outward objects which excite in consciousness the image itself.

Note the distinction Peirce draws between *icons* and *outward objects*. In the original sense icons are formal objects guiding the thought process, while it is justifiable to talk about objects as icons in an extended sense as long as the distinction is borne in mind. It is also easy to understand that a portrait *per se* is not an icon to a blind person or to creatures without visual perception. But if a creature with keen olfactory sense detects resemblance between a particular smell and its object, then the smell can be an icon of the object, although for humans this would be mostly beyond imagination. In any event it is useful to bear in mind that *icons* appear and vanish rapidly, or better become transparent, if we follow the strict definition given by Peirce. An 'iconic figure' in the looser sense, for example, is normally an object recognized as such through the effect of an icon.

Given the subtlety and complexity of such sign phenomena, it is to be noticed that something like a portrait is far from being a pure icon in terms of resemblance to its object. Such factors as angle, light effect, posing, clothing, metaphor, hidden messages — all sorts of things blend into the artist's brush. Hence qualifications should be made (CP 2.92, 1902):

> We say that the portrait of a person we have not seen is *convincing*. So far as, on the ground merely of what I see in it, I am led to form an idea of the person it represents, it is an Icon. But, in fact, it is not a pure Icon, because I am greatly influenced by knowing that it is an *effect*, through the artist, caused by the original's appearance [...]. Besides, I know that portraits have but the slightest resemblance to their originals, except in certain conventional respects, and after a conventional scale of values, etc.

Note that *resemblance* or *likeness* is a matter of degree. If we flip the letter 'b' around the horizontal axis and place it on the letter 'p,' and observe that 'b' resembles 'p,' there is a moment at which the distinction between the form of 'b' and that of 'p' disappears, and therefore establishes a connection between the two letters. In such a case a nearly pure icon, we might say, was at work. Euler's famous graph of the seven bridges in Königsberg, on the other hand, may count as an *icon*, but it hardly *resembles* the landscape of the city in the ordinary sense. Its purpose is to highlight how paths are connected in Königsberg by disregarding all but topological features of

the landscape. An Euler graph is yet an *icon* of the city, since what the graph presents to us is *prescindible* from the relation in which it stands to the actual landscape of the city.

6.4.2   Characterization of Index

Indices have existence in the physical world. A weathercock is an index that Peirce often uses as an example, although not all the features of a weathercock are essential to its being. But as we have seen, there has to be a correspondence in fact. A handful examples are considered by Peirce as follows (MS 478: 175-176, 1903):

> A shout of "Hi!" "Say!" or "Hello!" is an index. A pointing finger is an index. A symptom of disease is an index. The object indicated must actually be there: that constitutes a difference between an index and an icon. [...] Thus, a photograph is an index, because the physical action of the light [...] produces an existential one-to-one correspondence between the parts if the photograph and the parts of the object; and this is often what the photograph is most valued for.

The function of indices should not be confused with causal interactions, although many examples can be drawn from causal interactions, simply because causal relations form a subset of indexical relations, which is reflected in the examples above such as the photograph and the symptoms of disease. But if I point to a picture, my finger at that moment is an index, without being causally related to the picture.

The flexibility of the idea of index is crucial, and its implications are potentially quite radical. Peirce for example writes: "If the Sign be an Index, we may think of it as a fragment torn away from the Object, the two in their Existence being one whole or a part of such whole"(MS 637: 30, 1909 [CP 2.230[8]]). Thus suppose we wish to refer to the historic event of Ceasar crossing the Rubicon. We know that our reference works in the way it should, or otherwise we won't be referring to the event. But how is it that the reference is made to a specific event instead of another event in a different year and place? The suggestion Peirce has is that even if two events are years and miles apart, the event and index pointing to it ought to be seen as forming one object-complex such that their existence is inseparable.

It might sound strange that the act of referring to an event and the event itself form one whole as Peirce thinks. But there is no difficulty in thinking that if I point to a mountain miles ahead, my pointing to the mountain, on the one hand, and the mountain pointed to, on the other, can be seen as forming a single event. Then what if I point to Mount McKinley out of sight? Or what about my pointing to Sirius in the night sky, whose light, we believe today, left the star 8.7 years ago? The point is that there is no *logical* difference between pointing to a picture on the wall and pointing to spatiotemporally remote objects or events.

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[8]   CP 2.230 presents the date of this text as 1910. The passage referred to, however, is dated by Peirce,"October 12, 1909."

The view that two interactive systems held wide apart may form a single totality became more popular after Peirce's days. To pick an example from modern physics, consider two particles flying apart in opposite directions with opposite spins, as commonly discussed in the so-called EPR paradox.[9] Quantum mechanics suggests that if a measurement of a first particle reveals a spin in the positive direction, the measurement instantaneously forces the other particle to have a negative spin, even if the second particle is light years apart from the first. The fact that the second particle seems to 'know' the direction of the spin of the first particle, at the instant a measurement is made, has been taken as a challenge to the concept of physical reality by a number of physicists, for the two particles appear too fragmented to constitute a single totality.

Such a phenomenon is one of the many things that have become part of our scientific world view today, but if it is hesitated to describe the strange communication between the two particles as 'causal,' the adjective 'indexical' would serve the purpose in Peirce's theory of signs. "Every physical force," Peirce considers, "reacts between a pair of particles, either of which may serve as an index of the other"(EP 2: 9, 1894). Whether an interaction is gravitational, magnetic, nuclear, or mesonic, does not matter, nor is it important that two objects are physically held near each other. For indexical relations are logically defined as such, not experimentally (MS 515: 53, undated):

> A reaction is something which exists between two objects, each of which is as it is by virtue of what the other is. That is, what each is logically *consists* in what the other is.

It is such considerable flexibility and generality of the idea that characterizes what an *index* is for Peirce. Note that Peirce, therefore, is logically prepared to develop a new interpretation of the status of classical mechanics, whose laws Kant assumed to be absolutely deterministic. In this regard Peirce offers an illuminating remark on how his idea of index is related to the common explanation of mechanical causation. A line of bricks, each toppling over to the next in domino effect, is taken as an example for his explanation. It is worth citing at length (NEM 4: 313-314, c.1906):

> An end one is tilted so as to fall upon the next; and so they all successfully fall. The mechanical statement of the phenomenon is that a portion of the sum of energy of motion that each brick had at the instant its centre of gravity was directly over its supporting edge, added to the energy of its fall is transformed into an energy of motion of the next brick. Now I assert no more than this, but less, since I do not say whether it was mechanical energy, or what it was that was communicated, when applying my definition

of a Sign, I assert (as I do) that each brick is a Sign (namely, an index), to the succeeding bricks of the line, of the original effect produced on the first brick. I freely concede that there is an anthropomorphic constituent in that statement: but there is none that is not equally present in the mechanical statement, since this asserts all that the other form asserts. Until you see this, you do not grasp the meaning that I attach to the word "sign."

Given the analysis of the *New List*, however, Peirce's point demands no meticulous account. As the passage makes sufficiently clear, the idea of *index* is much more general than what the "mechanical statement" proposes. Taken together with the other examples, it is important to note that index may work in the ordinary causal direction; in the inverse causal direction, such as smoke being an index of fire that caused the smoke; in symmetric causal direction, such as two masses reacting against each other; in quasi-causal modes, such as distant particles communicating with each other in an unknown way. A finger pointing to an object is asymmetric and non-causal. Two fingers pointing to each other stand in a symmetric non-causal indexical relation.

Consequently, one of the most notable features of Peirce's index is that it is not confined to words like 'this,' 'it,' 'you,' to variables like x, y, z, or to 'reference' in language. These are but some examples of indices, and most importantly, the typical indices Peirce considers are those signs by which we are brought into brute encounter with existential facts. Sudden smoke forces our attention to turn to possible fire. A finger pointing at us alerts ourselves to the stranger the finger belongs to. Hence it is not that we exert effort to discover objects. Quite the contrary, "it is by brute force that the Index thrusts its Object into the Field of Interpretation" (NEM 4: 317, c.1906). Note, again, that "force" need not be interpreted in the mechanical sense.

As was the case with *icon*, the working of an *index* requires perceptive observation. The complexity of index is well reflected in Peirce's remarks on the weather-cock (MS 8: 3, c.1903):

> A weather-cock is an index of the way in which the wind blows. It is a complex sign. A far as it points in the very direction from which the wind blows, it involves an icon. [...] A working weather-cock (supposing it devoid of mass) is at each instant an actual indication of the identical wind then and there blowing, the resultant of the moments of all the impinging particles, a single object, though physically composed of parts.

A working weathercock, therefore, is an *index*, whose response to the wind can be evaluated within small time intervals, and only when the wind blows in a stable direction for a given period of time. For the momentum of the weathercock will block accurate responses at moments the direction of the wind changes. To be precise, its mass, friction of the axle, and so on, should be considered. For if the wind is weak, the weather-cock will fail to respond to the wind in the first place. The object of the sign is complex, too, since it is a system of particles whose description requires such sciences as fluid mechanics, statistical physics, and thermodynamics. It will be convenient to disregard temperature.

6.4.3 Characterization of Symbol

6.4.3.1 Theoretical Consideration and Definition

Just as 'icon' and 'index' in Peirce' sense must be interpreted in the way they are defined by him, it is important not to confuse Peirce's concept of *symbol* with what we might mean by 'symbol' today. By definition, symbol is a sign whose quality is not prescindable from its reference to an interpretant, meaning that it is tied up with an interpretation that defines how the correlate, or object, is to be seen through the relate. Thus it is a sign whose quality is imputed to its object, such that the object *per se* asserts little.

As a familiar example, if we say that an owl is a *symbol* of wisdom, we bring the image of the owl before our mind, but instead of thinking of the bird, we come to perceive something very different through the bird, namely, *wisdom*. Note that the object of the sign that affected our mind is the owl, while its meaning is wisdom. Admittedly, we may see the owl as representing a family of birds, or as representing the abstract concept of wisdom, but it is in the latter case that the owl is said to be a symbol.

The definition of symbol can be interpreted strictly in the context of the *New List*. If the owl is taken as a symbol of wisdom, the quality of wisdom is imputed to the image of the bird, such that after a fraction of a second we no longer think about the bird *per se*, although the image of the bird must remain in our consciousness as long as it is recognized as a sign. This means that a symbol is such a sign that attempts to exhaust the quality of its object by imputing the quality it wishes to represent. Hence the biological features of the raptor would be mostly ignored.

When we say that the owl represents wisdom, on the other hand, it might appear that the object of the sign *is* wisdom. This is incorrect. We are referred to wisdom, for sure, but the bird should not be removed from our consciousness as long as it is seen as representing wisdom. In short, the recognition must always be a "triple consciousness of the sign, of the real object cognized, and of the meaning or interpretation, of the sign which the cognition connects with that object"(MS 325: 8-9, undated[10]). It is very important to note that the reference to an interpretant is integrated into the constitution of the owl as an object of thought such that we are able to see wisdom through it. As a result, most attributes of the original object become transparent.

At this point, the in-depth analysis of the *New List* becomes even more important. In every cognitive process, the interpretant or effect of sign will be integrated into the constitution of the object, but the quality represented by a symbol drains down most deeply into the manifold of sense and dyes it throughout, so to speak, whereby the qualities of the original object are rendered invisible. As a consequence, the object of symbol is not always manifest to the mind in the resulting cognition. Since the object

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[10] The "triple consciousness" *defines* what "cognition" is for Peirce: "This affords a definition of cognition, a more distinct and complete notion of what it consists in than any that had previously been proposed"(MS 325: 9, undated). In contrast *sense impressions* do not involve such triple consciousness in his view.

recedes, its interpretation is for the most part stable, not being influenced by the object in any significant way.

A symbol, therefore, is such a sign which is able to exhaustively represent its object by a specific quality to the relative disregard of the original object. This is true of words. If I see the word 'blue' on paper, for instance, the object that affected my sense is the figure of the printed ink. But 'blue' as a word renders its physical appearance transparent so that I am referred to its meaning. In some sense I am still seeing the ink pattern, but what I perceive in 'blue' is mostly its meaning.

The account has further merit. Peirce says, "Symbols grow" (CP 2.302, c.1895). It is one thing to say that symbols grow, quite another to explain why they are able to grow. The argument is prepared in the *New List*. Symbols are the kind of representations that stretch out to the most external layers of the world and thereby integrate qualities into the constitution of objects from within, as it were, whereas icons and indices merely mirror or interact with objects from without, respectively. Symbols enter the internal constitution of things, icons and indices either do not, or do when they are embedded in symbols. In short symbols are able to live and grow as qualities most deeply embodied in things.

From these considerations, we may give a definition of symbol as follows.

Definition

A Symbol is a sign whose quality is imputed to its object.

If we take a strongly functionalist stance, which I am not disinclined to do, a symbol is a sign that imputes its own quality or qualities to its object, since it is not a thing and its being is unseparate from its effect(s). Of course we could always say that a symbol is a sign whose quality cannot be prescinded from reference to a correlate and from reference to an interpretant. That is the most rigorous definition. But its meaning is not intuitively graspable if put that way, which is why I suggest the definition above. Note that in a letter to Lady Welby, drafted in December 1908, Peirce still mentions the idea of imputation in reference to the *New List* (EP 2: 481-482, 1908 [CP 8.342]).

6.4.3.2 Case Studies

It would be, on the other hand, natural to wonder if the concept of symbol presented in the *New List* is consistent with the other formulations given by Peirce in his writings. As far as I see, the answer is, *yes*. In the rest of this section, therefore, I will go over eight of Peirce's well-known passages on symbol in order to confirm the consistency of the core idea. The case studies are presented in chronological order, and range over the years 1866 - c.1911. The concept of symbol understood along this line is also crucial to the original idea of Peirce's *pragmatism*, although this would be too involved an issue to be discussed in this study.

(1) Lowell Lectures on the Logic of Science (W 1: 468, 1866)

The third and last kind of representations are *symbols* or general representations. They connote attributes [qualities] and so connote them as to determine what they denote. To this class, belong all *words* and all *conceptions*. Most combinations of words are also symbols. A proposition, an argument, even a whole book may be, and should be, a single symbol.

(2) Lowell Lectures on the Logic of Science (W 1: 475, 1866)

A symbol is a general representation like a word or conception. [...] A symbol is a representation whose essential Quality and Relation are both unprescindible — the Quality of being Imputed and the Relation ideal.

The peculiarity of the (1) consists in the *determination* of denoted objects by "attributes" or qualities that the symbols connote. For recall that in Peirce's formulation of the sign relation, it is *always* the *object* that *determines* the sign, which in turn determines the interpretant, such that the *object* mediately *determines* the interpretant. For the sake of simplicity, take the phrase "what they denote" to mean 'objects.' Then Peirce is saying here that the Symbols connote attributes by which they determine their objects. This is because Symbols *impute* their attributes to their objects. Passage (2), on the other hand, defines symbol in the same way as in the *New List*. I will not discuss the phrase 'the Relation [is] ideal' here — Peirce roughly means that the determining relation is degenerate. This is because, as discussed above, the object does not really influence the resulting interpretation of the sign.

(3) Short Logic (EP 2: 17, 1895 [CP 2.295])

A *symbol* is a sign naturally fit to *declare* that the set of objects, which is denoted by whatever set of indices may be in certain ways attached to it, is represented by an icon [representation of a quality] associated with it.

The italics on 'declare' are mine. A symbol *declares* what quality or icon *should* represent the set of objects of the symbol. This is done *without* regard to indices attached to it, since whatever the objects are, symbols are able to impute qualities to them. If I declare that X, whose quality is Q, is a symbolic representation of an object Y, I can always *impute* that quality Q to the represented object Y.[11] Hence Peirce says elsewhere that a symbol "is a law [artificial or otherwise] *governing* its Object" (EP 2: 276, 1903; my italics).

(4) Minute Logic (CP 2.92, 1902)

A Genuine Sign is a Transuasional Sign, or *Symbol*, which is a sign which owes its significant virtue to a character [quality] which can only be realized by the aid of its Interpretant. Any utterance of speech is an example. If the sounds were originally in part iconic, in part indexical, those characters

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[11] Compare this with the "conventional imputation" Peirce talks about back in 1868 (W 2: 238, 1868 [CP 5.309]).

have long since lost their importance. The words only stand for the objects they do, and signify the qualities they do, because they will determine, in the mind of the auditor, corresponding signs.

