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The Dismissal of ‘Substance’ and ‘Being’ in Peirce’s Regenerated Logic

Abstract. After introducing the debate between substance philosophy and process philosophy, and clarifying the relevance of the category of ‘substance’ in Peirce’s thought, the present paper reconstructs the role of ‘substance’ and ‘being’ from Peirce’s early works to his theory of the proposition, provided after his studies on the logic of relatives. If those two categories apparently disappear in Peirce’s writings from the mid-1890s onwards, the account of ‘subject’ and ‘copula’ in Peirce’s analysis of the proposition allows one to grasp the reasons why Peirce omits ‘substance’ and ‘being’ in favor of his three categories (Firstness, Secondness, Thirdness), and to understand why his philosophy cannot be considered as a substance philosophy.

Keywords: Charles S. Peirce; logic of relatives; substance; being; process

1. Substance, process, and pragmatism

The fortunes and misfortunes of the concept of substance are representative of all the history of philosophy, from its very beginning. Concerning pragmatism, the role and relevance of ‘substance’ are usually put at the margins, and not accidentally. The marginality, and more radically the rejection of the concept of ‘substance’, is generally indicated as one of the main features characterizing this tradition of thought. As Max Fisch highlights, introducing Peirce, James, Royce, Santayana, Dewey, and Whitehead as ‘classical American philosophers’¹, one tenet these thinkers share with one another is the abandonment of the concept of ‘substance’

¹ I use ‘classic American philosophy’ following Fisch’s interpretation, provided in the introduction of his well-known selection of essays [see 25, p. 1].

for that of ‘process’ [see 25, p. 22].² Fisch’s statements refer both to the general category of ‘substance’ and the consequent abandonment of mental and material substances (the Cartesian *res cogitans* and *res extensa*). With the so-called ‘classical American philosophers,’ subjects and objects are not any longer considered as independent, unchanging beings, but rather are viewed as derivative forms of events and processes. This line of interpretation has been widely explored in the past century, among others by Douglas Browning [9], Charles Hartshorne [30], Sandra Rosenthal [52], and more recently by Nicholas Rescher [50], Guy Debrock [17], often re-examining pragmatism in light of Whitehead’s philosophy.³

For William James, as well as for John Dewey and George H. Mead, the references to ‘process’ are quite explicit. In James’s writings, ‘process’ becomes a prominent feature of his mature thought, although the idea of ‘stream of consciousness’ already adumbrates some of its characteristics. For instance, James wrote in the preface to *The Meaning of Truth*: “Truth happens to an idea. It becomes true, is made true by events. Its verity is in fact an event, a process, the process namely of its verifying itself, its verification. Its validity is the process of its validation” [33, p. x].

More broadly, the adoption of ‘process’ in Dewey’s philosophy plays a pivotal role not only in his theory of inquiry but also in his view of reality, which he describes as “the growth-process itself” [18, p. 275], while in Mead the concept of ‘process’ substitutes that of ‘substance’ for he radically rethinks the self as ‘emergence’ [39, p. 178].

About Peirce, the matter is more controversial. It has already been noticed that he never adopted ‘process’ as a genuine piece of philosophical jargon [see 52, p. 113]. Nonetheless, his ‘synechism’ (from the Greek *synechés*, meaning *continuous*, + the suffix *-ism*) stands inexorably in the

² For the sake of clarity, the other common tendencies are: 1) The damnation of Descartes, 2) The naturalizing of mind and the mentalizing of nature, 3) The obsolescence of the eternal, 4) The reduction of yesterday to tomorrow, 5) Purpose in thought, 6) Exit the spectator, 7) The theory of signs, 8) Laboratory vs. seminary philosophy, 9) Science as a cooperative inquiry, 10) The supremacy of method, 11) Science and society, 12) The great community [see 25, pp. 19–39].

³ A. N. Whitehead’s thought is undoubtedly the philosophy most widely used to develop a philosophy of process, which is based on the primacy of becoming over being, in opposition to an Aristotelian-inspired substance philosophy, which instead conceives of substance as “the ultimate substratum which is no longer predicated of anything else” [62, p. 18].

way of any substance philosophy.⁴ Apart from general studies on pragmatism and process philosophy, the concept of 'substance' in Peirce's thought has been especially addressed with reference to the problem of individuality and personal identity (cf. [47], [14, pp. 81–87]), understood as the permanence of certain traits, or at least the possibility of recognizing them, through time and changes. More recently, Kory Sorrell offered a pragmatic account of substance based on Peirce's categories of Firstness, Secondness, Thirdness [55]. However, all those valuable pieces of work do not contain any detailed discussion of Peirce's logic; that is, his adoption of 'substance' from a logical standpoint. Accordingly, the present paper aims to investigate from a logical perspective the assumption of 'substance', and contextually of 'being', by Peirce, with special reference to his theory of the proposition. Through a textual analysis of Peirce's development of thought, the first part of the paper illuminates the function assumed by the category of 'substance' and 'being' until *On a New List of Categories* (1867), whereas the second part investigates their gradual dismissal, from the studies on the logic of relatives onwards, which led Peirce to a new, original theory of propositions, freed from bias determined by languages, especially by Indo-European grammars. Overall, such an investigation is not only motivated by the fact that Peirce does refer to 'substance' in his writings, but — first and foremost — by Peirce's methodological assumption, early stated⁵ and always

