Francesco Bellucci
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Ente di afferenza:
Università di Bologna (unibo)

FRANCESCO BELLUCCI

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In Peirce literature it is commonly held that a sign may have iconic, indexical, and symbolic aspects. In this paper, I argue that according to Peirce's mature theory of signs, the theory expounded in the final version of the *Syllabus of Logic* of 1903, this cannot be the case. The paper also discusses two famous passages, one from the first version of the *Syllabus*, in which "hypoicons" are introduced, and another from the 1894 *How to Reason*. Both passages are usually taken as indications that for Peirce a sign may have iconic, indexical, and symbolic aspects; I offer an alternative interpretation of both passages.
Keywords: Peirce, Icon, Index, Symbol, Hypoicon.

In the literature on Peirce, it has often been said that for Peirce signs are mixed entities, that is, they are the result of the combination of distinct semiotic aspects. This has often been said in connection with the most famous of Peirce's trichotomies of signs, that into icons, indices, and symbols. A sign, it is said, is never a pure icon, a pure index, or a pure symbol. Rather, a sign may be partly iconic and partly symbolic, or partly symbolic and partly indexical, the sign itself being the result of the combination of these semiotic "aspects". This idea is found in both classical and recent scholarship[1]. Peirce scholars seem to be satisfied with it, as it

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[1] «Symbols can be indexical and iconic» (Brock 1969: 17); «the three modes of reference are not mutually exclusive. The same sign-vehicle, say a photograph, thus may designate its object both iconically and indexically» (Greenlee 1973: 72); «Peirce never divides signs into these three classes. There are three poles, three categories, and all three can be present in the same sign. He says that a symbol may have an icon and index incorporated into it» (Jakobson 1976: 1539); «per Peirce nessun segno è in se stesso soltanto un simbolo, una icona o un indice ma contiene, in proporzioni diverse, elementi di tutte e tre le modalità» (Eco 1984: 210); «there are no pure icons or indices; all the signs are, to some extent, symbolic» (Hookway 1985: 96); «icon, index, and symbol need not be different things, but may be different aspects of the same thing» (Hulswit 2002: 153); «by 1903, the simple icon/index/symbol trichotomy was something of an abstraction, and Peirce was aware that any single sign may display some combination of iconic, indexical and symbolic characteristics» (Atkin 2013); «icona, indice e simbolo non sono tre classi

has never been subjected to criticism.

"Icon", "index", and "symbols" are terms that belong to one and the same semiotic division, which is also Peirce's most famous division of signs. In what follows I argue that if with "mixed" one understands the co-presence of iconic, indexical, and symbolic aspects, or more generally the co-presence of classificatory items that belong to one and the same division or trichotomy ("intra-trichotomic combination"), then no sign in Peirce's mature theory is mixed. Section 1 illustrates the bulk of my argument. This section is mostly about the final version of a *Syllabus of Logic* that Peirce wrote as accompaniment of his Lowell Lectures in the autumn of 1903. The final version of the *Syllabus* includes a chapter, titled "Nomenclature and Divisions of Triadic Relations", which contains Peirce's most complete (albeit not his most extended) taxonomy of signs. Thanks to its inclusion in the *Collected Papers*, this chapter has become a classic of semiotics. Now, even a superficial consideration of it is sufficient to show that while signs are mixed in some sense – and indeed the sense of this "mixture" constitutes the crucial innovation of the final version of the *Syllabus* over Peirce's previous attempts at a general classification of signs – none of the classes that Peirce enumerates is "mixed" in the sense of "intra-trichotomic combination"; and indeed taking "mixed" in this sense is so much wrong that acceptance of it renders the whole of the taxonomy in the *Syllabus* simply incomprehensible. To anticipate a little the conclusion of my argument: in the *Syllabus* the aspects of the definition of a class of signs are parameters that come from *distinct* trichotomies, which are combined in the definition. A sign is a mixed entity in the sense of inter-trichotomic combination, not in the sense of intra-trichotomic combination.

The two sections that follow the first qualify my argument a little further. Section 2 is about Peirce's notion of "hypoicon", an allegedly mixed sign. Section 3 is about a famous passage – a passage that is famous because it was printed in the *Collected Papers* – in which Peirce himself mentions certain "mixed signs".