(5) Dictionary of Philosophy & Psychology (CP 2.304, 1902)

> A *symbol* is a sign which would lose the character [quality] which renders it a sign if there were no interpretant. Such is any utterance of speech which signifies what it does only by virtue of its being understood to have that signification.

A symbol, by definition, can neither be prescinded from Relation nor from Representation (recall Figure 6.2, p.93). By Representation is meant 'reference to an interpretant.' Peirce says in the second passage that a symbol would lose its quality 'if there were no interpretant.' Evidently, this is just what the definition of symbol requires, for without the interpretant the symbol would not impute its quality to objects (note the 'were' in subjunctive mood). In the first passage, on the other hand, Peirce says that words 'signify the qualities they do,' *because* they will 'determine' the corresponding signs, which are of course interpretants. Determination thus means *imputation* here.

(6) Sundry Logical Conceptions (EP 2: 274, 1903 [CP 2.292])

> A *Symbol* is a Representamen whose Representative character consists precisely in its being a rule that will determine its Interpretant.

(7) New Elements (EP 2: 307, c.1904)

> A symbol is defined as a sign which is fit to serve as such simply because it will be so interpreted.
>
> $$[\ldots]$$
>
> A symbol is a sign fit to be used as such because it determines the interpretant sign.

For our purpose, it suffices to observe that the passages are consistent with the general definition of symbol given above. However, it might now occur to the reader, after seeing similar remarks, why a symbol is said by Peirce to *determine* its interpretant. For once again, Peirce's definition of sign *always* has it that the *object* mediately *determines* its interpretant.[12] Are not the explanations of symbol in these texts in conflict with his basic definition of sign? My reply is, *no*. There is a step of reasoning unexpressed by Peirce, and moreover, it is at this point that our definition in **6.4.3.1** starts to speak more. For consider this: If a symbol imputes its own quality to its object, and hence behaves as a law governing its object, it follows that the determination of the

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[12] See for example the five definitions in **5.1.1** (p.72), **5.2.1** (p.74),**5.3.1** (p.76), **5.3.2** (p.76), and **5.4.1** (p.80).

interpretant by the object is now part of a larger cycle of determination. That is, the semiosis,

Object → Symbol → Interpretant,

is now understood as

Symbol ⇒ Object → Symbol → Interpretant,

where → designates the usual determining relation, while ⇒ designates *imputation* (do not take the arrows to simply mean temporal succession). Since the first chain is a *sub-chain* of the second, Peirce's explanations are consistent. Note that without the notion of *imputation* it is hard to explain why Peirce thinks that *both* the object determines the interpretant *and* the symbol (also) determines the interpretant. Observe, too, that a symbolic semiosis, the second chain, appears to have a self-feedback structure, and that it nevertheless requires an object — its instantiation, if you please — in order to realize its effect. As Peirce specialists would recognize, this is what Peirce holds about the operation of 'laws.'[13]

(8) A Sketch of Logical Critics (EP 2: 460-461, c.1911)

> But, I had observed that the most frequently useful division of signs is by trichotomy into firstly Likenesses, or, as I prefer to say, *Icons*, which serve to represent their objects only in so far as they resemble them in themselves; secondly, *Indices*, which represent their objects independently of any resemblance to them, only by virtue of real connections with them, and thirdly *Symbols*, which represent their objects, independently alike of any resemblance or any real connection, because dispositions or factitious habits of their interpreters insure their being so understood.

In the *New List* Peirce uses 'Likeness' for icon, but note that he still mentions 'Likeness' around 1911. The descriptions of icon and index are standard. Symbol is, however, explained 'independently' of 'any resemblance or any real connection' to its object, which sounds slightly different from what we saw in the differentiation of symbol from icon and index. It is, however, for this very reason that our definition of symbol has explanatory value. Peirce is now emphasizing the law-like *imputing* behavior of symbols, such that whatever imputes its quality to objects in law-like manner should be seen as a symbol. That is, if events conform to the qualities of X by virtue of dispositions or habits in their interpreters, then X should be seen as a symbol. This is of course why *natural laws* are regarded as symbols by Peirce.

6.4.3.3   Summary Remark on Symbol

I have suggested that from 1866, and particularly after the *New List*, the characterization of symbol is stable throughout Peirce's writings. Besides, the significance of the idea can be further highlighted through a reflection upon the implication of the last

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[13] Some aspects of *law* will be discussed in **8.2.1** (p.130f.).

few remarks on the nature of symbol. As is well known, conventional signs, and hence most artificial signs including words, are symbols in Peirce's semeiotics. But so are *natural laws*. What is the common property shared by words and natural laws? There is nothing conventional or artificial about natural laws, especially for a scientist like Peirce. It is in view of such extremely divergent classes of signs, identically regarded as symbols by Peirce, that the significance of the definition of symbol in the *New List* becomes more perceptible.

6.5   Semeiotic Parasites, Medium, and Causation

6.5.1   Signs as Parasites

Since in Peirce's view signs originate with objects and are so far determined by objects, all signs are parasitic upon their objects, so to speak, but extending this metaphor further, we could say that symbols are not only the deepest but the most thriving and flourishing of such semeiotic parasites.[14] When artificial symbols are initially introduced, they are of course not like this. When we name an object for the first time, for example, an iconic quality, be it a sound, visual image, or whatever, flashes into our mind, which is then thrusted toward the object with the aid of an index. But once the quality is integrated into the object and becomes a part of it, the representation of the quality is a symbol and thereafter continues to exert effects upon the mind *through the object* which is its host.[15]

Peirce thinks that the iconic and indexical elements live on, too, but they are often harder to recognize than symbols. An example considered by Peirce offers some useful explanation (MS 478, 176-177, 1903):

> A symbol is a sign whose significant character consists merely in the fact that it will be so interpreted. Take the word 'owl' for example. When this word was first used in its original form, it may be supposed that it was considered fit to calling up the idea of the bird because of its sounding like the bird's hoot, or *howl*. If so, it was, on the first occasion of its use, an icon. The poet will still bear in mind this resemblance; so that in poetry, the word retains to this day a vestige of its iconic origin. But in everyday

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[14] Peirce later comes to see that such a perspective may well overlap with that of Hegel: "But now we have to examine whether there be a doctrine of signs corresponding to Hegel's objective logic; that is to say, whether there be a life in Signs, so that—the requisite vehicle being present—they will go through a certain order of development, and if so, whether this development be merely of such a nature that the same round of changes of form is described over and over again whatever be the matter of the thought or whether, in addition to such a repetitive order, there be also a greater life-history that every symbol furnished with a vehicle of life goes through, and what is the nature of it" (CP 2.111, 1902).

[15] Note also that semeiotic parasites are in some sense more real than their host for Peirce: "Thus, whether you accept the opinion or not, you must see that it is a perfectly intelligible opinion that ideas are not all mere creations of this or that mind, but on the contrary have a power of finding or creating their vehicles, and having found them, of conferring upon them the ability to transform the face of the earth" (CP 1.217, 1902).

use, the only reason the word is used to communicate the idea is that the speaker is *certain that it will be so interpreted.* It is the same with every word and speech.

The basic characterization of symbol is identical with what we have already seen. The added aspect is the iconic 'vestige.' But it is not difficult to understand this, since according to the *New List* every sign is at least an icon. It might be suspected, on the other hand, that Peirce did not give thoughts to index in the above passage. But this is not so, since in order that the word and the raptor be brought into correspondence "on the first occasion of its use," an index has to be employed.

With this Peirce does not intend to suggest a mythology of words. If a new species of butterfly is identified, a scientist may seek for a new name that seems to fit its appearance. Or when we meet with a person for the first time and learn her name, the name is existentially connected to that individual at the very moment of acquaintance. "It is *then*, and then only, a genuine Index," says Peirce (EP 2: 286, 1903 [CP 2.329]). After that point our cognition interacts with words associated with individuals or objects. The use of language thus involves all three signs on Peirce's account. "It is evident," Peirce says, "that in every language whatsoever, whether it be of the nature of speech, or writing, or what, if an assertion is made signs of all those three kinds must be used"(MS 16: 14, c.1895).

6.5.2 Sign as Medium

It is worth remarking that such a view of symbol has a unique Peircean feature. To make this clear, it is important to distinguish imputation as conceived by Peirce from what might be called an 'imposition' of qualities. In particular, it is not the human act of 'labeling' or the kind that Peirce has in mind. The latter is, as explained above, accomplished through the aid of an index. Besides, it is the *symbol* itself that imputes its quality to its object. "I maintain," Peirce writes, "that every sufficiently complete symbol governs things, and that symbols alone do this" (EP 2: 313, c.1904). The act is *not* mine. Only symbols can govern how things are.

As I have suggested by the metaphor of parasites, all symbols live in objects and hence in the form of instantiation in events, which enable us to recognize things. This is one of the most important points Peirce makes in the *New List*, since it captures the deepest involvement of a quality in spatiotemporal objects emerging in the cognitive process. Besides, what the *New List* makes clear is that we cannot even form propositions without representations or signs. It then follows that cognition is dependent on the function of signs, including symbols, more than signs upon our conscious thinking.

It is fairly clear from such an account that signs serve as a medium through which objects communicate certain qualities to potential interpreters. In Peirce's words: "What is a sign? It is a medium of communication. Communication between what? Between two *minds*"(MS 498: 27, undated). Recall, however, that the concept of *correlate* or *object* does not distinguish between *mind* and *matter*. A mental state, for example, can serve as an *object* which affects subsequent mental states through the working of

signs. Quite generally, therefore, "The *experience* is rather the *object* which animates the sign"(MS 322: 11,[16] undated; my italics).

6.5.3   Three Modes of Mediation

Each of the three kinds of sign, on the other hand, has a distinct characteristic as a medium of communication, because the relations in which they stand to their object and interpretant vary. When viewed as a medium of communication, a few worthwhile contrasts can be drawn among icon, index, and symbol. The basic thesis of Peirce is that every index involves an icon, and every symbol involves an index, and therefore an icon as well. This is obvious from the argument in the *New List* (Recall Figure 6.2, p.93).

But if we take symbol as the basic kind of sign, index and icon can be seen as degenerate forms of symbols, since the qualities they represent do not spread throughout the object as exhaustively as the qualities represented by symbols. They represent the objects but their effects are far more limited than the effects of symbols. In a similar way, icon would be more degenerate than index, since the relation to its object is not as essential to its quality as it is with the case of index. Accordingly, Peirce later remarks as follows on the nature of icon and index (EP 2: 306, c.1904):

> Of signs there are two different degenerate forms. [. . .] The more degenerate of the two forms (as I look upon it) is the *icon*. [. . .] The relation to its object is a degenerate relation. It asserts nothing.

Then he continues (*ibid.*):

> The other form of degenerate sign is to be termed an *index*. It is a defined as a sign which is fit to serve as such by virtue of being in real reaction with its object. [. . .] A pure index simply forces attention to the object with which it reacts and puts the interpreter into mediate reaction with that object, but conveys no information.

A few diagrams would be helpful to flesh out the implication. Suppose the triangular diagram in Figure 6.5 visualizes a symbolic sign relation by representing the three vertices as symbol, object, and interpretant.[17] The solid arrows are meant to illustrate that the object determines or influences the sign and that the sign in turn influences or determines the interpretant. This amounts to saying that the object influences or determines the interpretant not immediately but mediately, which is indicated by the dotted arrow below, simply because the sign stands in-between as a mediator.

What the second part of the degeneracy thesis above says is that *index* can be seen as a degenerate form of *symbol*. Thus if we let the height of the triangle represent the

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[16] This is Peirce's pagination, which reads "Prag 11."

[17] Peirce did not use triangles to visualize the *sign relation*, but I will use them since they are harmless. That is, once the argument is understood, we can always delete the sides of the triangle and pair the three vertices, which stand for *sign* (in the present context *symbol*), *object*, and *interpretant*, respectively, into the *logical* triplet of the sign relation considered in **5.3** (p.76f.).
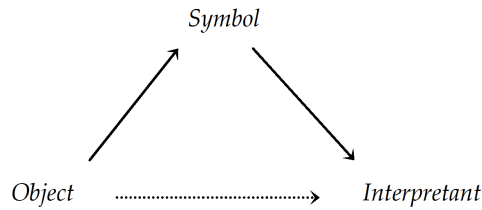
Figure 6.5: Symbol as mediator. The object determines or influences the interpretant by way of the symbol.

degree of mediation, that is, how much the sign effectively mediates or intervenes, we can gradually reduce the degree of mediation toward zero in imagination, as shown in Figure 6.6, by squeezing the height of the triangle. The more the triangle is flattened, the more indexical the sign would be. It is easy to see that in the limit the flattened
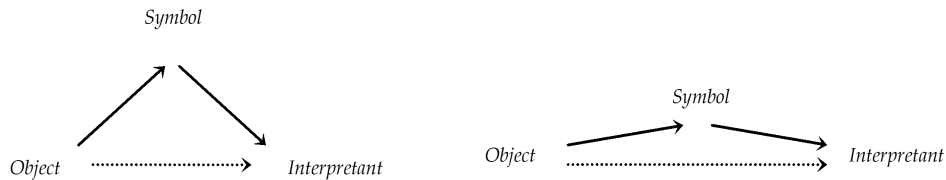

Figure 6.6: Regarding *index* as a degenerate form of *symbol*. The height of the triangle expresses the degree of mediation by the symbol.

triangle would coincide with the dotted arrow, in which case the index can be seen as mechanical causation, since there is no room for an interpretive act of the sign to influence the determination of the interpretant. The object almost exclusively determines the interpretant. Starting from the triangle with height, therefore, an index can be seen as a degenerate form of symbol, of which mechanical causation is a limiting case.

In similar fashion, we may start with the index whose height is made arbitrarily small such that it is indistinguishable from the dotted arrow. The index can thus be seen as a solid arrow drawn over the dotted arrow pointing toward the right. If we let the length of the arrow represent how forcefully the index thrusts the object to the mind, just like taking the length of a vector as the size of force, we can diminish the degree of indexicality toward zero in imagination, by making the arrow shrink toward the left. As suggested by Figure 6.7, in the limit the shortened index will coincide with a single point from which the arrow was pointing out. The point will then be an icon, which mirrors the object without thrusting the object toward the interpretant. Thus an icon can be seen as a degenerate form of an index.

Index
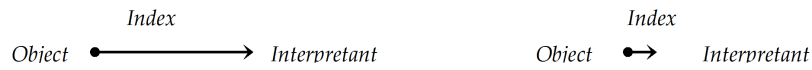Object ●━━━━━━━→ Interpretant

Index
Object ●→ Interpretant

Figure 6.7: Regarding *icon* as a degenerate form of *index*. The length of the arrow expresses the force of the *index* thrusting the object to the mind.

On the other hand, if we wish to magnify how a symbol operates, we can take the height of the triangle to be arbitrarily large, so that in the limit the influence of the object would be expressed by a vertical vector pointing upward, whereas the influence of the sign would be expressed by a vertical vector pointing downward, although the limiting case itself would no longer constitute a sign relation. But the thought experiment is useful since it suggests that a symbol would indeed determine most of the effect upon the mind (Figure 6.8).
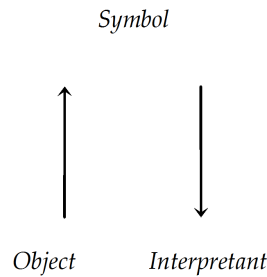

Symbol

↑   ↓

Object   *Interpretant*

Figure 6.8: Magnifying the operation of *symbol*. The *symbol* is determined by the object, but the interpretant appears as if it were exclusively determined by the *symbol*.

6.5.4   Semeiotic Causation

The reason this approach to the three signs merits consideration is that it places the three kinds of signs into helpful contrasts. If the sign is an icon, it is a very weak medium of communication but it is involved in any sign, and it directly mirrors an aspect of the object to the mind in detached manner. That it requires the least connection for communication is its strength: "The only way of directly communicating an idea is by means of an icon; and every indirect method of communicating an idea must depend for its establishment upon the use of an icon" (CP 2.278, c.1895).