⁴ For this reason, Rescher refers to Peirce's "synechism" as a useful approach to understanding how 'process' represents a "fertile device in ontology" [50, pp. 31–32]. Peirce conceives of synechism both as a regulative principle and as a metaphysical hypothesis. For instance, in 1898 he plainly states that he objects to calling his "metaphysical system as a whole" *Tychism* because the latter is only subsidiary to *Synechism* [RLT 261, see CP 1.172, c. 1893; W 8: 157, 1892; CP 8.123n20; EP2: 1–3; 179 ff.]; on the relevance of such metaphysical insights for Peirce's later philosophy, see for instance [EP2, p. 339, 1905, Peirce's manuscript R 602, CSP 2–3]. On Peirce's synechism and its metaphysical implications, among others (see [42, pp. 386, 394 ff.], [24, p. 5], [34, p. 37], [37, p. 24], [7, p. 158] [20, 29, 31, 35, 36, 46, 49, 63]).

⁵ In this regard, it is well-known the influence of both Aristotle and Kant. For instance, Peirce states in 1865: "I fear I have wearied you in these lectures by dwelling so much upon merely logical forms. But to the pupil of Kant as to the pupil of Aristotle the Analytic of Logic is the foundation of Metaphysics. We find ourselves in all our discourse taking certain points for granted which we cannot have observed. The question therefore is what may we take for granted independent of all experience. The answer to this is metaphysics. But it is plain that we can thus take for granted only what is involved in logical forms. Hence, the necessity of studying these forms" [W1, p. 302].

maintained that “metaphysics must take as the guide of its every step the theory of logic” [EP2, p. 36, 1898].

Accordingly, following Peirce’s general methodology and his classification of the sciences, the paper begins to analyze the logical side of the matter, in order to see whether or not a philosophical discussion about ‘substance’ and ‘process’ in Peirce’s thought is really justified.

2. ‘Substance’ and ‘being’ in Peirce’s early philosophy

While the notion of ‘process’, as it has been underlined in Section 1, never became representative of Peirce’s philosophical vocabulary, the category of ‘substance’ is adopted quite consistently in his lectures and writings on logic, at least until *On a New List of Categories* in 1867. Its occurrences mainly refer to two crucial issues: the research of the necessary categories of reasoning, and the account of predication. *On a New List of Categories* is in continuity with the theses advanced by Peirce in previous writings. Nonetheless, the present section analyzes this essay separately from them. On the one hand, *On a New List of Categories*, being identified by the author as “my one contribution to philosophy” [CP 8.213; RL 67 ISP 16, 1905], deserves a separate examination. On the other hand, some of the topics under discussion are explained more clearly earlier. Thus, the account of previous drafts and writings is helpful to gain clarity and paves the way for a better understanding of the contents displayed in *On a New List of Categories*.

2.1. Preliminary remarks on ‘Substance’ and ‘being’ in Peirce’s early writings

Already before 1867, speaking of the categories, the author associates ‘substance’ with the “absolute IT” [W1, p. 165, 1865], and defines this category as the most fundamental one. For instance, he affirms: “if we set out to think about this table; we begin (do we not?) with supposing a substance. *It is hard; it is red*” [W1, p. 214, 1865]. More radically, as he summarizes in *Logic of the sciences*: “The universal hypothesis which we are forced always to make is of a substance, that there is something which is. This necessity is the first law of the understanding and its product is the first category” [W1, p. 331, 1865]. Thus, Peirce lays emphasis on the universal hypothesis of ‘substance’ as the first law of understanding,

and makes it coincide with “the conception of the immediately present in general” [W1, p. 473, 1866].

Furthermore, he maintains that this idea of ‘substance’ corresponds to the concept of ‘subject’, as it is used in the traditional analysis of propositions: “it is that which can only be subject never predicate” [W1, p. 473, 1866]. Later that year, he specifies, in a draft of *On a New List of Categories*: “This conception of the immediately present as such, since it implies merely that A is the subject of a proposition, but not a predicate (since predicates are mediate cognitions), is properly indicated by the term substance” [W1, p. 517, 1866].

