Some Differences in the Way Peirce's 1903 and 1908 Semiotic Systems Classify Signs

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Abstract：By comparing Peirce's 1908 hexadic sign systems with the well-documented 1903 triadic system the paper seeks to assess the relevance of the former to the analysis of pictorial and verbal documents. After reviewing a 1906 draft letter to Lady Welby，the two systems are applied to a small corpus of examples. The paper ends with a discussion of the differences in the results obtained and the potential for further research.

Keywords：hexadic sign systems，sign，immediate and dynamic objects，immediate，dynamic and final interpretants

皮尔斯 1903 年与 1908 年两种符号分类法比较

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摘　要：本文试图通过对比皮尔斯 1908 年的六元符号系统与 1903 年的三元符号系统之间的差异，找出二者的关联之处，并由此去分析语言与图像文本。为此，本文将细读 1906 年皮尔斯给维尔比的信件手稿，并利用一组例子来解读与分析这两种符号系统。最后，本文还将讨论这种差异将会给皮尔斯符号学的进一步研究带来何种启示。

关键词：六元符号系统，符号，直接与动力解释项，直接、动力与最终解释项

With the exception of the limited edition of the Syllabus printed to accompany the Lowell Lectures on logic，the first complete semiotic systems of Peirce's to be published were the last to be conceived. Barely nine years after his death and nine years before the publication of the first volumes of the *Collected Papers*，the two major hexadic systems described in his correspondence with Lady Welby were set out in relative detail in the final section of Ogden and Richards' Appendix D（1923，pp. 279－90）and，in view of the numerous printings and editions of *The Meaning of Meaning*，one can suppose that Peirce's late statements on the sign were available to large numbers of potential readers. Ironically，then，some 35 years before Burks's edition of volume eight of the *Collected Papers*，the interested logician had at his disposal the theoretical background and partial descriptions of Peirce's projected 28 and 66 classes of signs well before the ten defined in 1903. Since most of the limited discussions of these late systems have concentrated on the order of the divisions generating the 66 classes the present paper examines the two hexadic systems of 1908—the six-element definition of semiosis and the six-division classification system it yields—in an attempt to assess their pertinence to the semiotic analysis of verbal and pictorial documents.

To this end the paper briefly introduces the more familiar 1903 three-division system defined by Peirce during the Lowell Lectures，using his 1906 definition of the dicisign to analyse a small corpus of verbal and pictorial signs. The hexadic system is then applied to the data making it possible to compare the way the two systems enable us to classify these particular signs.

Ⅰ. The Background

In the course of his Lowell Lectures on logic late in 1903 Peirce established a three-division typology（Table 1）based upon the sign and its relations with，respectively，the object and the interpretant：Sign，Sign—Object，Sign—Interpretant（EP 2：290－92）. The subdivisions within each trichotomy were established at this time by the association of the categories of Firstness，Secondness and Thirdness with each division. On Table 1 the icon has been replaced by its three hypoiconic structures，obtained by the recursive

application of the categories to the Firstness of the icon itself (EP：273－74). This system yielded ten distinct classes of signs (CP 2.254－2.264).

Table 1 Peirce's Three Divisions Generating 10 Classes of Signs

	Sign	Sign-Object	Sign-Interpretant
Thirdness	Legisign	Symbol	Argument
Secondness	Sinsign	Index	Dicisign
Firstness	Qualisign	metaphor diagram image	Rheme

However，in a letter to Lady Welby barely a year later Peirce was to define an initial hexad of divisions composed of two objects，the sign and three interpretants and based，as in 1903，on relations between sign and correlate，two of which（sign—immediate object，sign—immediate interpretant）were subsequently dropped (SS：32－35). In 1906 he discussed a transitional hexad of divisions based upon the correlates themselves，using the dicisign from 1903 as an example. In 1907 he defined semiosis as "a coöperation of three subjects，such as a sign，its object，and its interpretant"（CP 5.484）. Finally，in 1908，he derived a further hexad of divisions based upon the correlates in the order in which they occur in semiosis，this system generating 28 classes of signs：

> It is evident that a Possible can determine nothing but a Possible；it is equally so that a Necessitant can be determined by nothing but a Necessitant. Hence，it follows from the Definition of a Sign that since the Dynamoid Object determines the Immediate Object，
> which determines the Sign itself，
> which determines the Destinate Interpretant，
> which determines the Effective Interpretant，
> which determines the Explicit Interpretant，
> the six trichotomies，instead of determining 729 classes of signs，as they would if they were independent，only yield 28 classes. (SS：84；EP 2：481)