If a sign is an index, its interpretant is often hard to detect since its semeiotic mediation is very small and could be almost negligible. Hence if its effect as a sign is

neglected altogether, we are left with mechanical causation. It is also characteristic of pure denotation, since its work is to bring an object to attention without interpreting what the object is. With this in mind Peirce states that index is "a Sign whose significance of its Object is due to its having a genuine Relation to that Object, *irrespective of the Interpretant*" (CP 2.92, 1902; my emphasis).

If a sign is an symbol, its object is often invisible to the mind since the effect of the sign overrides the influence of the object and thereby renders the object transparent.[18] The quality the symbol represents governs the object while the object tends to lose its own appeal. A symbol thus attempts to convince the interpreter of the nature of the object, as if it argues that the object should be interpreted in such and such a way. Note, therefore, that for Peirce "the *argument* is the genuine form of symbol" (MS S-67: 7, undated). But this is not a huge surprise. In §15 of the *New List*, Peirce classifies *argument* as the strongest and most determining form of symbols, since it determines not only the ground and object but also the interpretant, independently of the first two (W 2: 57.19-22). Note that the force an argument exerts on the mind is not physical force. It is of the nature of rational compulsion, yet a force hardly negligible in the life of man in Peirce's view.[19]

All three signs, therefore, involve notions of non-causal influence that an object can have on the mind. It is obvious that Peirce's theory of signs cannot be properly understood without seeing the high degree of generality of such semeiotic influences. But it is important to notice that mechanical causation and semeiotic causation are not mutually exclusive, since the former is just a special case of the latter.

When Peirce talks about a 'causal' connection between a sign and its object, therefore, what is meant by it is that every sign has its object, and must be affected by it. Nothing more than this is claimed, and this is Peirce's basic reply to the problem raised in at the beginning of this chapter (**6.1**, p.84f.). There is, of course, little doubt that Peirce's own words are frequently misleading. But as long as it is observed that the meanings of such terms as *causation*, *determination*, and *influence*, are radically transformed by Peirce in §14 of the *New List*, it is evident that *causation* is not confined to physical causation.

6.5.5   A Small Application of the Idea

The theory is not without interesting applications, of which we briefly consider only one. For a moment suppose that physical events in the brain 'cause' certain mental states, which is a view generally acceptable to Peirce, as long as it is *semeiotic causation* that is understood by the word 'cause.' Under this supposition, there would be a stream

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[18] Hence words have the potential to be violent when wrongly used. Note that words as symbols can be employed in any way here and now, but their use is not arbitrary since *misemployment* would be corrected. In passing we may note that Peirce's *pragmatic maxim* offers a standard for an important kind of correction.

[19] When Peirce writes, "the universe is a vast representamen, a great *symbol* of God's purpose," it is important to observe that he continues, "that Universe being precisely an *argument*" (CP 5.119, 1903; my emphases). The word *symbol* in such a context is not to be taken as mere rhetoric for Peirce.

of physical correlates, a succession of physical events, if you please, that affect our thought. The idea of semeiotic causation leads Peirce to consider as follows (CP 8.168, c.1903):

> It then might happen that upon an endless series of physical operations occurring in a fraction of a second should ensue a beginningless series of mental operations. Now it is to no purpose to say that this is improbable. If it is possible, as it certainly is, that suffices to show that mind and matter might, without contradiction, interact, although each could directly act only upon its own kind of substance.

Since we all have brains, I will leave this in the picture as the material basis of mind, which is not at odds with what Peirce says above, although the mind-matter distinction is eventually irrelevant according to the position developed in the *New List* and Peirce's other writings.

Now since iconic representations do not require any physical interaction with material objects, and since every representation involves an icon, the object of a given representation, or sign, and the mind to which the interpretant of the sign belongs, can interact without contradiction. Mental states would then be representations dreamt by material objects, including the brain, as it were, while in temporal order the series of mental states follow the physical states by a difference of a fraction of a second. In this regard Peirce's idea of iconic representation allows for interesting comparison with the more contemporary notion of *supervenience* of mental states upon physical states.

Part IV

New List and the Logic of Representations

Chapter 7

The Theory of Representations

7.1 Sign, Object, and Appearance

From what has been said, it is clear that all *signs* live in objects for Peirce, which simply means that they can have no being in isolation from objects. The thesis is explained particularly well in the *New List*, since a functionalist interpretation of *categories*, of which *representation* is the third derived category, maintains that a sign is a functional concept such that it has its being *strictly* in the form of its *effect* upon the process of thought, where thought is to be taken very broadly.

It is, accordingly, *possible* in Peirce's view that we are conscious of objects but not of signs, but it is *impossible* that we are conscious of signs but not of objects. A passage from 1909 helps us see this (MS 637: 44, 1909):

> That is, the Interpreter must be affected by the Sign, so far as it is the function of the Sign to affect him, as if it were the Object itself that affected him; and while he may not notice the Sign at all, he must recognize the Object, or the Sign will not have accomplished its perfection of being the Sign that it is.

First note the Kantian term 'affect.' What Peirce is saying is that if the sign is highly active, features of the object of cognition are indeterminate, or unsettled, such that the object itself is also in its making. It is thus conceivable that the interpreter does not have a *recognition* of the object in the rapid transition of experiential phases, but once a definite recognition is formed, an object, into which the sign has integrated its effect, *must* be recognized.

It is not hard to see that the stage at which the mind is affected by an object is the phase of initial unification, while the middle stage, where this sign becomes most active, constitute the transition from differentiation to reunification.[1]Peirce's explanation above obviously ends with reunification, that is, the stage at which the functional

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[1] For *unification*, *differentiation*, and *reunification*, see **1.4.3.2** - **1.4.3.3** (p.19f.), **3.1.2** (p.38f.), **3.2.6** (p.58f.), **4.2** (p.64f.), and **5.3.3** (p.77f.).

sign will have "accomplished its perfection of being the Sign," such that it fuses into its object, leaving only its effect upon it, as it were.

Around the same time, we hear from Peirce as follows (MS 634: 12, 1909):

> Since we cannot take the real things themselves into our minds, we must use signs of them. Thoughts are signs of them, or may be; but so may visible objects be; and whether they are visible through the physical eye or the imagination will in many cases make no difference [. . .].

Physical objects do not enter the mind, of course, but features of them do pass themselves over to the mind, through which we come to recognize things. As we have seen in **5.4** (p.80f.), objects are always the *originals* of signs, whether they are perceived through sensory organs or through imagination.

For Peirce, as much as for Kant, objects are recognized in appearance, while in normal perception we know that there is much more to the objects beyond their immediate presentation, since the effects of the streams of correlates also contribute to cognition.[2] As discussed earlier, the appearance is the *relate*, through which I perceive the object-complex, or the integrated *correlates*. The sign can be seen as part of the relate, as I do not necessarily attend to all details of the appearance.[3]

7.2 'First Impressions' in the Late Peirce

There could be, on the other hand, a tendency in Peirce scholarship to presume that in the mature Peirce there is no longer a theory of *sensuous impressions* as in the *New List*. Textual evidence, however, shows that the language of *sensation* and *impression* not only survives but recurs in the very late writings of Peirce. There is no doubt that the doctrine of *sensuous impressions* is retained in Peirce's late philosophy. Consider, for instance, the following passage from 1908 (MS 609, 6-7, 1908):

> Accordingly, the excitation of a minute part of the retina can only convey a sense of light without any sense of its being spread over a surface or occupying any position. Since this is true of each part of the retina, it is true of the whole, notwithstanding our inability to imagine a light that does not seem to occupy a surface and to be in some definite direction from us. This Feeling of light without any attribution of extension or position exemplifies what I mean by a First Impression of Sense.[4]

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[2] In 1868 Peirce wrote: "But we must remember that, in addition to the principal element of thought at any moment, there are a hundred things in our mind to which but a small fraction of attention or consciousness is conceded. It does not, therefore, follow, because a new constituent of thought gets the uppermost that the train of thought which it displaces is broken off altogether"(W 2: 224, 1868). [Compare with the argument of **3.2.4** (p.55f.).]

[3] The object as immediately represented through the *sign* is often called the *immediate object* by Peirce, a terminology not uncommon after 1868 (See W 2: 204-205, 1868).

[4] As one would notice, the argument is exactly the same as the one we saw in Peirce's 1867 draft, "Appendix No.2." [See the first block citation in (ii) of **3.1.3.3** (p.41f.).] Note that the example of

Peirce's commitment to *sensuous impressions*, to which no *consciousness* need be attached, is obvious throughout the same manuscript.[5] But there is no wonder about this in that *signs* belong in *things*, which can affect the mind *only* through the working of *signs*. Thus take another passage from 1913 (MS 681: 4, 1913):

> Let us start, where reasoning itself takes its start, that is, from Sensation. I don't say Experience, since Experience is far enough from being an initial condition.

The expression "initial condition" is somewhat unclear here, but Peirce makes explicit that *reasoning* begins with *sensation* in his view. He then proceeds in the manuscript to describe how cognition develops from an inchoate mass of consciousness, which is certainly reminiscent of the arguments in the *New List* (MS 681: 12-13, 1913):

> The typical phenomenon may be described as follows. From the general mass of consciousness, as yet void of any marked determination[,] suddenly a more definite idea, the *Object*, or *Not-me*, separates itself like a crystal from a clear solution, and like a crystal *grows*, while the rest of consciousness,— the mother liquor, so to speak,—the *Me*, seems, as it were, to boast of the new birth, as *Its Own*, oblivious of the seminal suggestion that must have been present as a nucleus.

The details of the passage are not our concern, but it is very clearly held that the object grows out from the general *It*, namely, the crudest unity of the manifold of sense in the *New List*, in reaction to which the self-conscious 'Me' bursts forward.

The reason why researchers are at times mislead to think that there is not much of a doctrine of *first impressions* in the late Peirce is that there is no *first cognition* on his account, which is commonly, and correctly, taken as one of the earliest forms of anti-Cartesianism in classical American philosophy. But sensations and impressions are too primitive to be regarded as *cognitive* states for Peirce.[6] There is, accordingly, no contradiction in holding that there are *first impressions*, as in his 1908 draft, or sensation with which reasoning starts, as in his 1913 draft, on the one hand, while claiming that there is no *first cognition*, on the other. Rather, the latter is simply preceded by the former, which is of course more or less a Kantian thesis. Thus we may also recall the following remark Peirce makes on Kant (MS 664: 18, 1910):

> To be sure Kant endeavors to draw a distinction between knowledge *drawn from* experience and knowledge that *begins in* experience. [...] But whatever the value of Kant's distinction may be, it is certain that every item of one's knowledge has become known by what he has experienced.

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light hitting the retina is mentioned on other occasions as well, such as W 2: 197-199 (1868); W 3: 33 (1872); and MS 801: 2, undated [c.1908].

[5] MS 609: 6-8, 11-14, 16-17, 19 *passim*, 1908.

[6] Compare this with Peirce's *definition* of *cognition* we saw earlier in **6.4.3.1**, footnote 10 (p.101).

Peirce is not intending to be very precise about Kant in this brief passing remark, but the distinction he has in mind is that between '*mit* der Erfahrung [anheben]' and '*aus* der Erfahrung [entspringen],' mentioned by Kant at the very beginning of the introduction of the second edition of the *Critique* (B1). The view shared by Peirce and Kant is that cognition is not found *in* sense, but nevertheless begins *with* sense.[7] In such basic matters, Peirce has no reason to make any drastic changes in his position.

To take another example, Peirce refers back to one of his 1868 papers after some forty years from publication, stating that he holds the same opinion as before (MS 643: 7-8, 1909):

> In my opinion we always think in signs. I gave my reasons in 1868, in Wm. T. Harris's Journal of Speculative Philosophy, Vol II pp.111 *et* seq., where it will be seen that I did not regard the question as one of Psychology (by which I always mean Empirical Psychology,) but as merely as one of distinct thought; and I remain of the same way of thinking.[8]

Note that all the block passages in this section were written in the last five, six years of Peirce's life, and that they are surrounded by other similar remarks. The observation to be drawn from this is that *cognition* begins *with* impressions for Peirce, although impressions themselves do not count as *cognition*, a thesis central to the *New List*, which, not incidentally, persists through his very mature writings.

7.3   Sign and Representamen

By this, I do not intend to underestimate the differences between Peirce and Kant.[9] Most notably, Peirce's idea of *semeiotic causation*, which we considered in the previous chapter, stands in marked contrast to Kant's rather narrow concept of causation. Kant by and large accepted Newtonian mechanics, while Peirce developed the view that deterministic mechanical causation should be seen as a limiting case of asymmetrical indexical determination.[10]

As long as sign phenomena are studied with full generality, it goes without saying that *sign* must also be defined with full generality. This is basically why there are *genetic* and *logical* definitions of *sign* in Peirce's writings. The former is modeled after human cognition, whereas the latter *generalizes* the former. In terms of terminology, Peirce prefers to use *sign* when he considers sign *genetically*, while the more general term *representamen* is reserved for sign considered *logically*, that is, with full generality. No distinction between *sign* and *representamen* was proposed up to this point, since

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[7] Peirce later states: "But the starting point of all our reasoning is not *in* those sense-impressions, but in our percepts"(CP 8.144, 1901; my emphasis). Nothing of cognitive nature is *in* impressions. On the other hand, the *percept* is "not the first impression of sense" but "is a construction" of the mind (CP 2.141, 1902).

[8] See "Questions Concerning Certain Faculties Claimed for Man"(W 2: 193-211 [esp. 207-211], 1868).

[9] See **1.2.1**, footnote 12 (p.11).

[10] This is discussed in **6.4.2** (p.98f.) and **6.5.3** (p.108f.).

the difference between the two makes little sense until *semeiotic causation* is considered in some detail.

The class of *signs*, therefore, forms a subclass of the class of *representamens*. Thus every *sign* is a *representamen* by definition, but not all *representamen* needs to be a *sign* (Figure 7.1). "A sign is a species under the genus *representamen*"(MS 792: 3,
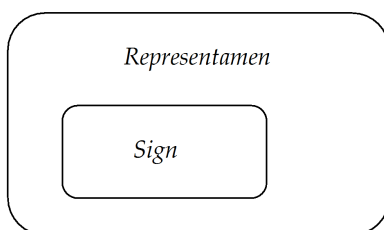

Figure 7.1: The class of *signs* forms a subclass of the class of *representamens*.

undated), Peirce writes, and he then continues (MS 792: 4, undated):

> A *sign* is an object capable if determining in a mind an interpretant cognition of an object called the *object* of the sign. A sign is a *representamen*; and the definition of a representamen does not refer to a mind. A representamen is an object, A, in such a triadic relation *to* an object, B, *for* an object, C, (the italicized prepositions merely indicating a difference between the two relations) that it is fit to determine C to being in the same triadic relation *to* A, and thereby,[11] owing to the peculiar nature of this triadic relation to[12] B, *for* some third object, C', determinable in the same manner, and so on *ad infinitum*.

Note that neutral variables A, B, C, and C', are used for the definition of a *representamen*. We may observe that Peirce carefully removes mentalistic elements from his definition of *representamen*, including the subtle psychological nuance that could attach to the prepositions 'to' and 'for.' Such a nuance is undesirable for a completely neutral or *logical* definition. The effort at *generalization* is reflected in the following passage as well (MS 465: 28, 1903 [CP 1.540]):

> I use these two words, *sign* and *representamen*, differently. By a *sign* I mean anything which conveys any definite notion of an object in any way, as such conveyers of thought are familiarly known to us. Now I start with this familiar idea and make the best analysis I can of what is essential to a sign, and I define a *representamen* as being whatever that analysis applies to.

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[11] I have replaced a left parenthesis, originally inserted between the words 'thereby' and 'owing,' with a comma, since the right parenthesis is unfound in the manuscript.

[12] Peirce did not underline 'to' in the manuscript, which is why it is not italicized here.

Peirce then proceeds to give the following definition (MS 465: 29-30, 1903 [CP 1.541[13]]):

> My definition of a representamen is as follows [.]
>
> A representamen is a subject of a triadic relation *to* a Second, called its *Object*, *for* a Third, called its *Interpretant*, this triadic relation being such that the Representamen determines its Interpretant to stand in the same triadic relation to the same Object for some Interpretant.