1. In all of his writings antecedent to 1902 Peirce divided signs into icons, indices, and symbols, and symbols into terms, propositions, and arguments[2]. With the *Minute Logic* – a treatise on logic to which Peirce

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di segni mutualmente esclusive, quanto piuttosto tre dimensioni della segnità, necessariamente compresenti – per quanto in misura diversa – in ogni fenomeno semiotico» (Fadda 2013: 184); «per Peirce non esistono "segni iconici", dal momento che tutti i segni sono dei "misti" che presentano al loro interno componenti iconiche, indicali e simboliche in misura variabile» (Bellucci e Paolucci 2015: 4).

[2] Cf. e.g. the "New List" of 1867 (W2: 56), "What Is a Sign?" of 1894 (EP2: 4-10) and the "Short Logic" of 1895 (EP2: 11-26).

worked intensely between 1901 and 1902[3] – an important taxonomic reform was introduced which consisted in considering the members of the two divisions – that into "icons", "indices", and "symbols", and that into "terms" (recently relabeled into "rhemes"), "propositions", and "arguments" – not as *classes* of signs, but as ways of classifying signs, i.e. as *semiotic parameters* by the combination of which the classes of signs are obtained. This reform made it necessary to determine how parameters interact, that is, to determine the compossibility of parameters. In the context of the *Minute Logic*, the rules of semiotic compossibility are two: (i) an icon cannot be a proposition (and thus iconic propositions are excluded); (ii) an argument can only be a symbol (and thus iconic and indexical arguments are excluded). This idea is brought to its most systematic consequences in the final version of the *Syllabus* of 1903, especially in the final version of chapter III: "Nomenclature and Divisions of Triadic Relations" (hereafter *NDTR*), contained in R 540 (now in EP2: 289-299). Here Peirce considers not two but *three* trichotomies of signs: the first trichotomy, according to the sign in itself, is into "qualisigns", "sinsigns", and "legisigns"; the second trichotomy, according to the relation of the sign to its object, is into "icons", "indices", and "symbols"; the third trichotomy, according to the way the sign is represented by the interpretant, is into "rhemes", "dicisigns" ("propositions") and "arguments". Like in the *Minute Logic*, the three trichotomies determine not classes of signs but ways of classifying signs, i.e. they determine semiotic parameters by the combination of which the classes of signs are obtained. A given class of signs is the result of combining or mixing one member for each of the trichotomies that are specified. In the case of *NDTR*, since the trichotomies there specified are three, a given class of signs is the result of combining one member from the first trichotomy, one member of the second, and one member of the third; so in *NDTR* each class of signs is result of the combination of three semiotic parameters, each from a distinct trichotomy.

The principles for the determination of the compossibility of parameters are an extension of those employed in the *Minute Logic*. The rules of semiotic compossibility of *NDTR* are four: (i) a qualisign can only be an icon (which excludes indexical and symbolic qualisigns); (ii) an icon can only be a rheme (which excludes iconic dicisigns and iconic arguments); (iii) a symbol can only be a legisign (which excludes symbolic sinsigns and symbolic qualisigns); (iv) an argument can only be a symbol (which excludes iconic and indexical arguments). Rules (i)-(iv) are special determinations of two more general rules of semiotic compossibility which Peirce fails to state in *NDTR* but which he correctly communicates to Lady Welby

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[3] The first chapter, the only one that touches upon semiotic matters, was published in part in CP 2.79-118. Cf. also SWS: 87-112.

in 1908: «It is evident that a possible [first] can determine nothing but a Possible [first], it is equally so that a Necessitant [third] can be determined by nothing but a Necessitant [third]» (EP2: 481); these two rules presuppose that the trichotomies are *linearly ordered*, and that each trichotomy has a first, a second, and a third member. Their formulation may vary, but the substance is that (R1) a first member in a trichotomy can only determine the following element in the combination to be a first member, and (R2) a third member can only be determined by the preceding element in the combination to be a third. When applied to the three trichotomies of *NDTR*, R1 and R2 give rules (i)-(iv)[4].