This we can represent more simply by the following scheme (Fig. 1)，in

which the interpretants have been standardized to immediate，dynamic and final，in that order，and where ">" signifies the determination process itself.

| Od | > | Oi | > | S | > | Ii | > | Id | > | If |
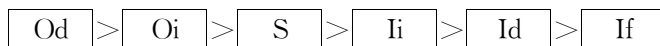
Fig. 1　Hexadic Semiosis in 1908

Ⅱ．The Dicisign in 1906

Much of the theory to follow is drawn from a 1906 draft letter to Lady Welby which is of theoretical interest for several reasons and shows Peirce，it seems to me，moving away from the theoretical statements of 1903. It constitutes an organic link between the two classifying systems since it uses a class of signs from the 1903 triadic system to illustrate aspects of the later hexadic one. It offers an innovative definition of the sign itself. It differentiates significantly between the newly posited three interpretants，and，more importantly for present purposes，it proposes a suggestively informal definition of the dicisign which will be used as the yardstick to determine the semiotic status of the examples in the corpus.

The sign is now defined as follows："I use the word 'Sign' in the widest sense for any medium for the communication or extension of a Form (or feature). Being medium，it is determined by something，called its Object，and determines something，called its Interpretant."（SS：196）Here Peirce is using the term "medium" both literally as a central，mediating element in his six-element expansion of the original triadic relation（Fig. 1），and metaphorically in the sense of "vehicle" as an artist might，for whom media or vehicles such as oil and water carry pigments to make paint. In Peirce's case the sign is a medium or vehicle bearing the form extended by the dynamic object to produce meaning，form being quality，that "monadic element of the world"（CP 1.426），and the only element capable of inhering simultaneously in such diverse entities as signs，objects and interpretants.

Furthermore，after having introduced the dynamic（his term is "dynamical"，but the terminology has been standardized for simplicity）and immediate objects and the sign itself，Peirce goes on to complete the description of the process as follows：

There is the *Intentional* Interpretant，which is a determination of the mind of the utterer；the *Effectual* Interpretant，which is a determination of the mind of the interpreter；and the *Communicational* Interpretant ［...］ which is a determination of that mind into which the minds of utterer and interpreter have to be fused in order that any communication should take place．(SS：196－7)

The logical disjunction between the intentional （i. e. immediate） interpretant as a determination of the mind of the utterer，that is the sign's "peculiar interpretability" or "sense" the utterer wishes to impart (Cf. SS：109－111)，and the effectual (i. e. dynamic) interpretant as a determination of the mind of the interpreter is both innovative and theoretically important：it introduces a "differential" which explains how signs can be misinterpreted：if utterer and interpreter have widely differing experiences of the world，then the non-deterministic basis of Peirce's semiotic theory explains those cases where the effectual interpretant is not congruent with the intentional．In the verbal example given in Example 1 below the addressee might gasp in amazement or say *I hope no one was hurt*！but might equally reply with an irate *I can see that for myself*！or *So what*！These are all valid effectual interpretants，but only the first two would be congruent with the sense intended by the utterer．Peirce is acknowledging the fact that interpreters interpret signs differentially，each according to their experience of the world，that "cognitive resultant of our past lives" (CP 2. 84)．

Finally，he analyses the dicisign into two distinct parts："Indeed in what we may，from one point of view，regard as the principal kind of signs，*there is one distinct part appropriated to representing the object*，*and another to representing how this very sign itself represents that object*．The class of signs I refer to are the dicisigns." （SS：196；emphasis added）Thus the dicisign has the defining property of being composed of two distinct but readily identifiable parts．In the 1903 system the dicent sign （proposition or quasi-proposition） was defined as a "double" sign associating an index and a rheme（CP 2. 251）．In 1906 these two terms are dropped and Peirce simply refers to the dicisign's two parts；there is one representing the sign's partial objects （the indexical elements of 1903），and another representing the form of the relations holding between these partial objects．This second part，unlike

the first, is infinitely malleable, being "appropriated" to represent the relations holding between these partial objects (in 1903 this was the rhematic element of the proposition), including any rhetorical inflection the sign may have, as this has to be communicated to the interpretants. In this way, in 1906 Peirce liberated the dicisign from the traditional Subject + Predicate structure, and defined more generally a class accommodating all manner of informational signs.