The definition of *representamen* given here belongs to the group of *logical definitions* considered earlier. Namely, *representamen* is the *first correlate* of the formal triplet of *sign*, *object*, and *interpretant*. It follows from this that *representamen* can be generally substituted for *sign*, since every sign is a representamen, but we cannot generally substitute *representamen* for *sign*, since what obtains for *sign* may not obtain for the more general class of *representamens*. Seen under this light, we notice that the definition of *representamen* in §13 of the *New List*, while developed in a genetic context, is given a relatively neutral form (W 2: 55.18).[14] In earlier chapters, the stress on the *logical* side of Peirce's consideration was referred to as the 'collapse' of the genetic depth in the process of proposition formation. The approach Peirce takes is understandable since it is only through a logical formulation that enables such generalization.

Over decades, Peirce seems to have found it difficult to have the *general* concept of *sign*, that is *representamen*, understood by his contemporaries. The following passage from 1908, familiar to readers of Peirce, speaks of the kind of difficulty Peirce felt with respect to the generality of his concept of *sign* (EP 2:478, 1908):

> I define a Sign as anything which is so determined by something else, called its Object, and so determines an effect upon a person, which effect I call its Interpretant, that latter is thereby mediately determined by the former.
> My insertion of "upon a person" is a sop to Cerberus, because I despair of making my own broader conception understood.

If we recall the concept of *index* from **6.4.2** (p.98f.) and **6.5.3** (p.108f.), it is clear that the *effect* of a sign need not be an effect upon a *person*. Regarding the "sop to Cerberus," Max Fisch has once written: "The sop to Cerberus was lapsing from sign-talk into psych-talk—from semeiotic into psychology."[15] Note, however, that this interpretation is, albeit correct, much weaker than it should be, since the main idea is not merely to 'save' *semeiotics* from psychologism, but to regard the mental interpretant as a particular species of interpretant construed most generally.

It remains true, on the other hand, that the generalization of the concept of *sign* must take its start with semeiotic phenomena *as known to us*. In this regard Peirce was well aware that a truly general definition of sign is not easy to give. Hence he

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[13] The CP edition makes extensive changes to the original text in 1.541, such as italicizing the whole sentence and capitalizing lower case letters.

[14] Peirce later says that "representamen" was employed in the sense of a "sign in general." See **6.2**, footnote 5 (p.86).

[15] Max Fisch, *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, p.343, 1986.

writes: "A *Sign* is a Representamen with a mental Interpretant. Possibly there may be Representamens that are not Signs"(EP 2: 273, 1903 [CP 2.274, 1903]). What such words as "Possibly" and "may be" indicate is that, while, by definition, the class of *signs* is a subclass of the class of *representamens*, it is not clear if the class of signs is a *proper* subclass of the class of representamens. Sensing the potential difficulty, therefore, Peirce also states: "A Sign is a representamen of which some interpretant is a cognition of a mind. Signs are the only representamens that have been much studied"(CP 2.242, c.1903).

For the most part, Peirce thinks that the triadic sign relation in the broad sense captures his vision with sufficient generality, but as the last few remarks show, he is cautious of the generalization he aims at. Hence we hear Peirce later say: "For forty years, that is, since the beginning of the year 1867 [around the time of the *New List*], I have been constantly on the alert to find a genuine triadic relation"(CP 6.322, c.1909).

7.4 Peirce's 'Errors' in the *New List*

7.4.1 Textual Issues

Observing Peirce's efforts at generalizing the concept of sign is useful in yet another respect. It is known to researchers that Peirce subsequently acknowledged certain 'errors' he made in the *New List*, which acknowledgement is at times thought of as tacitly undervaluing the *New List* in Peirce's own words. Most of the acknowledged 'errors,' however, are of the same nature: Peirce thinks he failed to judge the degree of *generality* of the idea discovered in the *New List*. It is also worth noting that the acknowledged 'errors' researchers have noticed are expressed in a single manuscript composed around 1899.[16]

An unfortunate textual matter we should note is that Peirce's hand-written pages were rearranged and published in remote paragraphs of volume 1 and 2 of the *Collected Papers* by editors, such that it generates a misleading impression that Peirce brings up his 'errors' of the *New List* on distinct occasions. In order to avoid this misrepresentation, the current section presents relevant passages in the order the text is composed. It is to be noted, in particular, that Peirce's self-criticism and high appraisal of the *New List* appear in one and the same manuscript.

In the earlier part of the paper Peirce writes (MS 787: 17, c.1899 [CP 2.332]):

> Since that date [1867], as my philosophical studies have progressed, I have been led half a dozen times and more to call the doctrine into serious question and to submit it to a rigid and thorough reëxamination. Each reëxamination, while leading to some modification more or less important, has reinstated the impeached doctrine in my estimation.

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[16] MS 787, c.1899. The manuscript is titled "That Categorical and Hypothetical Propositions are one in essence, with some connected matters." cf. MS 595, 804, 805, and 812, which include rejected pages of MS 787. [See 'Appendix I' of the *Robin Catalogue* (1867).]

It turns out that in the later part of the draft (MS 787: 33, c.1899), Peirce famously identifies the *New List* as "perhaps the least unsatisfactory" paper ever produced by Peirce "from a logical point of view."[17] The commonly known 'errors' of the *New List* appear in between.

7.4.2 Insufficient Generalization

To begin with, Peirce remarks that in the *New List* he failed to consider n-place predicates *in general*. That is, if we consider an atomic predicate in the general form $Px_1x_2\ldots x_n$, Peirce says that he did not have in mind the cases with $n > 3$, meaning that his concept of *predicate* was limited to the forms Px_1, Px_1x_2, $Px_1x_2x_3$. He also believed, uncritically for that matter, that *representation* captured the most general form of three-place predicates. Peirce starts to explain his mistake as follows (MS 787: 28, c.1899 [CP 1.564]):

> I must acknowledge some previous errors committed by me in expounding my division of signs into *icons*, *indices* and *symbols*. At the time I first published this division in 1867 I had been studying the logic of relatives for so short a time that it was not until three years later that I was ready to go to print with my first memoir on that subject. I had hardly commenced the cultivation of that land which De Morgan had cleared.

We should not overlook that Peirce does say he had already been studying the logic of relatives by 1867. Besides, his remark could be deceptively humble. Compared with his gigantic paper of 1870,[18] which runs over sixty pages in the *Memoirs of the American Academy*, it is perhaps understandable that Peirce says his logic of relatives was much limited around 1867. But it would be wrong to think that his knowledge was crude or puerile, for Peirce presented two papers on formal logic with arithmetic relations to the American Academy of Arts and Sciences in 1867.[19] Continuing Peirce's words further (MS 787: 29, c.1899 [CP 1.565]):

> I saw that there must be a conception of which I could make out some features, but being unfamiliar with it in its generality, I quite naturally mistook it for that conception of *representation* which I obtained by generalizing for this very purpose the idea of a sign. I did not generalize enough, a form of error into which greater minds than mine might fall. I supposed

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[17] See **7.4.4** (p.123) below.

[18] "Description of a Notation for the Logic of Relatives, resulting from an Amplification of the Conceptions of Boole's Calculus of Logic"(W 2: 359-429, 1870). Building on the works of Boole, De Morgan, Jevons, Hamilton, and his farther Benjamin Peirce, Charles Peirce starts his paper by defining the most basic mathematical relations and operations, such as class inclusion, equality, less than, greater than, addition, multiplication, functional multiplication, and so forth, and then proceeds to apply various algebraic techniques to logic, trying out a number of ideas including logical sum and product, logarithmic and exponential forms, infinitesimal relatives, infinite series, and differentials.

[19] The two papers are: "On an Improvement in Boole's Calculus of Logic"(W 2: 12-23, 1867); and "Upon the Logic of Mathematics"(W 2: 59-69, 1867). [See also **5.5.1** (p.81f.).]

the third class of characters was quite covered by the representative characters. Accordingly, I declared all characters to be divisible into *qualities* (nonrelative characters), *relations* [relative characters], and *representations* [representative characters], instead of into non-relative characters, dual relations [relative characters resulting from dual relations], and plural relations [relative characters resulting from plural relations].

The *specific* error in the *New List* Peirce acknowledges, therefore, is that he did not extend his consideration beyond *representation*, which has '... represents ... to ...' as its corresponding linguistic structure, hence falling short of the idea of plural relations and predicates *in general*. Instead it was implicitly assumed by him that a sufficiently general view was already reached in the *New List*. Note that this is consistent with Peirce's various remarks we saw in **7.3**. Equally noteworthy is the remark that "greater minds" may fall into such mistakes as well. For it is often difficult to tell if an obtained theory is *not* a special case of an even more general theory.

7.4.3 Excessive Generalization

Other similar errors are noted as well (MS 787: 31, c.1899 [CP 1.567]):

> In my paper of 1867, I committed the error of identifying those relations constituted by non-relative characters with relations of equiparance, that is, with necessarily mutual relations, and the dynamical relations with relations of disquiparance, or possibly non-mutual relations. Subsequently, falling out of one error into another, I identified the two classes respectively with relations of reason and relations *in re*.

Here *non-relative character* and *dynamical relation* correspond, respectively, to "internal quality" and "relative quality" in §14 of the *New List* (W 2: 55.25-28). The concept of "necessarily mutual relation" and "possibly non-mutual relation," however, can be much broader and more general than the relations in which an *icon* and *index* stand to their object. For why should, for instance, the class of necessarily mutual relations coincide with the class of relations obtaining among objects that bear intrinsic resemblance to each other? The latter class of relations could be a *proper* subclass of the former (Figure 7.2).

Hence the *specific* error of the *New List* Peirce acknowledges here is that he thought *icons* and *indices*, which are distinguished by the prescision relation, correspond *simpliciter* to the conceivably broader classes of *necessarily symmetric relations* and *possibly asymmetric relations*, respectively. Such errors were repeated, Peirce then adds, when he thought that "relations of reason" and "relations *in re*" correspond to these two kinds of general relations again. It is an inattentive judgment, of course, since the former two relations can be special cases of *necessarily symmetric relations* and *possibly asymmetric relations*. The temptation was obviously strong for Peirce, since he searches for *genuine* cases of the relations that are logically defined, of which his search
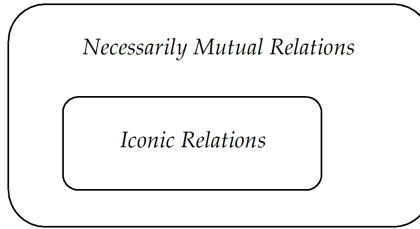
Figure 7.2: The concept of *necessarily mutual relation* could be much more general than the concept of *iconic relation.*

for a "genuine triadic relation"[20] was a good example. But it goes without saying that a seemingly genuine case could turn out to be a special case of a more general case.

7.4.4 The Nature of the 'Errors'

It is, accordingly, quite important to grasp the nature of the errors of the *New List* Peirce acknowledges. It is not that he finds the ideas themselves wrong, but considers that the degree of generality he previously ascribed to them was not precise. The following passage from the same manuscript exhibits a similar train of thought while containing some further information (MS 787: 32-33, c.1899 [CP 2.340]):

> In 1867 I defined a symbol as any general representamen; and so far I was right. But I immediately proceeded after the traditional manner, to divide symbols into *terms, propositions and argumentations,*[21] with the meaning that "terms" have no assertoric element, and there I was wrong, although the division itself is not so much wrong as it is unimportant. Subsequently, noticing that I had classed natural symptoms both among indices and among symbols, I restricted symbols to conventional signs, which was another error. The truth is that my paper of 1867 was perhaps the least unsatisfactory, from a logical point of view, that I ever succeeded in producing; and for a long time most of the modifications I attempted of it only led me further wrong.

It is interesting that Peirce thinks he attributed no "assertoric element" to "terms" in §15 of the *New List* (W 2: 57.13-14). For the definition of *symbol* in §14, as we have seen,[22] does have it that *symbols* are signs whose qualities are imputed to their objects, and more importantly, it is made fairly clear in §15 that the distinction between

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[20] See the last sentence of **7.3** (p.120).

[21] The original expression for "argumentations" was "arguments" in the *New List* (W 2: 57.22). "Argumentations," however, could be more interesting than "arguments," since it could signify greater variation than *arguments*, the latter consisting of propositions in the *New List*.

[22] See **6.3.3.1** (p.93f.) and **6.4.3.1** (p.101f.).

terms, on the one hand, and *propositions* and *argumentations*, on the other, consists in how each form of symbol would *determine* the elements involved in the representation, which are, *ground*, *correlate*, and *interpretant* (W 2: 57.13-22). Hence *terms* should not lack the "assertoric element" altogether, but should be seen as special (weak) cases of *arguments*, as I have attempted to suggest in the previous chapter.[23]

Further, note that Peirce "subsequently" made another "error" by restricting symbols to conventional signs, hence depriving symbol of *generality*, such that it was the *New List*, not the subsequent modification, that was the "least unsatisfactory." The conclusion to be drawn from these observations is that Peirce either failed to sufficiently generalize his ideas of the *New List*, or wrongly thought that the ideas in the *New List* were already sufficiently general. Hence it also becomes plain that there is no contradiction between Peirce's high appraisal of the *New List* and the self-criticisms appearing in one and the same manuscript.[24]

7.5   Peirce and Kant on Representation

7.5.1   *Vorstellung* and *Representation*

As we would notice by now, an instinct for *generalization* is very often at work in Peirce's philosophical inquiry, which may well reflect the spirit of modern mathematics, a field Peirce was trained in. The history of modern mathematics is in part a history of generalization, not to mention the discovery of non-Euclidian geometry, abstract algebra, higher dimensional analysis, and so on. The transformation of the ordinary concept of 'cause and effect' into that of a mediated triadic relation certainly witnesses a mind geared to bold generalization.

Peirce's view of representation was not reached through a sudden impulse of thought in 1867. Two years prior to the *New List*, we see Peirce developing his theory of mediating representation under the influence of Kant, or better, in his struggle to generalize Kant. A slightly long passage informs us how the theory of representation in the *New List* was anticipated (W 1: 257, 1865):

> Kant you remember distinguishes in all mental representations the matter and form. The distinction here is slightly different. In the first place, I

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[23] See **6.5.3** (p.108f.) and **6.5.4** (p.110f.). Accordingly, the correction Peirce has in mind at this later date is: "Every symbol, as involving an assertion, or *rudimentary* assertion, is general, and in the sense we speak of a general sign"(MS 787: 33, c.1899 [CP 2.341]; my emphasis). The trouble with *terms* in §15 of the *New List*, on the other hand, is that their characterization is much weaker than what the definition of *symbol* in §14 requires. If a sign is a *symbol*, the determination of *ground* is not prescindible from — cannot be considered to the neglect of — the determination of *interpretant*, which is made somewhat unclear in §15. For this reason, *terms* in §15 appear too close to *icons*, which, according to Peirce, *assert nothing* (see the first block citation of **6.5.3**). Note also that Peirce presents no argument for the classification of symbols in §15, which hastiness is hinted at in the block passage cited here.

[24] In much the same way Peirce mentions in 1893 his failure to sufficiently generalize the idea of *informed breadth* in his other 1867 paper, "Upon Logical Comprehension and Extension." [Compare MS 421: 27, 1893 [CP 2.407n1] with W 2: 78-79, 1867.]

do not use the word *Representation* as a translation of the German *Vorstellung* which is the general term for any product of the cognitive power. Representation, indeed, is not a perfect translation of that term, because it seems necessary to imply a mediate reference to its object, which *Vorstellung* does not. I however would limit the term neither to that which is mediate nor to that which is mental, but would use it in its broad, usual, and etymological sense for anything which is supposed to stand for another and which might express that other to a mind which truly could understand it. Thus our whole world—that which we can comprehend—is a world of representations.

The search for a general theory of mediating representation is perceivable. In Peirce's view, *Vorstellung* barely indicates structure, whereas *representation* implies mediation, although at this stage mediation appears not to be a *necessary* condition of representation as in the *New List*. The general notion of *representation* finds its corresponding expression in §9 of the *New List* (W 2: 54.2-10):

The term "representation" is here to be understood in a very extended sense, which can be explained by instances better than by a definition. In this sense, a word represents a thing to the conception in the mind of the hearer, a portrait represents the person for whom it is intended to the conception of recognition, a weathercock represents the direction of the wind to the conception of him who understands it, a barrister represents his client to the judge and jury whom he influences.