In *NDTR* the rules thus give rise to ten classes of signs (EP2: 294-296): rhematic iconic qualisigns, rhematic iconic sinsigns, rhematic iconic legisigns, rhematic indexical sinsigns, rhematic indexical legisigns, rhematic symbolic legisigns, dicent indexical sinsigns, dicent indexical legisigns, dicent symbolic legisigns, argumentative symbolic legisigns. There is no need in the context of this paper to explain what Peirce's motivations are for the rules of semiotic compossibility (i)-(iv) that he in fact adopts. Nor is there any need to pass in review the ten classes that are obtained by applying the four rules to the three trichotomies of *NDTR*[5]. For our purposes it is sufficient to observe that none of the ten classes of signs of *NDTR* – and indeed no class of signs obtained with this method – is a combination of the parameters that are all specified by the second trichotomy: there are no iconic or indexical symbols in *NDTR*, no iconic indices, no indexical icons. The combination that actually takes place is not *intra-*, but *inter-*trichotomic: each parameter specified by a trichotomy is combined (according to the rules of semiotic compossibility) with the parameters specified by the two other trichotomies (inter-trichotomic combination); no parameter is combined with another parameter belonging to its own trichotomy (intra-trichotomic combination).

According to *NDTR*, which may be claimed to contain Peirce's *summa* about semiotic taxonomy, signs are mixed entities in the sense of inter-trichotomic combination. Intra-trichotomic combination is, by contrast, excluded. In particular, no sign in Peirce's mature theory is a combination of iconic, indexical, and symbolic aspects.

2. Some supporters of the idea that signs are mixed entities in the sense of intra-trichotomic combination are fond of taking Peirce's notion of "hypoicon" as an illustration of it[6]. The idea is the following: since a

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[4] See Burch (2011); cf. also Short (2007: 239); Weiss and Burks (1945), and Bellucci (2017: 264-267).

[5] Savan (1987) contains an excellent analysis; see also Bellucci (2017: 267-278).

[6] «Non c'è un segno che sia una pura icona, nè un puro indice o puro simbolo. In ogni segno si danno le tre funzioni iconica, indicale e simbolica, fra le quali una può es-

sign is always a mixture of iconic, indexical, and symbolic aspects, no sign is a "pure icon"; but the iconic aspect may prevail over the others; in this case we have a "hypoicon". If a hypoicon really were such a mixture of iconic, indexical, and symbolic aspects in which the iconic one prevails, the idea of intra-trichotomic mixture would receive confirmation. In this section, I show that this project is destined to fail.

This requires that we enter briefly into Peircean philology. "Hypoicon" is a *hapax legomenon* in Peirce's corpus of writings. Here is the passage in which it occurs, which I label **T1** and which I divide into labeled subsections for easiness of reference.

T1 [...] **(i)** most strictly speaking, even an idea, except in the sense of a possibility, or Firstness, cannot be an Icon. A possibility alone is an Icon purely by virtue of its quality; and its object can only be a Firstness. **(ii)** But a sign may be *iconic*, that is, may represent its object mainly by its similarity, no matter what its mode of being. If a substantive be wanted, an iconic Representamen may be termed a *hypoicon*. **(iii)** Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label, it may be called a *hypoicon* (EP2: 273-274).

This passage comes from a section of manuscript R 478 titled "Sundry Logical Conceptions" (hereafter, *SLC*; now in EP2: 267-288). I mentioned above that *NDTR* was the final version of chapter III of the *Syllabus*. *SLC* was the first version of that chapter[7]. In *SLC* signs are considered according to two main trichotomies, which as in the *Minute Logic* specify parameters for the classification of signs rather than the classes of signs themselves. The first division is the usual one into "icons", "indices", and "symbols"; the second one is into "rhemes" (terms), "dicisigns" (propositions), and "arguments". In *NDTR*, as we saw above, signs are considered according to three trichotomies. The addition is the trichotomy into "qualisigns", "sinsigns", and "legisigns". This new trichotomy considers the «sign in itself» (EP2: 291). In the slightly different formulation of manuscript R 800 (which is an incomplete intermediate version between *SLC* and *NDTR*),

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sere prevalente. Per questo, più precisamente, Peirce denomina il representamen iconico "ipoicona"» (Fumagalli 1993: 267); «If by icon one meant an "iconic sign" (and therefore, in Peirce's view, a hypoicon, whose "symbolic" or broadly conventional content he never denied), then saying that it possessed the properties of the object represented looked like a way of placing signs in a direct (and naive) relation with the objects to which they referred» (Eco 1999: 343); «what Peirce termed hypo-icons, that is, signs which involve iconicity but also, to a great extent, indexical and/or "symbolic" (that is, conventional, or perhaps more generally, rule-like) properties» (Sonesson 1998: 36); cf. Sonesson (2016: 8). The idea that an hypoicon is a mixture of iconic, indexical, and symbolic components is also in Proni (2017: 367-369).