Note that what is left, if the sign is not dicent but rhematic in the 1903 sense, is what was formerly referred to as the icon. This is the second part representing the relations holding between potential partial objects, even though the sign is devoid of the indices capable of "proving" their existence. Were this not the case there would be no images of any sort for us to admire, for it is, of course, this "second part" which we find as the multitude of paintings to be found in museums, art galleries and our living-rooms. These are the (captionless) iconic sinsigns of the 1903 typology: they are like dicisigns without the indexical element we find, for example, in photographs. In the "New Elements" of 1904 Peirce describes the icon thus: "An *icon* can only be a fragment of a completer sign" (EP 2: 306), no doubt as a consequence of this indexical "deficit".

Consider, as an example, the following utterance:

Example 1. "*That train has just crashed through the wall*!"

In this case the partial objects are represented by the noun phrases *that train* and *the wall*, while the second part is composed of the verb phrase *has just crashed* plus the preposition *through* and, of course, the rhetorically charged exclamatory tone. As mentioned earlier, the verb phrase and the preposition signify—they are legisigns—the *form* of the relation holding between train and wall communicated by the dynamic object to the sign and thence to the sequence of interpretants it generates: there can be no form in the sign that has not been extended by the object. In short, while the partial objects cannot be modified since they determined the sign in the first place— the noun phrases, proper nouns, demonstratives, etc., representing them are sorts of "rigid designators" —it is possible to modulate the form of the

relations holding between them by the use of modals，adverbs and emotionally －charged adjectives，etc. In the verbal example above，the sign is classified as the replica of a *dicent symbol* since，as stated earlier，in addition to the two indexical noun phrases the expression *has just crashed through* signifies the diagrammaticiconicity involved in the form the sign represents as holding between the train and the wall.

Similarly，this characteristic two-part structure is to be found，albeit less immediately obviously，in a second kind of dicisign exemplified in the corpus，namely the dicent sinsign illustrated by the photograph of the train crash. This is how Peirce had described the photograph in 1903，distinguishing clearly between the print itself and the section of rays which are projected from the object：

> A better example [of an informational，i. e. dicent，index] is a photograph. The mere print does not，in itself，convey any information. But the fact，that it is virtually a section of rays projected from an object *otherwise known*，renders it a Dicisign. [...] It will be remarked that this connection of the print，which is the quasi-predicate of the photograph，with the section of the rays，which is the quasi-subject，is the Syntax of the Dicisign；and like the Syntax of the proposition，it is a *fact* concerning the Dicisign considered as a First，that is，in itself，irrespective of its being a sign. (CP 2. 320)

Since the print constitutes the second part of any dicisign representing the relations holding between its partial objects while the objects themselves can be considered to be represented as the sections of rays they reflect，we can take it that both parts coexist in the same sign，but as a blend—they are not separable as in the case of a dicent symbol. This is clearly the case with the photograph on Example 2，since at some time in 1895 the accident was reflected onto the film in a camera. This two-part structure identifies the sign as dicent—a dicent indexical sinsign in the 1903 system：

Example 2. Train Wreck at Montparnasse Station，Paris，France (1895).
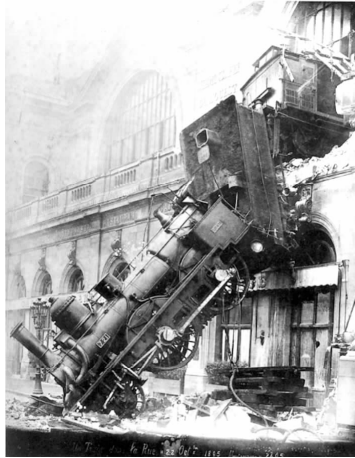
Fig. 2　Train Wreck at Montparnasse Station

Consider，finally，a painting. Without its captions it is，in the 1903 system，an iconic sinsign: it exists in itself as a painting but offers no certainty of the existence of the objects it represents—it simply exhibits relations between its various potential objects by means of the "iconic" qualities it shares with these objects in the form of lines，shapes and colours. As the logical "fragment" of a dicisign it lacks the diagnostic indexical partial objects required for full informational status. This it acquires when we include its caption，at which point it becomes adicent indexical legisign，a class more complex than the wordless photograph on 2.