It is important to observe that for Peirce *representation* does not need to depend upon the specific mental or cognitive faculty of human agents. A portrait, not a human viewer, *represents* a figure, in the sense that if there is a competent agent, it will be interpreted as a sign conveying information about such and such a figure. Likewise, a weathercock, not necessarily a human observer of wind, *represents* the direction of wind. A word, not particular users of the word, *represents* what it means.

7.5.2 Things Producing Representations

From this it would be faithful to Peirce's position to say that representations, or signs, refer to the expressibility of things in the world—real or fictive—including ourselves. But would this not, one might ask, mark a drastic departure from Kant? Why did Peirce, for example, think in the passage above that his conception of representation introduces a distinction only "slightly different" from that of Kant? The simplest reply is that Peirce in fact considers that his theory of representations diverges from Kant much less than it appears.

To start with, we need to note that representation in Kant's *Critique of Pure Reason* is a broad notion. More specifically, *repraesentatio* subsumes *perceptio*, *sensatio*, and *cognitio*, where Kant takes *repraesentatio* as the genus, or "*representation* in general [Vorstellung überhaupt]" (A320/B376-377). "Under this [genus]," Kant says, "stands

the representation with consciousness"(*ibid.*), from which it follows that Kant's concept of representation is hardly confined to conscious representation.

It is also to be remarked that the thinking subject, the *I think* or *Ich denke* in Kant, does not exclusively represent things for itself. Quite the contrary, it is most important in Kant's theory that there is a self-generative aspect to representations in the sense that they arise from *things*. Thus the opening of the introduction to the second edition of the *Critique*, which Peirce often considers, states as follows: "For how should our faculty of cognition be awakened into action if not through objects that stimulate our senses and in part themselves produce representations [teils von selbst Vorstellungen bewirken]"(B1). As Kant stresses in the *Prolegomena* as well,[25] it is the "things [Dinge]" that "produce in us [in uns wirken]"(4: 289) representations.[26]

As we may recall from Peirce's list of categories, on the other hand, *representation* is the deepest of the three derived elementary conceptions that directly unite the manifold of sense, the result of which is the growth of correlates into spatiotemporal objects of cognition, that is, if the analysis is considered *genetically*. Kant's view of time and space as forms of intuition is not found altogether clear or acceptable by Peirce,[27] but as long as (1) representation is interpreted in broadest terms, and (2) spatiotemporal forms arise from *objects*, not directly from the *I think*, Peirce can take a position close enough to that of Kant.[28] Take, for instance, Kant's following remark on the representation of time (A182/B225):

> Now time cannot be perceived by itself. Consequently, it is in the objects of perception [in den Gegenständen der Wahrnehmung], i.e. in the appearances, that the substratum must be encountered, which represents time in general [welches die Zeit überhaupt vorstellt], and in which all change or simultaneity can be perceived in apprehension through the relation of the appearances to it.

Kant's theory of intuition is certainly not a concern for us. What would be important for Peirce is to observe in Kant that *representation* runs rather deep and broad in the substrate of experience, which substrate, *not* the conscious agent, *represents* time as a form integrated into objects in their inchoate phases, of which Peirce's *present in general* is recognizably a counter-part.[29] In this sense Kant makes clear that, *phenom-*

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[25] Peirce studied Kant's *Prolegomena* in his youth along with the *Critique* (MS 619: 10, 16-17, 1909).

[26] There is obviously no space in this study to discuss how exactly *things* produce representations *in us* on Kant's account. Yet an analogy may run deep between Kant's concept of *auto-affection* [Selbstaffektion] and the structure of Peirce's *iconic representation*, which was very briefly touched upon in **6.5.5** (p.111).

[27] See, for example, the last paragraph of (ii), **3.1.3.3** (p.41f.).

[28] In 1868 Peirce writes: 'The above theory [of mine] of space and time does not conflict with that of Kant so much as it appears to do. [. . .] The apprehension of space and time results, according to him [Kant], from a mental process,—the "Synthesis der Apprehension in der Anschauung" (See *Critik d. reinen Vernunft.* Ed. 1781, pp.98 *et seq.*[A98f.]) My theory is merely an account of this synthesis'(W 2: 199, 1868). I will, however, not enter the complicated subject of *intuition* in this study, since the topic requires a detailed account of Peirce's works of 1868.

[29] See **1.3.2** (p.13f.).

enally speaking, spatiotemporal forms belong in *things*, which thesis is of course to be distinguished from the status of spatiotemporal forms as a matter of *quaestio juris* in transcendental philosophy. No claim regarding the latter needs to be made by Peirce.

Chapter 8

New List §15

8.1 Peirce on Kant's 'I think'

It is conceivable that Peirce, especially around 1865, did not think that his generalization of the concept of representation was significantly different from that of Kant, because in the *Critique* representation is in principle a very broad concept that comprises both conscious and unconscious representations,[1] a large part of which could be produced by things themselves. Moreover, multiple layers of progressively rudimentary representations are revealed in the *Critique*, because every representation not only has *its* object but is itself capable of becoming an object of further representations,[2] hence leading to a potentially endless chain of representations, a view shared by Peirce as well.[3]

It is, on the other hand, Kant's well-known thesis that the unity of the manifold of sense is enabled by the numerically identical self, the transcendental 'I,' to which all representations *may* eventually belong. "For otherwise [denn sonst]," so runs Kant's argument, "I would have as multicolored, diverse a self [ein so vielfarbiges verschiedenes Selbst] as I have representations, of which I am conscious"(B134). Kant clearly sees that arrays of representations would form a thick fabric of experience, in which diversely tinctured phases of the self may set themselves in communal interaction, so to

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[1] Peirce writes in 1865: "The term *representation* denotes with Hamilton a mediate cognition, with Hegel a mental image, and with Kant a cognition *in the widest sense*"(W 2: 323, 1865; second italics mine). Note that Hegel gives a limited status to *Vorstellung*, as he does, for instance, in §20 of the *Encyclopedia of the Philosophical Sciences*.

[2] In Kant's words: "All representations, as representations, have their object, and can themselves be objects of other representations"(A108).

[3] I will not pursue in this study whether for Peirce there is/are a *thing-in-itself / things-in-themselves* lurking behind the chain of representations, since the topic cannot be discussed without shifting our focus to Peirce's works of 1868. Minimally, I note that Peirce's rejection of Kant's *thing-in-itself / things-in-themselves* was semantical, not ontological, which is consistent up to 1913: 'looking at the universe from the point of view [such as this] [...] will enable the reader to skip, or at any rate to peruse more intelligently, a good deal that the greatest of all philosophers [Kant] has written about "things in themselves"'(MS 682: 57, 1913). Note the qualified tone heard in the words "skip" and "peruse more intelligently."

speak, but the greater challenge for him is to explore why a self-conscious, identical self is possible amidst such sundry representations. In Kant's view it is insufficient to say that a stream of anonymous representations flows beneath conscious experience. For why would such a flow, we may ask, constitute "*my* representations [*meine* Vorstellungen]"(*ibid.*) instead of remaining an anonymous torrent of representations?

As an attentive reader of Kant, Peirce does not overlook the fundamental issue, but rather attempts to underscore the role of *logic* in Kant and thereby render the theory more general. In particular, Peirce wishes to move away from Kant's 'I think.' A fragmentary note written much later by Peirce gives us a useful clue to Peirce's interpretation of the 'I think' (MS 636: 25-26, 1909):

> There is a celebrated passage in the second edition of the C.d.r.V.*,[4] and a really very notable one, in which Kant says that "the *I think*,"— Das: Ich denke—must *be able* to accompany all his ideas, "since otherwise they would not thoroughly belong to me." A man less given to discoursing might remark on reading this, "For my part, I don't hold my ideas as ownty-downty; I had rather they were Nature's, and belonged to Nature's author." However, that would be to misinterpret Kant.

We may notice that Peirce has in mind §16 of Kant's transcendental deduction of categories in the second edition of the *Critique*.[5] As Peirce points out, it is nothing but a misinterpretation of Kant to *simply* drop the 'I think' and thereby claim that the seemingly ego-centric theory of representations is replaced with some healthier doctrine of 'natural processes.' For such an interpretation fails to understand why the 'I think' must be there for Kant.

Instead of ignoring Kant's insight, therefore, Peirce's seeks for a subtler strategy to reinterpret the *Critique*, which is mirrored in a few sentences that follow the quotation above (MS 636: 26, 1909):

> In his first-edition, he [Kant] does not call the act "the *I* think," but "the object = *X*." That which the act has to effect is the consecution of ideas: now the need of consecution of ideas is a *logical* need, and is due not, as Kant thinks, to their taking the form of the *Urtheil*, the assertion, but to their making an *argument*; and it is not "I think" that that always virtually accompanies an argument, but it is "Don't you think so?"

To begin with, Peirce is correct that 'the object = *X*' is characteristic of the first edition of the *Critique*. It is important to bear in mind that 'the object = *X*' is not an *object*

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[4] The asterisk refers to Peirce's explanation of the abbreviation and spelling of Kant's *Kritik der reinen Vernunft*. Peirce prefers to transliterate the German word 'Kritik' not as 'Critique' but as 'Critic' or 'Critik,' for which he often develops etymological arguments. I will, however, not deal with the word problem since it is not essential to the inquiry at hand.

[5] Peirce has compressed Kant's argument of §16 by starting with "Das: Ich denke, muß alle meine Vorstellungen begleiten k ö n n e n"(B 131-132), and then moving down to "weil sie [Vorstellungen] sonst nicht durchgängig mir angehören würden"(B133). Note that after "Vorstellungen" Kant inserts "even if I am not conscious of them as such [ob ich mir ihrer gleich nicht als solcher bewußt bin]"(*ibid.*).

in the ordinary sense of the term. For it is "the formal unity of the consciousness in the synthesis of the manifold of the representations"(A105), the "transcendental object [transcendentaler Gegenstand]" which is "always the same"(A109), a "correlate of the unity of apperception [ein Correlatum der Einheit der Apperzeption]"(A250), which, as such, can also be "the subject of thought [das Subjekt der Gedanken]"(A358). There is, accordingly, good reason for Peirce to equate 'the object = X' with the 'I think.'[6]

While it is beyond the purpose of this study to consider Kant's notion of *self* as a transcendental object, what draws Peirce's attention is that the 'I think' was originally conceived by Kant as cutting across the *subject* and *object*, since it is an 'I think,' hence a *subject*, which is also an *object*, namely a *correlate* of the unity of apperception. This means that 'object = X' is a device that pushes the locus of apperception away from the sharply conscious self toward the more objectual or passive phases of cognition. It then appears that the consecution of ideas need not always require an explicit conscious self.

But what bears greater significance for Peirce is that *logic* does not require that ideas take the form of *judgment* for its laws to be applicable, but much *less* than that, namely, only a unity of representations, more specifically of *symbols*, which form an *argument*. As a way of illustration, if there happens to be a propositional attitude, such as in the case, *I think* that Γ, where Γ is a consistent set of propositions, that is certainly fine. But the observation to be made is that the laws of *logic* should apply to the content of Γ, regardless of the propositional attitude 'I think.' If Γ is an inconsistent set of propositions, for instance, it is clear that we cannot render Γ consistent by changing our propositional attitude. Further, since every *symbol* involves an assertoric element, of which the *argument* is the genuine or strongest form,[7] it would be better to say, Peirce suggests, that "Don't you think so?" accompanies the argument rather than the 'I think.' Of course "Don't you think so" is for Peirce an effect of the *argument*, namely, a property of Γ itself.

8.2   Objective Logic

8.2.1   'My Representation' and 'Representation'

A strategy very close to this, but in some sense much sharper, is pursued in §15 of the *New List*, a section that builds upon the theory developed in the first fourteen sections. After declaring "I shall now show how the three conceptions of reference to a ground, reference to an object, and reference to an interpretant are the fundamental ones of at least one universal science, that of logic"(W 2: 56.13-15), Peirce now tries to push

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[6] We should of course note that the 'I think' is regarded by Kant as a 'transcendental object' in one of its many senses. For the various usage of 'transcendental object [Objekt/Gegenstand]' in the *Critique*, see A46; A 191/B236; A247/B304; A250-251; A253; A277-278/B333-334; A358; A361; A366; A372; A379; A390; A393-394; A478/B506; A494/B522; A538/B566; A540/B568; A545/B573; A565/B593; A613/B641; A698/B726.

[7] See the first paragraph after the block citation in **7.4.4** (p.123f.), together with the third paragraph of **6.5.4** (p.110f.).

Kant's *Critique* further by focusing on the laws of *logic*. In Peirce's view it is what Kant's own position would imply.

One of the important contentions of the *Critique* is that transcendental logic applies to 'all possible experience [alle mögliche Erfahrung],' such that the sphere of logic does not depend upon any actual, and hence particular, 'I think.' For if that were the case, logic would be relative to that particular 'I think' and hence be merely empirical. With this in mind, Peirce makes the next bold move. There is, Peirce argues, not even the need to refer to the understanding, or 'I think,' since if everything is indeed relative to the structure of understanding, we may safely assume that nothing would be lost by not referring to it (W 2: 56.28-33):

> All symbols, indeed, are in one sense relative to the understanding, but only in the sense in which also all things are relative to the understanding. On this account, therefore, the relation to the understanding need not be expressed in the sphere of logic, since it determines no limitation of that sphere.

The reasoning is rather faithful to Kant's view, since *within* the boundaries of possible experience, it is precisely the relativity to understanding that *guarantees* the uniform validity of logical forms. If nothing is to fall outside the sphere of possible experience, as Kant asserts, nothing *within* possible experience is to fall outside the sphere of logic. In brief, relativity to understanding *defines* the proper sphere of logic, which indicates, therefore, no limitation *within* that sphere. This is tantamount to saying that inquiry unfolds in a potentially unbounded realm filled with logical norms.

Further, it is not difficult to see that the logical forms of possible experience, or categories, would correspond to 'symbols' in Peirce's framework, since they are conceived to be universal, and hence general. Symbols are signs whose qualities are imputed to the correlates, or the phases of objects, in a way analogous to Kant's categories being imposed upon the sensuous manifold. Besides, pure concepts of the understanding are general *rules* for Kant, that is, the synthesis "in accordance with concepts [nach Begriffen]" simply means "in accordance with rules [nach Regeln]"(A108) for him.[8]

A rule, on the other hand, is called "a *law* [ein Gesetz]" by Kant, if the manifold is posited necessarily in accordance with it (A113). Hence Kant's pure categories of understanding are laws, or *conceptual habits* as Peirce would have it, that are effective across the entire realm of possible experience. In the frame of the *New List* they no doubt belong to the species of "*general signs*"(W 2: 56.11). But the realm of all possible experience is clearly coextensive with the phenomenal world itself. It thus follows that the laws of logic are as universal as natural laws, hence suggesting in turn that natural laws can be seen as a species of symbols, as Peirce would later suggest.

With regard to the 'I think,' on the other hand, it is easy to observe that a functionalist interpretation of concepts is highly advantageous. For there is no need to presuppose an agent who is in *possession* of the concepts any more than we need an

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[8] Kant later restates that a "concept" is "a rule of the synthesis of perceptions"(A722/B750).

agent to which natural laws belong. Cognition obtains not because some mind *possesses* a set of rules, but rather a mind is able to furnish itself with cognition because rules hold good throughout the phenomenal world. As natural laws do not require a ruler, logic does not need to call for any reference to a particular thinker.

At this point it is important to note that Peirce did not *simply* drop Kant's 'I think.' For the 'I think' is not eliminable so long as representations are to be called *mine*, a point stressed by Kant. In "the sphere of logic"(W 2: 56.32), however, no distinction of the thinking agent is required, for the laws of logic do not vary depending on *whose* representation a representation is. In other words, Kant's condition '*my* representation' is much stronger than what *logic* requires, or in other words, there is an extra-logical element imported into Kant's transcendental logic. By focusing on *logic* itself, therefore, Peirce observes that 'my representation' can be *weakened* to 'representation.'