[7] There is both textual and thematic evidence that *SLC* was composed before *NDTR*, and therefore that *NDTR* was destined to replace *SLC* in the final version of the *Syllabus*; cf. Bellucci (2017: ch. 7). A detailed reconstruction of the *Syllabus* set of documents is in Pietarinen (2021).

this trichotomy considers signs «according to their modes of being, as objects» (R 800 CSP 3)[8].

The trichotomy added in *NDTR* considers signs as material objects, that is, in their "mode of being". In the *Logical Tract. No. 1* (summer 1903) Peirce had written: «Not only is "man" a "general sign" *formaliter*, or in its signification, but it is also general *materialiter*, in its mode of being as a sign. It is certainly not an existent individual» (R 491 CSP 6). A general word like "man", which is a *symbol*, denotes a general object, i.e. it denotes whatever satisfies its connotation (I return to this in a moment). It is thus a general sign "formaliter", i.e. in its signification. But a symbol is general in another sense, too; it is general *qua* object, in its "mode of being as a sign": it is general "materialiter". The terminology obviously derives from the medieval theory of *suppositio*: a term in its *suppositio materialis* stands (*supposit*) for itself as a word, while in its *suppositio formalis* it stands for its meaning or denotation. This distinction, initially considered as applicable to symbols only, will soon become applicable also to non-symbolic signs, and constitutes one of the keys to understand Peirce's notion of hypoicon. In *NDTR* the dimension of analysis of a sign's *suppositio materialis* is erected into an independent taxonomic level. Signs in general (not just symbols) may have the mode of being of qualitative possibility (in phenomenological terms, "firstness"), the mode of being of existence and individuality ("secondness"), or the mode of being of regularity and generality ("thirdness). A sign whose mode of being is that of a qualitative possibility is called "qualisign"; a sign whose mode of being is that of existence and individuality is called a "sinsign"; a sign whose mode of being is that of regularity and generality is called "legisign".

Now, I believe that when in **T1(ii)** Peirce says «a sign may be *iconic*, that is, may represent its object mainly by its similarity, *no matter what its mode of being*» (last italics mine), he is referring to the *suppositio materialis* of the sign, i.e. the dimension that in *NDTR* corresponds to the first trichotomy of signs. According to the rules of semiotic compossibility, (i) a qualisign can only be an icon, but an icon can be either a qualisign, a sinsign, or a legisign; that is, an icon can have the mode of being of qualitative possibility, and is then an "iconic qualisign"; it can have the mode of being of existence and individuality, and is then an "iconic sinsign"; or it can have the mode of being of regularity and generality, and is then an "iconic legisign".

In **T1(i)** Peirce says that an icon in the strict sense can only be a possibility. This means that an icon in the strict sense can only have the mode

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[8] In the *Logic Notebook* entry for October 8, 1905 this trichotomy is said to be «as to being of [the] sign» (R 339: 252r = SWS: 156), and then also «according to the matter of the sign» (R 339: 253r = SWS: 157). In "The Basis of Pragmaticism" we read: «The first division of signs which I recognize turns upon the differences in the modes of being of the signs as things» (R 284 CSP 55 = SWS: 221).

of being of qualitative possibility, and thus can only be a qualisign. Yet no rule of semiotic compossibility prevents icons from being signs other than qualisigns. Thus in **T1(ii)** Peirce introduces the idea of an icon in the wide sense. An icon in the strict sense represents its object by similarity but can only be a qualisign; an icon in the wide sense represents its object by similarity and can be either a qualisign, a sinsign, or a legisign. The icon in the wide sense is labeled "hypoicon". A hypoicon, then, is the iconic aspect of a sign considered independently of its mode of being, or in abstraction from any mode of being that it may have.

SLC, to which **T1** belongs, was written before *NDTR*. Yet the projection of the terminology of the latter ("qualisign" etc.) onto the former allow us to see what Peirce was referring to in **T1(ii)** by the phrase «no matter what its mode of being»: he was referring to the *suppositio materialis* of the sign, the dimension of analysis that in *NDTR* is captured by the trichotomy into qualisigns, sinsigns, and legisigns. We could therefore re-phrase **T1(ii)** as follows: a sign may be *iconic*, that is, may represent its object mainly by its similarity, no matter whether it is a qualisign, a sinsign, or a legisign. If a substantive be wanted, an iconic Representamen may be termed a *hypoicon*.