Example 3. Cheyne Walk beside the River Thames（late 18ᵗʰ century）.
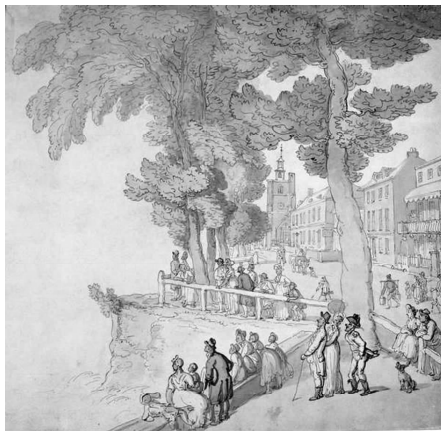
Fig. 3　Cheyne Walk beside the River Thames

Ⅲ. Overview of the Hexadic System

Table 2　The 1908 Hexad of Divisions Yielding 28 Classes of Signs[①]

Universe	Od	Oi	S	Ii	Id	If
Necessitant	collective	copulant	type	relative	usual	to produce self-control
Existent	concretive	designative	token	categorical	percussive	to produce action
Possible	abstractive	descriptive	mark	hypothetic	sympathetic	gratific

Moving now to the hexadic sign-systems, we have the hexadic process within which the sign now functions (Fig. 1) together with the six-division classification system this process generates (Table 2), offering the researcher 28 classes of signs: one abstractive, six concretives and 21 collectives. They call for a number of remarks. First, since the two objects, the sign and the three interpretants themselves now form the basis of the classifications, Peirce has established three universes in which to "accommodate" them, each characterized by its specific mode of being: the necessitant, the existent and the possible, in order of decreasing complexity. These universes replace the categories of the earlier system as criteria for the differentiation of sub-classes of signs.

Second, while some of the labels seem self-evident— "percussive", "designative" and "descriptive", for example—and others are clearly drawn from tradition: abstract, concrete and collective are categories of English common nouns, and "relative", "categorical" and "hypothetic" are types of proposition, the remainder require careful consideration— "gratific" especially—and although they deal to some extent with the meanings of the labels, the three draft letters of December 24, 25 and 28 (EP 2: 481−491) are of little assistance.

Finally, it follows from this that one task for the researcher is to determine just what it means, for example, for the mode of being of a dynamic interpretant to be necessitant, or for the mode of being of a final

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① Note that the contents of the final three trichotomies are derived from the draft letter to Lady Welby of December 25, 1908 (EP 2: 484−490).

interpretant to be that of existence. As an illustration of the problems involved in working with the interpretants, which are really only available for inspection once the sign has been interpreted, consider Peirce's oft-discussed military injunction：

Example 4：*Ground arms* !

Working through the divisions on Table 2 we obtain the following classification of the utterance. At Od, in spite of the two existent objects represented by the implicit personal pronoun (*you*) and the nominal *arms*, the utterance establishes a relation between them represented by the verbal element *ground*. Since a relation is necessitant, Example 4 is a collective sign. In view of this relation between the two concretives the sign is also copulant at Oi, and as a sequence of words in the English dictionary, the sign itself is necessitant and therefore a type (EP 2：480). Now Ii can generally, but not always, be considered a sort of mental "mirror-image" of Oi, which in this case presents a relation in the sign, thereby making the sign relative. At Id, on the other hand, the sign is percussive, since the dynamic interpretant is the ritualized sequence of actions of the troopers bringing their muskets to the ground. Finally, since If is a habit, the sign is telic in nature, and the final interpretant is the formation of a perceptible habit in the soldiers' behaviour, making the command an action-producing percussive relative sign (if a sign is relative it is necessarily collective, hence complete specification is unnecessary). However, the command is repeated daily as a token of the type examined above, and given that the immediate interpretant is the determination of the mind of the officer, who wants the soldiers not to think about the command but to act immediately, the sign at Ii is likely to become categorical, an immediate unreasoned mental response, resulting as before in the thud of the muskets on the ground—the command is percussive—this eventually becoming a habitual action. In this case, then, the sign is an action-producing, (categorical) copulant token.

Ⅳ. **The Hexadic Classification of the Examples**

With this in mind we examine the examples from the corpus. In the case

of Example 1 we note that although *That train* and *the wall* represent existent objects，the sentence explicitly establishes a relation between them— they are not isolated，adventitiously occurring entities as they would be in many photographs，for example. Since a relation is by nature necessitant，at Od the sign is collective. From the relational nature of this particular dynamic object it follows that the sign is copulant at Oi and necessarily a type at S. Since the sign is verbal，the immediate interpretant is mental，composed of the intrinsic sense of the utterance；at Ii the utterance is relative. However， the actual effect on an interpreter is likely to be an expression of surprise or even irritation and，hopefully，an attempt to call an ambulance. In this case， at Id the sign will be percussive. Finally，at If the sign will have a telic， habit-forming character in the guise of some permanent feeling about such accidents，an effect quite different from the vigorous habitual actions of the troopers in the *Ground arms*！ command. Example 1 can be classified as a gratific，percussive，relative sign.