The argument is subtler than it may appear. Peirce *is* of the opinion that everything is relative to understanding, but from this it does not follow that some of us must be a privileged agent, or agents, in the phenomenal world. The following remark of Peirce, although slightly long, offers a good account of his view (W 3: 51-52, 1872):

> But Kant holds that though there is a distinction between cognition with self-consciousness and cognition without self-consciousness, yet the "I think" accompanies all our judgments; or rather [...] that it must *be able to* accompany every judgment. [...] But it is only necessary [...] that there should be a recognized unity in the objects of thought and that there should be a unity of the ego, but not that I should always refer the one to the other. And this seems to be nearly Kant's own opinion. For he does not [...] hold that the "I think" of which he speaks is a perception of one's own existence or that it is any knowledge of fact at all, but only that it is a form or point of view from which objects are conceived. To think consistently is one thing, to think about ourselves is surely quite another.

Note that on Peirce's account, too, there must be some unity of ego, whatever it is, in so far as laws of *thought* hold good in the phenomenal world. But since Kant himself insists that it is not even a concern for him that the representation of the 'I' be actual (A117), the 'I' is a pure pronoun for Peirce, a neutral variable $= X$, an 'IT' if we please, whose domain is not restricted to the experience of any singular self. In this connection there is little doubt that Peirce also took notice of Kant's following passage with respect to 'object $= X$': "Through this I, or He, or It (the thing [das Ding]), which thinks [welches denkt], nothing further is represented than a transcendental subject of thoughts, which is recognized only through the thoughts that are its predicates"(A346/B404). Therefore, if it is indeed the *logical forms* of all possible experience that Kant wished to underscore, Peirce's point is that 'I' as a neutral variable would take the entire phenomenal world as its domain in Kant's opinion, too.

Such a thesis, namely, that *logic* cuts across actual and possible experience as well as distinct agencies, and hence offers a unifying account of symbolic forms in general, is a continuation of Peirce's view expressed a year before the *New List*. In 1866 Peirce

wrote: "personality lies in the unity of the *I think*—which is the unity of symbolization, the unity of consistency—and belongs to every symbol" (W 1: 500, 1866). Note that the unity of the *I think* is a special case of the unity of symbolization. In other words, it is the *I think* that is to be explained in terms of the unity of symbolization, *not* the unity of symbolization in terms of the *I think*.[9]

8.2.2   The Logic of Objects and Events

8.2.2.1   Logic of Objects

Along a similar line of thinking, whether an argument is written on paper or chalkboard, spoken out by a student, or thought by a philosopher, does not affect the rules of logic. "But the rules of logic," thus Peirce writes, "hold good of any symbols, of those which are written or spoken as well as of those which are thought"(W 2: 56.34-28). He then follows up on his view as follows (W 2: 56.33-57.1):

> But a distinction can be made between concepts which are supposed to have no existence except so far as they are actually present to the understanding, and external symbols which still retain their character of symbols so long as they are only *capable* of being understood. And as the rules of logic apply to these latter as much as to the former (and though only through the former, yet this character, since it belongs to all things, is no limitation), it follows that logic has for its subject-genus all symbols and not merely concepts.

By "external symbols," Peirce simply means *words*, as he explains in a subsequent paper (W 2: 82, 1867 [CP 2.418]), while the emphasis on the term '*capable*' continues to reflect the notion of *possible* experience in Kant, meaning that an external symbol retains its character as long as it is understood by a *possible* interpreter.

The being of a word, on the other hand, is certainly not exhausted by a finite number of occurrences. Peirce's later example: 'If the word "man" occurs hundreds of times in a book of which myriads of copies are printed, all those millions of triplets of patches of ink are embodiments of one and the same word"(CP 4.447, c.1903). Peirce is thus making two points in the passage above. First, he admits that words and concepts can be distinguished, and second, he suggests that the difference, however, introduces no boundaries for *logic*. For concepts as general signs have *existence* only when they are in actual operation, but that is the same for words with instantiations. Peirce then reminds us that words stand under no greater limitation than concepts, since everything, including words, is relative to the understanding. "We come, therefore, to this," Peirce states, "that logic treats of the reference of symbols in general to their objects"(W 2: 57.1-2).[10]

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[9] Compare this with Peirce's remark cited at the very end of **4.5** (p.69f.), according to which it is *logic* that informs us about our reasoning processes.

[10] Peirce repeats in the fall of the same year: "Logic treats of the reference of symbols in general to their objects"(W 2: 82, 1867).

The last phrase, reference of symbols "to their objects," should not be overlooked. Note also that the rules of logic "apply to all symbols"(W 2: 56.28), but they "have no immediate application to likenesses or indices, because no arguments can be constructed of these alone"(W 2: 26-27). As we have seen, *icons* and *indices* are essentially fleeting signs, as it were, or as Peirce says later, "neither *icon* nor *index* possesses generality"(CP 1.372, c.1887-1888), such that they cannot subsist beyond their immediate function unless they form part of symbols and are integrated into objects. The logic considered is definitely a logic of objects, or more simply of *things*, a consequence of *semeiotics* in §14 of the *New List*.

The significance of the *object* thus stands out. Recalling that a symbol involves an *index* and *icon*, Peirce is able to introduce *denotation* as "the *direct* reference of symbol to *its object*"(W 2: 59.3-4; my italics); *connotation* as "the reference of the symbol to its ground, *through its object*, that is, its reference to the common characters of *its objects* [correlates]"(W 2: 59.4-6; all italics mine); and *information* that a symbol "*embodies*" as "its reference to all the synthetical propositions in which *its objects* in common are subject or predicate"(W 2: 59.6-9; my italics). The denotative element of the proposition is an *index*, the connotative element an *icon*.[11]

8.2.2.2   Logic of Events

The details of *denotation*, *connotation*, and *information*, on the other hand, are not pursued in the *New List*. Peirce says 'I propose to treat this subject in a subsequent paper"(W 2: 59.1-2).[12] But it remains suitable to our inquiry to observe that the insight is guided by the analysis of *proposition formation*. Indeed it is in §15 that proposition formation is effectively incorporated into the semeiotics of the *New List*. A highly compressed remark of Peirce explains this as follows (W 2: 56.16-19):

> Logic is said to treat of second intentions as applied to first. It would lead me too far away from the matter in hand to discuss the truth of this statement; I shall simply adopt it as one which seems to me to afford a good definition of the subject-genus of this science. Now, second intentions are the objects of the understanding considered as representations, and the first intentions to which they apply are the objects of those representations. The objects of the understanding, considered as representations, are symbols, that is, signs which are at least potentially general.

Since Peirce takes the definition of *logic* here as unproblematic, it is not necessary for us to call it into question. By *first intentions*, Peirce means representations of first-order objects, or simply *things*, and by *second intensions* he has in mind the second-order representations of those representations of first-order objects,[13] hence often representations of classes and predicates, although the philosophical reflections involved are far richer than formalistic accounts.

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[11] See **5.3.3**, footnote 6 (p.79).
[12] See "Upon Logical Comprehension and Extension"(W 2: 70-86, 1867).
[13] See Figure 8.1 (p.136).

The simplest way to grasp Peirce's view is to recall the hierarchy of categories. As Peirce states above, *second intentions* are by definition representations of first-order representations considered as *objects of thought*, hence more abstract than *first intentions*, which are the representations that have *things* as their objects. Figuring this back into the structure of *proposition*, the *subject* of a proposition, which is an *index*, can be seen as a *first intention*, whereas the *predicate*, which is an *icon*, can be seen as a *second intention*, because it is a character represented to the mind *through its object* represented by numerous *first intentions*. We could also say that first intentions represent correlates, while second intentions represent qualities that arise from those correlates.

The consideration that should receive weight is that reference to a ground, namely *quality*, can be prescinded from reference to a correlate, or *relation*, but reference to a correlate can *not* be prescinded from reference to a ground. More intuitively speaking, a quality is thinkable without reference to any individual that instantiates it, but an individual is unthinkable without a quality, because as an individual, it needs to be *distinguishable* from other things.[14] Or we could also repeat that an *icon* is thinkable without an *index*, but an *index* is unthinkable without an *icon*, which is what the argument of §14 of the *New List* says.

What follows from this, therefore, is that, from a *logical* point of view, the *subject* of a proposition, the *index*, is unthinkable without the *predicate*, or the *icon*, of the proposition. This must not be confused with a *genetic* account. It might appear *conceivable* that an unknown *subject* is present to the mind *first*, and *then* the mind attributes a quality to *it*. But that is precisely what the *New List* denies. A cognition *never* germinates from the bare *substance* alone, for substance can *not* be prescinded from the other higher categories, meaning that it always has to be already part of the higher logical structures that guides the process of proposition formation.

The consideration, consequently, amounts to this: it is not logically sound to hold that second-intentional representations simply *follow* first intentional-representations, but rather, first-intentional representations grow as second- and higher-intentional representations develop. In other words, it is not that a *subject*, an *index*, is there first *without* a predicate, or without an *icon*, but quite the contrary, it is only through the formation of the predicate that a subject is disclosed. We do not point to things in complete blindness, and *then* struggle to know them. Pointing and knowing must evolve together.

This is precisely why a genetic account faces greater problems than a logical account. For cognition at its initial stage lacks recognizable structure, and no phenomenology can describe absent structures. What can be at best said is that, genetically speaking, *cognition* identifies nothing definite prior to the formation of proposition, but nevertheless a rudimentary form of cognition grows anticipatorily in a transparent logical structure, as it were.

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[14] Recall from §4 that: 'it would be quite senseless to say, "*A* has the common characters of all things," in as much as there are no such common characters"(W 2: 50.19-22).

At this point, it becomes clearer that the genetic depth of the cognitive process *must* be collapsed for Peirce, in that we cannot genetically describe what is merely anticipated. Hence it would be more desirable to interpret the relationship between *first* and *second intentions* as in Figure 8.1, right, rather than like Figure 8.1, left.[15]
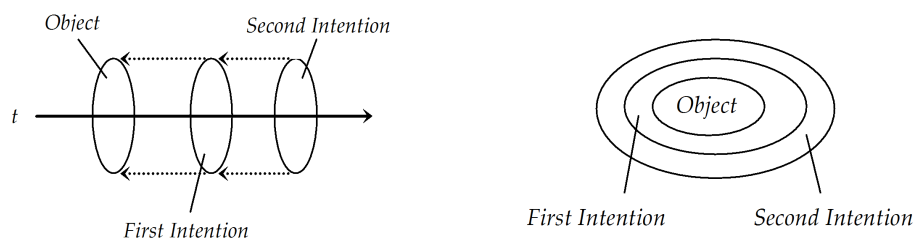

Figure 8.1: Peirce's *first* and *second intentions* seen *genetically* (left) and *logically* (right).

A generalization of the idea to *higher order intentions* would give us a stronger sense of a teleology operating in this view. As long as n-th order intentions can *not* be prescinded from $n + 1$-th order intentions, while the higher order intentions can be prescinded from lower order intentions, an n-th order intention is not merely *followed* by an $n + 1$-th order intention. The transparent outer structure, the $n + 1$-th order intention in this case, is already there, as it were, without which the n-th order intention is not able to operate (Figure 8.2). This means that the *structure* is not *anticipated*, but rather *instantiated*. In other words, what *is* anticipated is that individual events conform to the pervasive logical structure with relatively small deviations.
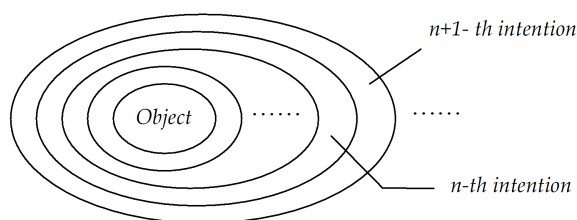

Figure 8.2: Generalizing the idea to higher order intentions.

Since categories are supposed to pervade the entire phenomenal world, this would be a natural direction in which the theory would be able to move. If we translate the logical model back into a genetic model, a process of thought emerges, through which

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[15] Compare Figure 8.1, right, with Figure 5.3 (p.79).

an early form of Peirce's *logic of events* becomes visible in §15 of the *New List*.

8.3 'Logic' in the *New List*

8.3.1 The Indispensability of Critical Logic

Form 8.2.1 and 8.2.2, it can be seen that (1) Peirce opens a sphere of objective logic that does not need to refer to any particular 'I think' but does refer to *thought in general*, and that (2) he offers a highly compressed explanation of why a stratified thought-structure gives rise to a form of teleology. The move toward objective logic within a Kantian framework was probably anticipated by Peirce in 1865, when he wrote: "And perhaps the strongest point of Hegelianism is the purely impersonal character which it attributes to apperception. In this respect, I follow Hegel; but I do so without budging from the Critical stand-point"(W 1: 256, 1865).

It is important to note that, while arriving at a form of objective logic, the actual path Peirce followed was not to imitate Hegel but to expand Kant's logic from within. In particular, direct observation is insufficient to decide upon fundamental questions. It is worth listening to Peirce's words on Kant's 'Ich denke' again: 'The unity of Thought does not consist in that *Ich denke* which Kant, in his first-edition, called the "= x," and not "Ich denke," or "I opine." The unity of thought, if we could view our own consciousness, would probably consist in the *continuity of life of a growing idea*'(MS 637: 23, 1909). Although Peirce does think that ideas grow, it is not self-evident for him that we can actually observe such growth with accuracy or certainty, which is why we must be informed by critical logic.[16] This is of course the basic stance of the *New List* as well.

8.3.2 Logic in the Narrower and Wider Sense

As the forgoing considerations suggest, *logic* is understood in a fairly wide sense by Peirce in the *New List*. Laws of thought and laws of nature, or of the phenomenal world as a whole, would be both symbolic. The following passage from 1892 is not only interesting but also very telling in this regard (CP 3.422, 1892):

> Kant taught that our fundamental conceptions are merely the ineluctable ideas of a system of logical forms; nor is any occult transcendentalism requisite to show that this is so, and must be so. Nature only appears intelligible so far as it appears rational, that is, so far as its processes are seen to be like processes of thought. I must take this for granted, for I have no space here to argue it.

Let us note two things. First, Peirce is drawing directly upon Kant, *not* Hegel, when he likens natural processes to the processes of thought. Second, and more importantly,

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[16] On "inward, or mental, characters," Peirce writes around 1913: "we *certainly cannot* directly observe [them] in others, while it is *not certain that we can* directly and accurately observe them even in ourselves"(MS 682: 55, c.1913).

§15 of the *New List*, brief as it is, offers one of the clearest explanations of how Peirce makes his transition from laws of thought to laws of the phenomenal world within his general theory of representations. He would occasionally restate similar conclusions later, but a precise account of such a move is not easily found in his other writings.

It might appear, on the other hand, that *logic* is given a very limited scope in a paragraph of §15, which seems to contradict the proposed interpretation. Here is what Peirce writes (W 2: 57.1-10):

> We come, therefore, to this, that logic treats of the reference of symbols in general to their objects. In this view it is one of a trivium of conceivable sciences. The first would treat of the formal conditions of symbols having meaning, that is of the reference of symbols in general to their grounds or imputed characters, and this might be called formal grammar; the second, logic, would treat of the formal conditions of the truth of symbols; and the third would treat of the formal conditions of the force of symbols, or their power of appealing to a mind, that is, of their reference in general to interpretants, and this might be called formal rhetoric.

It may be considered from this that the characterization of *logic* is too narrow here, especially when compared with Peirce's later view that *logic* is *semeiotics* interpreted most broadly. It is, for example, well known that logic in its broader sense refers to the general theory of signs for Peirce (CP 1.444, c.1896):

> In its narrower sense, it [logic] is the science of the necessary conditions of the attainment of truth. In its broader sense, it is the science of the necessary laws of thought, or, still better (thought always taking place by means of signs), it is general semeiotic, treating not merely of truth, but also of the general conditions of signs being signs (which Duns Scotus called *grammatica speculativa*,[17] also of the laws of the evolution of thought, which since it coincides with the study of the necessary conditions of the transmission of meaning by signs from mind to mind, and from one state of mind to another, ought, for the sake of taking advantage of an old association of terms, be called *rhetorica speculativa*, but which I content myself with inaccurately calling objective logic, because that conveys the correct idea that it is like Hegel's logic.

Given Peirce's account, it is reasonably clear that logic as "one of a trivium of conceivable sciences"(W 2: 57.2-3) in §15 of the *New List* would correspond to logic in "its narrower sense" in this passage, while in its "broader sense" logic is "general semeiotic" including objective logic, hence possibly suggesting a discrepancy concerning what exactly is understood under the title of *logic*.