Let us now come to **T1(iii)**. This is probably the section of **T1** that is responsible for the idea that a hypoicon is a mixture of iconic, indexical, and symbolic aspects in which the iconic one prevails. Part of the problem lies in the mention of a «conventional [...] mode of representation». Since it is usually believed that symbols for Peirce are conventional signs, this mention is usually taken as a reference to symbols. Now, symbols for Peirce *may* be conventional, but need not; natural symbols exist which are not conventional[9]. What is definitional of Peirce's notion of symbol is that its object is general, and this means that the object is denoted by means of the connotation[10]. However, even assuming that all symbols for Peirce are conventional signs, **T1(iii)** cannot be taken to imply that hypoicons have a symbolic aspect. Quite the opposite is true.

To see this, let us have a look at an earlier version of **T1**, i.e. the version of it that is contained in an earlier draft of *SLC*:

[9] «A conventional sign has, since Aristotle and earlier, received the name of *symbol*; but besides conventional symbols there are signs of the same nature except that instead of being based on express conventions they depend on natural dispositions. They are natural symbols. All thought takes place by means of natural symbols and of conventional symbols that have become naturalized» (R 450 CSP 6, 1903); cf. Bellucci (2021).

[10] In the "New List" Peirce defines symbols as those signs «the ground of whose relation to their objects is an imputed character, which are the same as *general signs*» (W2: 55-56). The same is said in a "Sketch of Logic" dated 1869, where a symbol is said to be «something to which a certain character is *imputed*, that is which stands for whatever object may have that character» (W2: 294). Cf. also W2: 446 (1870); EP2: 69 (1901); R 492 (1903); CP 4.544 (1906); CSP to F.A. Woods, RL 477 (1913).

T2 Any material image, as a painting, is largely conventional in its manner of representing its object. There is also generally some legend or label attached to it which gives it an indexical character (R 478 ISP 174 CSP 44).

It is evident that **T2** (the earlier version) closely corresponds to **T1(iii)** (its later reformulation). It is also evident that in **T2** Peirce is saying something very close to the idea of intra-trichotomic combination: any existing icon, a painting for example, has some conventional features (and thus, if we accept the equation conventionality = symbolicity, has a symbolic aspect) and may have some index attached to it (some legend or label) which constitutes its indexical aspect. Now, the close correspondence between **T2** and **T1(iii)** implies that when in **T1(iii)** Peirce says «in itself», this should be taken to mean: independently of its conventional aspects and independently of its being associated with a legend or label, that is, independently of its symbolic and indexical aspects. If this is so, then the hypoicon of **T1(iii)** is by no means a sign in which the predominant iconic aspect is mixed with indexical and symbolic aspects. Quite the contrary, the hypoicon of **T1(iii)** is the iconic aspect of such a mixture when it is considered *independently of* or *in abstraction from* those symbolic and the indexical aspects ("in itself"). The supporters of intra-trichotomic combination want the hypoicon to be an icon that is mixed with symbols and indices; yet what Peirce says in both **T2** and **T1(iii)** is that a hypoicon is a pure icon, i.e. is the iconic aspect of a mixture when considered in isolation.

The attentive reader may have noticed that in the transition from **T1(i)-(ii)** to **T1(iii)** Peirce seems to be contradicting himself. For in **T1(i)-(ii)** he says that a pure icon, or icon in the strict sense, can only be a possibility, while a hypoicon, or icon in the wide sense, can have any of the three modes of being; while in **T1(iii)** he says – if I'm correct in reading **T1(i-ii)** against the backdrop of the earlier **T2** – that a pure icon, i.e. an icon that is considered independently of any symbolic or indexical aspects, is a hypoicon. The problem can only be solved genetically. Peirce seems to have entertained two distinct theories of the hypoicon. The first theory, which emerges in **T2** and in **T1(iii)**, is that a hypoicon is an icon considered independently of its symbolic and indexical aspects or components. This theory may really be said to assume intra-trichotomic combination. The second theory, which is explicit in **T1(i)–(ii)**, is that a hypoicon is an icon considered independently of its mode of being. This second theory does not assume intra-trichotomic combination, and already clearly points towards the combinatory taxonomy of *NDTR* (which only allows, and indeed requires, inter-trichotomic combination). While writing **T1** Peirce shifts from the new theory, which does not assume intra-trichotomic combination, to the old theory of **T2**, which does assume intra-trichotomic combination, without noticing the inconsistency.