The photograph，Example 2，represents existent objects by definition， and is therefore concretive. It identifies those objects（not simply the train and the wall，but also doors and windows，etc.）and thus is designative. It is an existent entity itself as a sign，which makes it a token. The objects it represents are very real，not hypothetical in any way，and therefore the "sense" of the photograph is categorical. Like the utterance，it produces a reaction from the observer—a gasp of surprise or perhaps an expression of disbelief—and is therefore concussive. Finally，given that the event depicted took place over a century ago，the final interpretant is likely to be an entrenched feeling—case closed，so to speak—rather than some habitual action，making the photograph gratific rather than action-producing：a gratific，percussive，concretive sign.

Finally，the painting is necessarily concretive since it depicts existent partial objects（existent in the sense that the sort of objects represented are drawn from the universe of trees，houses，people，rivers，etc.，not from the universe of ideas，which are "possibles"）. It is designative at Oi since it doesn't present a "feeling" or sensation of the objects but delineates them clearly. As a painting it exists in its own right and is therefore a token at S.

Like that of the photograph its intended interpretability at Ii involves beings from the universe of existence which the painting itself creates（Cf. EP2，p. 493），and the "sense" of the painting，like that of the photograph，is categorical. By virtue of its being a painting one assumes that Id will be a reaction of approval or a comment on the colours，for example，making the sign percussive. In the long run，the effect of the painting would，in this case too，be an entrenched feeling or impression，making the painting gratific at If. We find，then，that whereas in the triadic system photograph and painting are identified as members of different classes，in the hexad，rather surprisingly，both are gratific，percussive，and concretive signs.

Ⅴ．Discussion and Conclusions

"But as I have studied it"，wrote Peirce in 1903，" ［logic］ is simply the science of what must be and ought to be true representation，so far as representation can be known without any gathering of special facts beyond our ordinary daily life. It is，in short，the philosophy of representation. "（CP 1.539）He had also suggested in his Carnegie application that the basic methodology of the third branch of this philosophy，methodeutic，always involved two processes：definition and division（L 75，Draft D，1902）. This is the methodology of logic which we see at work in the two very different divisions of signs discussed above，the second based on a more sophisticated definition of the sign than the first.

It remains to be seen just how useful semioticians and Peirce scholars will find the hexad and the results its 28 potential classes yield. The present paper is in this respect an initial attempt to review the problem. As can be seen from the analyses，the divisions involving the three interpretants are problematic and involve more speculation than confirmed observation. This can be obtained，for example，from the investigation of spontaneous conversation or from the analysis of audience reaction to films，plays or television programmes.

The examples discussed above were undemanding，simple pretexts for a comparison of the two systems. They nevertheless made it possible to offer succinct illustrations of the nature of research employing the full six

divisions，and to envisage the potential of the system as a typology． The two divisions concerning the objects are，it seems to me，full of promise，the dynamic object division in particular． By classifying the sign in the first of the six divisions Peirce is not inviting us to indulge in semantics，even less in lexicology and grammar，whatever the labels "abstractive"，"concretive" and "collective" might suggest． There is something far more ambitious in this particular division，governing as it does 21 *distinct* classes of collectives，while the entire six-element system provides us with an interesting if challenging heuristic，for seeking can be more useful and interesting than actually finding． Indeed，it seems to be inviting us to investigate the dynamic objects behind such highly complex representations as modern advertising，posters for pop stars，films，novels and poems，complex signs in which the classes of symbol，index and legisign are often of purely local interest and significance． Indeed，this hexadic system seems to be Peircean logic's way of theorizing much contemporary critical practice． Well-known examples are Ernst Gombrich's abrasive critique of the 1972 NASA Pioneer probe plaque (1982，pp． 137－61) and Roland Barthes's analysis of the Panzani pasta advertisement in "Rhetoric of the image" (1977，pp． 32－51)：in addition to the partial objects they represent，considerations of circumstance，intention，effect sought (from aliens with vision，for example！) etc.，are the basic concerns of any attempt to understand these and many other complex representations characterizing contemporary culture． In this centennial year of Peirce's death，research undertaken with his late semiotic systems would be a fitting tribute to his mammoth logical originality．

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