The truth, however, is that Peirce is already, and simply, using the term *logic* in both the narrower and broader senses in the *New List*. For when Peirce declared that

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[17] The CP edition inserts an asterisk here and refers the reader to "*Opera Omnia Collecta*, L. Durand, T. 1, pp.45-76," but there is no such reference in the original manuscript (MS 900: 22, c.1896).

logic treats of "second intentions as applied to first"(W 2: 56.16), it is by no means confined to logic in the narrower sense, which should be clear from what we saw in **8.2.2.2**. The point is also reinforced by Peirce in a small footnote in §15, where Peirce presents a critical note on J. F. Herbart (1776-1841) as follows (W 2: 57.36f.):

> Herbart says: "All our thoughts can be considered from two sides; partly as activities of our mind, partly with respect to *what* is thought through them. In the latter regard they are called *concepts*, which word, by signifying what is *conceived*, requires us to abstract from the ways in which we may receive, produce, or reproduce the thought."[18] But the whole difference between a concept and an external sign [symbol] lies in these respects which logic ought, according to Herbart, to abstract from.

In the sense already explained, *concepts* and *words* are of the same nature for Peirce, since they are internal and external symbols, but the two species of symbols are distinguished from each other with respect to the modes and manners in which they function. What Peirce holds is that, while the rules of logic apply to both symbolic forms, logic should not be indifferent to the distinct conditions under which each form of symbol operates. This indicates that *logic* is not limited to the study of "formal condition of truth" (W 2: 57.6-7) alone, meaning that Peirce understands *logic* in the wider sense as well.

It is also helpful to recall that Peirce mentions the "trivium of conceivable sciences" of the *New List* in a letter of 1908, where he also holds that there is an "undivided science" of signs (EP 2: 481-482, 1908 [CP 8.342]):

> In my paper of 1867 May 14 [. . .] I said, "We come to this, that logic treats of the reference of symbols in general to their objects. In this view it is one of the trivium of conceivable sciences.[. . .]." I should still opine that in the future there probably will be three such sciences. But [. . .] for the present the cenoscopic studies (i.e., those studies which do not depend upon new special observations) of all signs remain one undivided science [. . .].

Apparently Peirce continues to think that there is *logic* in the narrower sense, while he also considers a "one undivided science" of signs, and this in relation to §15 of the *New List*. Taken together with the other circumstances considered, it is safe to say that the term *logic* is used in both the narrower and wider sense in the *New List* as well.

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[18] Peirce cites Herbart in German: "Unsre sämmtlichen Gedanken lassen sich von zwei Seiten betrachten; theils als Thätigkeiten unseres Geistes, theils in Hinsicht dessen, *was* durch sie gedacht wird. In letzterer Beziehung heissen sie *Begriffe*, welches Wort, indem es das *Begriffene* bezeichnet, zu abstrahiren gebietet von der Art und Weise, wie wir den Gedanken empfangen, produciren, oder reproduciren mögen." [From *Lehrbuch zur Einleitung in die Philosophie* (see editorial note in EP 1: 373).]

8.4 Semeiotics Applied to *Arguments*

8.4.1 Deduction

The scope of *logic* in the *New List* broadens further toward the end of §15, where Peirce considers three distinct forms of arguments, *deduction*, *hypothesis*, and *induction*. Based upon an earlier paper of the same year,[19] he points out that it is "necessary to consider separately propositions of opposition"(W 2: 58.6-7), and gives the following example of a deductive argument (W 2: 58.9-16):

Whatever is the half of anything is less than that of which it is the half;

A is half of B:
∴ A is less than B.

Recalling from the discussion of §14 that a relation involving "opposition" expresses a "relative quality"(W 2: 55.27-28; 31-32), we only need to observe that a relational predicate is brought into focus here. Instead of repeating our previous explanation,[20] it would be of greater interest to observe how Peirce's analysis of arguments is combined with his semeiotics. He writes: "In an argument, the premises form a representation of the conclusion, because they indicate the interpretant of the argument, or representation representing it to represent its object"(W 2: 58.17-19). As one would notice, the *interpretant* of an argument is regarded as another *representation*,[21] meaning that the interpretant is necessarily another *sign*, such that an infinite sign process is indicated. What Peirce says with regard to the *object* of the argument, on the other hand, is that the *conclusion* attempts to interpret, explain, or even flesh out, what the premises jointly express about the thing the conclusion in turn informs the interpreter about. Hence Peirce states that the "conception of reference to an interpretant or third, is always prominent in the definitions of argument"(W 2: 57.28-30).

It is also worth observing that in Peirce's view a conclusion can always be prescinded from a set of premises, but premises can not be prescinded from the concept of conclusion. This simply means that if we regard a set of propositions *as* a set of premises, the conception of *conclusion* must already be involved. We do not need to know, or be able to specify, what the conclusion is, for there could be any number of possible conclusions, but without the conception of conclusion, no proposition, or set of propositions, would be seen *as* premises.

8.4.2 Hypothesis (Abduction)

The next pivotal issue to note is that deductive arguments are probably not Peirce's central concern in §15 of the *New List*. In particular, the *conclusion* of a deductive

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[19] "On the Natural Classification of Arguments"(W 2: 23-48, 1867). [See especially "§7 Mathematical Syllogism"(W 2: 42-43, 1867).]

[20] See **5.5.1** (p.81f.).

[21] Of course the *interpretant* itself was defined as a mediating *representation* in §9 (W 2: 53.37).

argument, an *explaining conception* [22] to follow the premisses, is usually a *simplification* of the premisses,[23] but this need not be the case with non-deductive arguments. For instance, it often happens that a scientist develops a new hypothetical theory from a very small set of data. The formation of *hypothesis* is thus brought forward. In Peirce's view, *logic* in the broad sense must explain the nature of such reasoning. Making use of three distinct forms of representation, Peirce considers as follows (W 2: 58.19-24):

> The premisses may afford a likeness, index, or symbol of the conclusion. In deductive argument, the conclusion is represented by the premisses as by a general sign under which it is contained. In hypotheses, [however,] something *like* the conclusion is proved, that is, the premisses form a likeness of the conclusion.

Then Peirce moves on to discusses the formation of a *hypothesis*, when certain facts are given (W 2: 58.24-32):

> Take, for example, the following argument:—
>
> $$M \text{ is, for instance, } P', P'', P''', \text{ and } P^{\text{iv}};$$
> $$S \text{ is } P', P'', P''', \text{ and } P^{\text{iv}}:$$
> $$\therefore \ S \text{ is } M.$$
>
> Here the first premiss amounts to this, that "P', P'', P''', and P^{iv}" is a likeness of M, and thus the premisses are or represent a likeness of the conclusion.

Admittedly, the reasoning is not deductive. The premisses merely suggest that it is perhaps the case that S is M, since P', P'', P''', and P^{iv} are characters shared by M and S. The inferential move is at most *hypothetical*. Such a type of reasoning would later be called *abduction* by Peirce. For our limited purpose, we may only note that if S is indeed M, it would be less surprising that S and M have common characters such as P', P'', P''', and P^{iv}, while it must be borne in mind that S could always turn out to be a rather small subclass of M. Yet the conclusion in some sense *explains* what the premisses suggest or represent.

8.4.3 Induction

The significance of Peirce's insight becomes perspicuous when *hypothesis*, or equivalently *abduction*, is contrasted to *induction*, which is another form of non-deductive reasoning. Here is a straightforward account Peirce gives (W 2: 58.32-40):

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[22] For *explaining conception*, see the last two paragraphs of **2.1.5.3** (p.29f.).

[23] We can trivially repeat all the premisses and take their conjunction to be the conclusion of the argument, or add an arbitrary number of disjuncts to a conclusion already obtained, such that the conclusion does not appear to be a *simplification* of the premisses even in a deductive argument, but such artificial construction can be disregard as irrelevant.

That it is different with induction another example will show.

$$S', S'', S''', \text{ and } S^{\text{iv}} \text{ are taken as samples of the collection } M;$$
$$S', S'', S''', \text{ and } S^{\text{iv}} \text{ are } P:$$
$$\therefore \text{ All } M \text{ is } P.$$

Hence the first premiss amounts to saying that "S', S'', S''', and S^{iv}" is an index of M. Hence the premisses are an index of the conclusion.

It is important to see that *induction* operates on the *index*. An index is, by definition, inseparable from the relation in which it stands to its object,[24] in this case M, such that any operation based upon the index of the object is as effective as a direct operation on the object itself. Tacit as it is, the view is at least potentially striking in that on such an account statistics and probability theory would not require justification beyond their own computations. That is, since an index is by definition anchored in *its* object and would vanish if the anchoring relation were destroyed, statistical laws should be seen as safe and certain as such simple operations as counting objects and adding them together.

8.4.4 The Distinction between Hypothesis and Induction

In contrast, *hypothesis* or *abduction* operates upon the *icon*, a sign that merely mirrors its object in some respect and in a detached manner,[25] such that the formation of a hypothesis is qualitatively unrestricted, which is the positive side, but all the more requires facts at the starting point and constant testing of the hypothesis, too, which is the negative side, since there is no guarantee that the hypothesis is even a proximate representation of the things we observe.

Since Peirce's analysis of the forms of reasoning and arguments would require a substantive and independent study, it is not suitable for our purpose to pursue the topic further. However, what should be minimally remarked is that the proper distinction between *hypothesis* or *abduction*, on the one hand, and *induction*, on the other, hinges directly upon the distinction between *icon* and *index*. In this connection it is of some interest to take a quick look at a remark made by Peirce in 1913 (EP 2: 234, 1903):

> I have argued in several of my early papers that there are but three essentially different modes of reasoning: Deduction, Induction, and Abduction. I may mention in particular papers in the *Proceedings of the American Academy of Arts and Sciences* for April and May 1867.[26] I must say, however, that it would be very easy to misunderstand those arguments. I did not at first fully comprehend them myself.

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[24] See **6.2** (p.85f.), **6.3.3.2** (p.94f.), and **6.4.2** (p.98f.).

[25] See **6.2** (p.85f.), **6.3.3.2** (p.94f.), **6.4.1** (p.96f.), and **6.5.5** (p.111f.).

[26] The paper of May 1867 is the *New List*. The preceding paper of April is "On the Natural Classification of Arguments" (see footnote 19 above, p.140).

At least prior to 1867, the distinction between *hypothesis* and *induction* in Peirce's writings is not very clear, which is understandable, because it requires a careful differentiation of *index* from *icon* together with the fundamental characterizations of the two kinds of signs. Without an understanding of *icon* and *index*, how the set of premisses of a non-deductive argument represents the conclusion, such as in the cases of *hypothesis* and *induction*, will be unanswered in Peirce's view. The words above do not make it sufficiently clear if Peirce is qualifying his view on the classification on arguments in §15 of the *New List*, but this need not constitute any concern for us. For Peirce in the *New List* is aware that his inquiry has only just been embarked upon (W 2: 59.18-22):

> This is an imperfect view of the application which the conceptions which, according to our analysis, are the most fundamental ones find in the sphere of logic. It is believed, however, that it is sufficient to show that at least something may be usefully suggested by considering this science in this light.

Once again, let us note that *logic* is interpreted broadly here. Granted, *hypothesis* and *induction* are much weaker than *deduction*, but they form a proper subject of the science of logic. "An argument is," Peirce later states, "none the less *logical* for being weak, provided it does not pretend to a strength that it does not possess" (MS 315: 21, 1903).[27] The last statement was made on 14 May 1903, thirty-six years from the day the *New List* was presented to the American Academy of Arts and Sciences.[28]

8.5 Brief Remark on §14 and §15 of the *New List*

As the current study has been aiming at an in-depth analysis of Peirce's single paper "On a New List of Categories," there is no general conclusion to be drawn in closing our discussion. The specifics of my interpretative orientation are addressed in the general introduction to this work, which need not be repeated.

A few last words about §14 and §15 of the *New List* are in order. As we have seen, the philosophy of the *New List* is not narrowly focused upon a self-closed, inward, reductive, or merely deductive process of cognition, which, however, only becomes clear in §14 and §15 of the *New List*. In this regard, there will be much gain in reinterpreting the first thirteen sections of the work in the light of §14 and §15.

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[27] EP 2: 232 transcribes the expression "none the less" as "nonetheless." See Turrisi (1997: 246), which follows the original manuscript.

[28] For the date of the lecture, information can be found in EP 2: 226 and Turrisi (1997: 13-14).

Part V

Appendix

On a New List of Categories. By C. S. Peirce.

1 §1. This[a] paper is based upon the theory already established, that
2 the function of conceptions is to reduce the manifold of sensuous im-
3 pressions to unity,[b] and that the validity of a conception consists in the
4 impossibility of reducing the content of consciousness to unity without
5 the introduction of it.

6 §2. This theory gives rise to a conception of gradation among those
7 conceptions which are universal. For one such conception may unite
8 the manifold of sense and yet another may be required to unite the
9 conception and the manifold to which it is applied; and so on.

10 §3. That universal conception which is nearest to sense is that of
11 *the present, in general.* This is a conception, because it is universal.
12 But as the act of *attention* has no connotation at all, but is the pure
13 denotative power of the mind, that is to say, the power which directs
14 the mind to an object, in contradistinction to the power of thinking
15 any predicate of that object,[c]—so the conception of *what is present in*
16 *general*, which is nothing but the general recognition of what is con-
17 tained in attention, has no connotation, and therefore no proper unity.
18 This conception of the present in general, of IT[d] in general, is rendered
19 in philosophical language by the word "substance" in one of its mean-
20 ings. Before any comparison or discrimination can be made between
21 what is present, what is present must have been recognized as such,
22 as *it*, and subsequently the metaphysical parts which are recognized by
23 abstraction are attributed to this *it*, but the *it* cannot itself be made
24 a predicate. This *it* is thus neither predicated of a subject, nor in a
25 subject, and accordingly is identical with the conception of substance.

26 §4. The unity to which the understanding reduces impressions is
27 the unity of a proposition. This unity consists in the connection of the
28 predicate with the subject; and, therefore, that which is implied in the
29 copula, or the conception of *being*, is that which completes the work of
30 conceptions of reducing the manifold to unity. The copula (or rather
31 the verb which is copula in one of its senses) means either *actually is*
32 or *would be*, as in the two propositions, "There *is* no griffin," and "A
33 griffin *is* a winged quadruped." The conception of *being* contains only
34 that junction of predicate to subject wherein these two verbs agree. The
35 conception of being, therefore, plainly has no content.

36 If we say "The stove is black," the stove is the *substance*, from
37 which its blackness has not been differentiated, and the *is*, while it
38 leaves the substance just as it was seen, explains its confusedness, by
39 the application to it of *blackness* as a predicate.

40 Though *being* does not affect the subject, it implies an indefinite

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determinability of the predicate. For if one could know the copula and predicate of any proposition, as "...[a] is a tailed-man," he would know the predicate to be applicable to something supposable, at least. Accordingly, we have propositions whose subjects are entirely indefinite, as "There is a beautiful ellipse," where the subject is merely *something actual or potential*; but we have no propositions whose predicate is entirely indeterminate, for it would be quite senseless to say, "A[b] has the common characters of all things," inasmuch as there are no such common characters.

Thus substance and being are the beginning and end of all conception. Substance is inapplicable to a predicate, and being is equally so to a subject.

§5. The terms "prescision[c]" and "abstraction," which were formerly applied to every kind of separation, are now limited, not merely to mental separation, but to that which arises from *attention to* one element and *neglect of* the other. Exclusive attention consists in a definite conception or *supposition* of one part of an object, without any supposition of the other. Abstraction or prescision[d] ought to be carefully distinguished from two other modes of mental separation, which may be termed *discrimination* and *dissociation*. Discrimination has to do merely with the essences[e] of terms, and only draws a distinction in meaning. Dissociation is that separation which, in the absence of a constant association, is permitted by the law of association of images. It is the consciousness of one thing, without the necessary simultaneous consciousness of the other. Abstraction or prescision,[f] therefore, supposes a greater separation than discrimination, but a less separation than dissociation. Thus I can discriminate red from blue, space from color, and color from space, but not red from color. I can prescind red from blue, and space from color (as is manifest from the fact that I actually believe there is an uncolored space between my face and the wall); but I cannot prescind color from space, nor red from color. I can dissociate red from blue, but not space from color, color from space, nor red from color.