Be that as it may, the hesitancies and inconsistencies of *SLC* disappear with *NDTR*. Here the notion of hypoicon and its terminology have been abandoned. Peirce now simply says that an icon can be either a qualisign, a sinsign, or a legisign: «Anything whatever, be it quality, existent individual, or law, is an icon of anything, in so far as it is like that thing and used as a sign of it» (EP2: 291). This more mature view coheres with what Peirce says in **T1(i)–(ii)** and contradicts what he says in **T1(iii)** and **T2**, but since no reference is made here to the idea of "pure" icons that can only be possibilities, there is no need to distinguish icons in the strict sense from hypoicons.

If this reconstruction is correct, then, the appeal to the notion of hypoicon in support of the idea of intra-trichotomic combination is unsuccessful. It is so because, first of all, the notion of hypoicon is a temporary expedient that is soon superseded. In the second place, because in its final stage, corresponding to **T1(i)-(ii)**, the theory of the hypoicon does not imply intra-trichotomic combination. Only the first stage of that theory, corresponding to **T1(iii)** and **T2**, may be taken to imply some version of the idea of intra-trichotomic combination. But that stage, if my reconstruction is correct, is doubly superseded[11].

3. Some supporters of the idea that intra-trichotomic combination is an element in Peirce's mature theory of signs back up their claim by aid of the following passage:

Symbols grow. They come into being by development out of other signs, particularly from icons, or from mixed signs partaking of the nature of icons and symbols. We think only in signs. These mental signs are of mixed nature; the symbol-parts of them are called concepts. If a man makes a new symbol, it is by thoughts involving concepts. So it is only out of symbols that a new symbol can grow. *Omne symbolum de symbolo* (CP 2.302 = EP2: 10).

This is another famous passage that was printed in the *Collected Papers*. In this passage, it is held, Peirce is explicit that some signs are mixed entities that partake of the nature of icons and symbols, and thus he is committed to the acceptance of intra-trichotomic combination[12].

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[11] A lucid and philologically informed analysis of Peirce's notion of hypoicon is in Jappy (2014). Jappy thinks that *SLC* and *NDTR* are two distinct and complementary approaches to sign taxonomy. If I'm correct, they are incompatible, and the latter was intended not to complement, but to replace the former.

[12] «That the symbolic dimension presupposes, appropriates, and transforms the prior dimensions entails that one must avoid reifying or radically separating sign types or semiotic powers. Peirce's model of semiosis establishes that every sign configuration produced by humans will be constituted, in different measures, by a mixture of, and transitions between, iconic, indexical, and symbolic factors» (Innis 2020: 38).

The passage comes from "What Is a Sign?" (EP2: 1-10), the second chapter of the unpublished logic book *How to Reason: A Critick of Arguments*, to which Peirce worked intensely in 1894. This chapter contains an exposition of Peirce's division of signs into icons, indices, and symbols, and an argument to the effect that signs of the three kinds must be employed in reasoning. A similar expositive strategy – first the division of signs, then the argument that they are all needed in reasoning – is in the 1885 "On the Algebra of Logic" (W5: 162-190). Now, since the passage in question comes from a work dated 1894, it would not be surprising to see that Peirce is here accepting something like intra-trichotomic combination. As we saw above, it is only with the *Syllabus* of 1903, and especially with *NDTR*, that Peirce arrives at a general classification of signs on the basis of a combinatorics in which signs are the result of the combination of distinct semiotic parameters, where these parameters are never from the same trichotomy (intra-trichotomic combination) but always from distinct trichotomies (inter-trichotomic combination). The passage in question, then, could have been written at a time when Peirce had not yet had the idea of inter-trichotomic combination and was still thinking in terms of intra-trichotomic combination.