Prescision[g] is not a reciprocal process. It is frequently the case, that, while A cannot be prescinded from B, B can be prescinded from A. This circumstance is accounted for as follows. Elementary conceptions only arise upon the occasion of experience; that is, they are produced for the first time according to a general law, the condition of which is the existence of certain impressions. Now if a conception does not reduce the impressions upon which it follows to unity, it is a mere arbitrary addition to these latter; and elementary conceptions do not arise thus arbitrarily. But if the impressions could be definitely comprehended without the conception, this latter would not reduce them to

a. "..." in PAAAS, "...." in CP

PAAAS: 289

b. "A" in the same typeface as the text in PAAAS and CP

CP 1.549

c, d. "precision" in PAAAS and CP

e. "senses" in CP

EP 1: 3

f. "precision" in CP and PAAAS

W 2: 51

g. "Precision" in CP and PAAAS

unity. Hence, the impressions (or more immediate conceptions) cannot be definitely conceived or attended to, to the neglect of an elementary conception which reduces them to unity. On the other hand, when such a conception has once been obtained, there is, in general, no reason why the premises[a] which have occasioned it should not be neglected, and therefore the explaining conception may frequently be prescinded from the more immediate ones and from the impressions.

§6. The facts now collected afford the basis for a systematic method of searching out whatever universal elementary conceptions there may be intermediate between the manifold of substance and the unity of being. It has been shown that the occasion of the introduction of a universal elementary conception is either the reduction of the manifold of substance to unity, or else the conjunction to substance of another conception. And it has further been shown that the elements conjoined cannot be supposed without the conception, whereas the conception can generally be supposed without these elements. Now, empirical psychology discovers the occasion of the introduction of a conception, and we have only to ascertain what conception already lies in the data which is united to that of substance by the first conception, but which cannot be supposed without this first conception, to have the next conception in order in passing from being to substance.

It may be noticed that, throughout this process, *introspection* is not resorted to. Nothing is assumed respecting the subjective elements of consciousness which cannot be securely inferred from the objective elements.

§7. 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; and the function of the conception of being is to unite the quality to the substance. Quality, therefore, in its very widest sense, is the first conception in order in passing from being to substance.

Quality seems at first sight to be given in the impression. Such results of introspection are untrustworthy. A proposition asserts the applicability of a mediate conception to a more immediate one. Since this is *asserted*, the more mediate conception is clearly regarded independently of this circumstance, for otherwise the two conceptions would not be distinguished, but one would be thought through the other, without this latter being an object of thought, at all. The mediate conception, then, in order to be *asserted* to be applicable to the other, must first be considered without regard to this circumstance, and taken immediately. But, taken immediately, it transcends what is given (the more immediate conception), and its applicability to the latter is hypothetical. Take, for example, the proposition, "This stove is black." Here

PAAAS: 290

a. "premisses" in CP

CP 1.550

W 2: 52
EP 1: 4

CP 1.551

PAAAS: 291

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the conception of *this stove* is the more immediate, that of *black* the more mediate, which latter, to be predicated of the former, must be discriminated from it and considered *in itself*, not as applied to an object, but simply as embodying a quality, *blackness*. Now this *blackness* is a pure species or abstraction, and its application to *this stove* is entirely hypothetical. The same thing is meant by "the stove is black," as by "there is blackness in the stove." *Embodying blackness* is the equivalent of *black*.*[a] The proof is this. These conceptions are applied indifferently to precisely the same facts. If, therefore, they were different, the one which was first applied would fulfil every function of the other; so that one of them would be superfluous. Now a superfluous conception is an arbitrary fiction, whereas elementary conceptions arise only upon the requirement of experience; so that a superfluous elementary conception is impossible. Moreover, the conception of a pure abstraction is indispensable, because we cannot comprehend an agreement of two things, except as an agreement in some *respect*, and this respect is such a pure abstraction as blackness. Such a pure abstraction, reference to which constitutes a *quality* or general attribute, may be termed a *ground*.

Reference to a ground cannot be prescinded from being, but being can be prescinded from it.

§8. Empirical psychology has established the fact that we can know a quality only by means of its contrast with or similarity to another. By contrast and agreement a thing is referred to a correlate, if this term may be used in a wider sense than usual. The occasion of the introduction of the conception of reference to a ground is the reference to a correlate, and this is, therefore, the next conception in order.

Reference to a correlate cannot be prescinded from reference to a ground; but reference to a ground may be prescinded from reference to a correlate.

§9. The occasion of reference to a correlate is obviously by comparison. This act has not been sufficiently studied by the psychologists, and it will, therefore, be necessary to adduce some examples to show in what it consists. Suppose we wish to compare the letters p and b. We may imagine one of them to be turned over on the line of writing as an axis, then laid upon the other, and finally to become transparent so that the other can be seen through it. In this way we shall form a new image which mediates between the images of the two letters, inasmuch as it represents one of them to be (when turned over) the[b] likeness of the other. Again, suppose we think of a murderer as being in relation to a murdered person; in this case we conceive the act of the murder, and in this conception it is represented that corresponding to every murderer

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* This agrees with the author of *De Generibus et Speciebus, Ouvrages Inédits d'Abélard*,[c] p.528.

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(as well as to every murder) there is a murdered person; and thus we
resort again to a mediating representation which represents the relate
as standing for a correlate with which the mediating representation is
itself in relation. Again, suppose we look out[a] the word *homme* in a
French dictionary; we shall find opposite to it the word *man*, which, so
placed, represents *homme* as representing the same two-legged creature
which *man* itself represents. By a further accumulation of instances,
it would be found that every comparison requires, besides the related
thing, the ground, and the correlate, also a *mediating representation*
which represents the relate to be a representation of the same correlate
which this mediating representation itself represents. Such a mediat-
ing representation may be termed an *interpretant*, because it fulfils the   W 2: 54
office of an interpreter, who says that a foreigner says the same thing
which he himself says. The term representation is here to be understood
in a very extended sense, which can be explained by instances better
than by a definition. In this sense, a word represents a thing to the
conception in the mind of the hearer, a portrait represents the person
for whom it is intended to the conception of recognition, a weather-
cock represents the direction of the wind to the conception of him who
understands it, a barrister represents his client to the judge and jury
whom he influences.

Every reference to a correlate, then, conjoins to the substance the
conception of a reference to an interpretant; and this is, therefore, the
next conception in order in passing from being to substance.

Reference to an interpretant cannot be prescinded from reference to   EP 1: 6
a correlate; but the latter can be prescinded from the former.

§10. Reference to an interpretant is rendered possible and justified   CP 1.554
by that which renders possible and justifies comparison. But that is
clearly the diversity of impressions. If we had but one impression, it
would not require to be reduced to unity, and would therefore not need   PAAAS: 293
to be thought of as referred to an interpretant, and the conception
of reference to an interpretant would not arise. But since there is a
manifold of impressions, we have a feeling of complication or confusion,
which leads us to differentiate this[b] impression from that, and then,
having been differentiated, they require to be brought to unity. Now
they are not brought to unity until we conceive them together as being
ours, that is, until we refer them to a conception as their interpretant.
Thus, the reference to an interpretant arises upon the holding together
of diverse impressions, and therefore it does not join a conception to
the substance, as the other two references do, but unites directly the
manifold of the substance itself. It is, therefore, the last conception in
order in passing from being to substance.

§11. The five conceptions thus obtained, for reasons which will be   CP 1.555

sufficiently obvious, may be termed *categories.* That is,[a]

BEING,[b]

      Quality (Reference to a Ground),

      Relation (Reference to a Correlate),

      Representation (Reference to an Interpretant),

SUBSTANCE.[c]

The three intermediate conceptions may be termed accidents.[d]

§12. This passage from the many to the one is numerical. The conception of a *third* is that of an object which is so related to two others, that one of these must be related to the other in the same way in which the third is related to that other. Now this coincides with the conception of an interpretant. An *other* is plainly equivalent to a *correlate.* The conception of second differs from that of other, in implying the possibility of a third. In the same way, the conception of *self* implies the possibility of an *other.* The *Ground*[e] is the self abstracted from the concreteness which implies the possibility of another.

§13. Since no one of the categories can be prescinded from those above it, the list of supposable objects which they afford is,

What is.

      Quale—that which refers to a ground,[f]

      Relate—that which refers to ground and correlate,[g]

      Representamen—that which refers to ground, correlate, and

          interpretant.[h]

It.

§14. A quality may have a special determination which prevents its being prescinded from reference to a correlate. Hence there are two kinds of relation.

1st.[i] That of relates whose reference to a ground is a prescindible or internal quality.

2d.[j] That of relates whose reference to a ground is an unprescindible or relative quality.

In the former case, the relation is a mere *concurrence* of the correlates in one character, and the relate and correlate are not distinguished. In the latter case the correlate is set over against the relate, and there is in some sense an *opposition.*

Relates of the first kind are brought into relation simply by their agreement. But mere disagreement (unrecognized) does not constitute relation, and therefore relates of the second kind are only brought into relation by correspondence in fact.

A reference to a ground may also be such that it cannot be prescinded from a reference to an interpretant. In this case it may be termed an *imputed* quality. If the reference of a relate to its ground can be prescinded from reference to an interpretant, its relation to its

correlate is a mere concurrence or community in the possession of a quality, and therefore the reference to a correlate can be prescinded from reference to an interpretant. It follows that there are three kinds of representations.

1st.[a] Those whose relation to their objects is a mere community in some quality, and these representations may be termed *Likenesses*.

2d.[b] Those whose relation to their objects consists in a correspondence in fact, and these may be termed *Indices* or *Signs*.

3d.[c] Those the ground of whose relation to their objects is an imputed character, which are the *general signs*, and these may be termed *Symbols*.

§15. I shall now show how the three conceptions of reference to a ground, reference to an object, and reference to an interpretant are the fundamental ones of at least one universal science, that of logic. Logic is said to treat of second intentions as applied to first. It would lead me too far away from the matter in hand to discuss the truth of this statement; I shall simply adopt it as one which seems to me to afford a good definition of the subject-genus of this science. Now, second intentions are the objects of the understanding considered as representations, and the first intentions to which they apply are the objects of those representations. The objects of the understanding, considered as representations, are symbols, that is, signs which are at least potentially general. But the rules of logic hold good of any symbols, of those which are written or spoken as well as of those which are thought. They have no immediate application to likenesses or indices, because no arguments can be constructed of these alone, but do apply to all symbols. All symbols, indeed, are in one sense relative to the understanding, but only in the sense in which also all things are relative to the understanding. On this account, therefore, the relation to the understanding need not be expressed in the definition of the sphere of logic, since it determines no limitation of that sphere. But a distinction can be made between concepts which are supposed to have no existence except so far as they are actually present to the understanding, and external symbols which still retain their character of symbols so long as they are only *capable* of being understood. And as the rules of logic apply to these latter as much as to the former[d] (and though only through the former, yet this character, since it belongs to all things, is no limitation),[e] it follows that logic has for its subject-genus all symbols and not merely concepts.*[f]

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* Herbart says: "Unsre sämmtlichen Gedanken lassen sich von zwei Seiten betrachten; theils als Thätigkeiten unseres Geistes, theils in Hinsicht dessen, *was* durch sie gedacht wird. In letzterer[g] Beziehung heissen sie *Begriffe*, welches Wort, indem es das *Begriffene* bezeichnet, zu abstrahiren gebietet von der Art und Weise, wie wir den Gedanken empfangen, produciren, oder reproduciren mögen." But the whole difference between a concept and an external sign lies in these respects which logic

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We come, therefore, to this, that logic treats of the reference of sym-
bols in general to their objects. In this view it is one of a trivium of
conceivable sciences. The first would treat of the formal conditions of
symbols having meaning, that is of the reference of symbols in general
to their grounds or imputed characters, and this might be called formal
grammar; the second, logic, would treat of the formal conditions of the
truth of symbols; and the third would treat of the formal conditions
of the force of symbols, or their power of appealing to a mind, that is,
of their reference in general to interpretants, and this might be called
formal rhetoric.

There would be a general division of symbols, common to all these
sciences; namely, into,

1°:[a] Symbols which directly determine only their *grounds* or im-
puted qualities, and are thus but sums of marks or *terms*;

2°:[b] Symbols which also independently determine their *objects* by
means of other term or terms, and thus, expressing their own objective
validity, become capable of truth or falsehood, that is, are *propositions*;
and,

3°:[c] Symbols which also independently determine their *interpretants*,
and thus the minds to which they appeal, by premising[d] a proposition
or propositions which such a mind is to admit. These are *arguments*.

And it is remarkable that, among all the definitions of the propo-
sition, for example, as the *oratio indicativa*, as the subsumption of an
object under a concept, as the expression of the relation of two con-
cepts, and as the indication of the mutable ground of appearance, there
is, perhaps, not one in which the conception of reference to an object
or correlate is not the important one. In the same way, the concep-
tion of reference to an interpretant or third, is always prominent in the
definitions of argument.

In a proposition, the term which separately indicates the object of
the symbol is termed the subject, and that which indicates the ground
is termed the predicate. The objects indicated by the subject (which
are always potentially a plurality,[e]—at least, of phases or appearances)
are therefore stated by the proposition to be related to one another
on the ground of the character indicated by the predicate. Now this
relation may be either a concurrence or an opposition. Propositions of
concurrence are those which are usually considered in logic; but I have
shown in a paper upon the classification of arguments that it is also
necessary to consider separately propositions of opposition, if we are to
take account of such arguments as the following:—[f]

Whatever is the half of anything is less than that of which it is the
half;

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ought, according to Herbart, to abstract from.

$$A \text{ is half of } B:^{a}$$
$$\therefore \ A \text{ is less than } B.$$

The subject of such a proposition is separated into two terms, a "subject nominative" and an "object accusative."

In an argument, the premises[b] form a representation of the conclusion, because they indicate the interpretant of the argument, or representation representing it to represent its object. The premises[c] may afford a likeness, index, or symbol of the conclusion. In deductive argument, the conclusion is represented by the premises[d] as by a general sign under which it is contained. In hypotheses, something *like* the conclusion is proved, that is, the premises[e] form a likeness of the conclusion. Take, for example, the following argument:—

$$M \text{ is, for instance, } P', P'', P''', \text{ and } P^{\text{iv}};^{f}$$
$$S \text{ is } P', P'', P''', \text{ and } P^{\text{iv}}:$$
$$\therefore \ S \text{ is } M.^{g}$$

Here the first premise[h] amounts to this, that "P',[i] P'', P''', and P^{iv}" is a likeness of M, and thus the premises[j] are or represent a likeness of the conclusion. That it is different with induction another example will show.

$$S', S'', S''', \text{ and } S^{\text{iv}} \text{ are taken as samples of the collection } M;^{k}$$
$$S', S'', S''', \text{ and } S^{\text{iv}} \text{ are } P:$$
$$\therefore \text{ All } M \text{ is } P.$$

Hence the first premise[l] amounts to saying that "$S', S'', S''',$ and S^{iv}" is an index of M. Hence the premises are an index of the conclusion.

The other divisions of terms, propositions, and arguments arise from the distinction of extension and comprehension. I propose to treat this subject in a subsequent paper. But I will so far anticipate that,[m] as to say that there is, first, the direct reference of a symbol to its objects, or its denotation; second, the reference of the symbol to its ground, through its object, that is, its reference to the common characters of its objects, or its connotation; and third, its reference to its interpretants through its object, that is, its reference to all the synthetical propositions in which its objects in common are subject or predicate, and this I term the information it embodies. And as every addition to what it denotes, or to what it connotes, is effected by means of a distinct proposition of this kind, it follows that the extension and comprehension of a term are in an inverse relation, as long as the information remains the same, and that every increase of information is accompanied by an increase of one or other of these two quantities. It may be observed

that extension and comprehension are very often taken in other senses
in which this last proposition is not true.

This is an imperfect view of the application which the conceptions
which, according to our analysis, are the most fundamental ones find in
the sphere of logic. It is believed, however, that it is sufficient to show
that at least something may be usefully suggested by considering this
science in this light.

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PUBLICATIONS

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