Yet a closer look shows that this idea is misguided. In the next section of "What Is a Sign?" Peirce says that «[i]n all reasoning, we have to use a mixture of likenesses [icons], indices, and symbols. We cannot dispense with any of them. The complex whole may be called a symbol; for its symbolic, living character is the prevailing one» (EP2: 10). This opens the second step of the expositive strategy, the step at which Peirce argues that signs of the three kinds are needed in reasoning. The idea is the following[13]. A proposition is a symbol that involves symbols (terms), just as an argument is a symbol that is composed of symbols (proposition). Now, as a consequence of the discovery of quantification theory at the beginning of the 1880s, Peirce had come to the conclusion, that he would later refine but never abandon, that a proposition cannot be composed of symbols only. Variables range over a domain or "universe of discourse". But the universe of discourse is a singular object which cannot be described in general terms, i.e. by means of symbols (for symbols are general signs); the universe of discourse must be directly referred to or indicated: «tokens [symbols] alone do not state what is the subject of discourse; and this can, in fact, not be described in general terms; it can only be indicated» (W5: 164). Some index or sign of the nature of an index is thus necessary in every proposition: «a purely demonstrative sign [index] is a necessary appendage to a proposition, to show what world of objects, or as the logicians say, what "universe of discourse" it has in view» (W4: 250)[14].

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[13] Cf. W5: 163-164 for the 1885 version of the argument.
[14] Murphey (1961: 299-300), was the first to explain how the discovery of quantifi-

To express a proposition, then, both indices and symbols are required. To express an argument, icons are needed, too. Here is how this point is made in "What Is a Sign?":

> Suppose a man to reason as follows: The Bible says that Enoch and Elijah were caught up into heaven; then, either the Bible errs, or else it is not strictly true that all men are mortal. What the Bible is, and what the historic world of men is, to which this reasoning relates, must be shown by indices. The reasoner makes some sort of mental diagram by which he sees that his alternative conclusion must be true, if the premise is so; and this diagram is an icon or likeness. The rest is symbols; and the whole may be considered as a modified symbol (EP2: 10).

An argument is a symbol in which a symbol, the premise (for all premises may be conjunctively joined into a single "copulative premise"), is transformed into another symbol, the conclusion. Each of these symbols contains indices, and the transformation of the one into the other is made by means of icons. Take the syllogism:

(1)
Some cats are not pets
All cats are mammals
Therefore, some mammals are not pets

In order to decide that (1) is valid one has to observe or otherwise recognize that (1) has the same logical form as (2), which we assume is known to be a valid syllogistic form in the third figure.

(2)
Some M are not P
All M are S
Therefore, some S are not P

In other words, one has to observe or otherwise recognize the *similarity* between (1) and (2) and can judge of the validity of (1) only on the basis of its embodying the valid logical form represented in (2). If this is true of syllogism, which is one of the simplest forms of reasoning, it must be true of any form of reasoning whatever. Now similarity can only be expressed by icons. Therefore, icons of the logical kind are needed in all reasoning. An argument is a symbol in which a premise-symbol is transformed into a conclusion-symbol by means of logical icons.

When in "What Is a Sign?" Peirce says that symbols grow, he has in mind this semiotically-oriented representation of inference. It is true that

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cation in 1882-1883 aided in shaping the new theory of the proposition; cf. also Short (2007: 46-51).

in deduction the conclusion does not really represent a growth over the premises, because no information is contained in the former that was not contained in the latter, but at least in induction and abduction the symbol of the premise "grows" into the conclusion. Accordingly, in general, "the whole may be considered as a modified symbol", that is, the argument, whether inductive, abductive, or deductive, may be considered as a symbol in which the premise-symbol grows into a conclusion-symbol. The whole, i.e. the argument, is a "mixed sign partaking of the nature of icons and symbols" in the sense that it contains symbols and icons as components, not in the sense that it has indexical and iconic aspects. The argument contains propositions, which are symbols, which in turn contain indices. The argument has or instantiates a logical form, which is an icon. But none of these elements is a mere *aspect* of the argument; it is a *component* of it. The "mixed signs partaking of the nature of icons and symbols" that Peirce mentions in the passage are the symbolic arguments with their symbolic, indexical, and iconic components.

The distinction between an aspect and a component of a sign is crucial here. A sign may be a composite entity in the sense that it has parts that are themselves signs. A proposition has parts, a subject and a predicate, and these parts are themselves signs; respectively, an index and a symbol; propositions are *composed* of indices and symbols; indices and symbols are components of propositions. In this sense, it does not seem really appropriate to say that a proposition is a mixed entity featuring indexical and symbolic *aspects*; rather, it is a composite entity featuring indexical and symbolic *components*.

That some such distinction between an aspect and a component of a sign has to be made one way or another results from the following, decisive consideration. In the final version of the *Syllabus* of 1903 (EP2: 295), a proposition is defined as "legisign symbol dicisign", or in brief a "symbolic dicisign" or "dicent symbol", for according to rule (iii) all symbols are legisigns[15]. Each of the three parameters that form the definition comes from a distinct trichotomy: a proposition is a legisign (not a qualisign nor a sinsigns, although its occurrences are sinsigns); it is a symbol (not an index nor an icon); it is a dicisign (not a rheme nor an argument). Each of the three parameters that compose the definition may well be said to be an "aspect" of the proposition. Now a proposition, *qua* "legisign symbol dicisign", has also parts: «it is composite inasmuch as it necessarily involves a Rhematic Symbol [...] to express its information and a Rhematic Index-ical Legisign to indicate the subject of that information» (EP2: 295-296). A proposition has a predicate, which is a rhematic symbol, and a subject,

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[15] In the *Syllabus*, Peirce introduces the term "dicisign" to cover both indexical and symbolic propositions. The best analysis of Peirce's notion of dicisign is in Stjernfelt (2014).

which is a rhematic indexical legisign. These are not *aspects* of the sign but parts or *components* of it. Just like it would make little sense to say that the predicate and the subject are "aspects" of a proposition, so it makes little sense to say that the component signs are aspects of the whole that they compose. Conversely, "legisign", "symbol" and "dicisign" are parameters that define the proposition, and as such they are aspects of it; it would make little sense to say that they are components of it; they are, if any, components of its definition.

4. Notwithstanding the consensus that classical and contemporary Peirce scholarship seem to have reached, the idea that a sign is defined by the combination of parameters that belong to the same taxonomic trichotomy, or by intra-trichotomic combination, is foreign to, and indeed even contradicts, Peirce's mature theory of signs, the theory achieved and expounded in the *Syllabus* of 1903. The aspects of the definition of a class of signs are parameters that come from distinct trichotomies, and which are combined in the definition. In the definition, parameters are inter-trichotomically, not intra-trichotomically combined. In a phase that precedes the *Syllabus* Peirce had indeed spoken of "mixed signs partaking of the nature of icons and symbols"; but the "mixture" in that context has to be regarded as resulting from semiotic composition, not from semiotic "aspectualization": the "symbolic" and the "iconic" are not *aspects* of the argument, they are parts or *components* of it.

Francesco Bellucci
Università di Bologna
Dipertimento delle Arti
Via Azzo Gardino 23, 40122 Bologna
francesco.bellucci4@unibo.it
https://orcid.org/0000-0002-0435-5453

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Abbreviations for Peirce's works

R   A Harvard manuscript (Charles S. Peirce Papers, 1787-1951, MS Am 1632, Houghton Library, Harvard University) as listed in R. Robin, *Annotated Catalogue of the Papers of Charles S. Peirce*, Amherst, University of Massachusetts Press, 1967; RL refers to letters that are listed in the correspondence section of Robin's catalogue. CSP refers to Peirce's own pagination; ISP to the numbers stamped in 1974 on each sheet of a copy of the microfilm edition of the Harvard manuscripts (*The Charles S. Peirce Papers*, Cambridge, MA, Harvard University Library, 1966, 33 reels) and kept at the Institute for Studies in Pragmaticism, Texas Tech University, Lubbock, TX.

CP   *The Collected Papers of Charles S. Peirce*, 8 vols., edited by C. Hartshorne, P. Weiss, and A.W. Burks, Cambridge, MA, Harvard University Press, 1933-1935, 1958.

EP2   *The Essential Peirce Vol. 2*, edited by the Peirce Edition Project, Bloomington, Indiana University Press, 1998.

W   *Writings of Charles S. Peirce: A Chronological Edition*, 7 vols., edited by E. Moore, C.J.W. Kloesel *et al.*, Bloomington, Indiana University Press, 1982-2009.

SWS   *Selected Writings on Semiotics*, edited by F. Bellucci, Berlin, Mouton De Gruyter, 2020.

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