Moving to the analysis of the category of ‘being’, Peirce highlights how it represents “the final unity of consistency” [W1, p. 352, 1865]. In Peirce’s own words, that “which lies at the centre of consciousness and completes the act of understanding is being— or that which whatever is intelligible possesses in itself” [W1, p. 473, 1866]. At the level of the analysis of the proposition, this conception of ‘being’ is expressed by the copula, because ‘being’ represents “the force of the copula of a proposition” [W1, p. 352, 1865]. It stands for the unity of the proposition, “to which the understanding reduces impressions (. . .). This unity consists in the connection of the predicate with the subject and introduces the conception of being, or that which is implied in the copula” [W1, p. 352, 1865]. He then continues:

Being introduces nothing into the thought; for ‘A griffin is or would be’ means nothing. Hence, this conception is [. . .] the accomplishment of that unity for which hypotheses are instituted. If we say, ‘The ink is black’, the ink 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 of blackness to it, as a hypothetical predicate. [W1, pp. 517–518, 1866]

So, at least until NL, Peirce’s approach seems perfectly aligned with classical (Aristotelian) positions, as well as substance philosophies.

2.2. *On a New List of Categories*

On a New List of Categories (1867) has always been the object of special attention, since Peirce considered it the keystone of his philosophy.⁶ In

⁶ Almost twenty years later Peirce wrote: “The truth is that my paper of 1867 was perhaps the least unsatisfactory, from a logical point of view, that I ever succeeded

this essay ‘substance’ and ‘being’ still play a primary function, but their conceptions are not to be overlooked, or easily attributed to Aristotle or Kant, as one might expect at first sight.

Before focusing on Peirce’s interpretation of these conceptions, the latter needs to be placed in the more general context of NL. Overall, NL aims to make a new list of the indispensable categories needed for reducing the content of consciousness to unity. One of the most controversial topics of NL is the method adopted for deducing these categories,⁷ whereas it is generally accepted that the later Peirce will never abandon the three “intermediary categories” [W2, p. 55, 1867] – that is “Quality (Reference to a Ground), Relation (Reference to a Correlate), Representation (Reference to an Interpretant)” [W2, p. 54], as well as his theory of signs.⁸

As for the previous drafts, Peirce in NL introduces ‘substance’ and ‘being’ as the universal categories that represent “the beginning and end of all conception” [W2, p. 50], and he again refers to both concepts at two different levels: as categories in general, and with reference to propositions. §§1–4 contain Peirce’s introduction of those categories at both levels, and in §11 they are mentioned as a part of his new list of categories.

At the level of universal conceptions, ‘substance’ is “*what is present in general*”, with “no connotation, and therefore no proper unity. [...] Before any comparison or discrimination can be made between what is present, what is present must have been recognized as such” [W2,

in producing; and for a long time most of the modifications I attempted of it only led me further wrong” [CP 2.340; R 787 CSP 34, 1896; now in Peirce, 2000, p. 67]. Whether or not it really represents the most valuable work of Peirce’s in logic, as well as the apex of his philosophical production, has been put into question (see [42, p. 66], [54]).

⁷ On the debate about what kind of deduction Peirce is performing, whether it is transcendental, metaphysical, or how to define it [see also 11, 16, 28, 41].

⁸ Furthermore, NL is often used as an ‘argument’ to support the continuity and internal development of Peirce’s thought, or for the complete opposite, namely for demonstrating the discontinuity with his phenomenological writings. For a reconsideration of the continuity between NL and Peirce’s phenomenology, see [26]; on their discontinuity, see [2]. On the development of Peirce’s theory of categories and phenomenology see also [16, 48, 51]. In this regard, the analysis of Peirce’s conceptions of ‘substance’ and ‘being’ can also be viewed as a telling element for detecting steps and differences in the evolution of his thought.

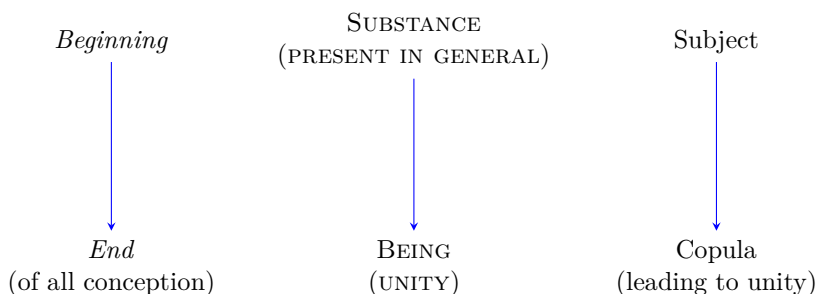


Figure 1.

p. 49]. Being instead is that “which completes the work of conceptions of reducing manifold to unity” [W2, pp. 49–50] *via* predication.

At the level of the proposition, Peirce in the first paragraphs restates that ‘substance’ represents the “IT in general” [cf. NL §3], which is expressed in propositions by the subject. The unity of the proposition, consisting in the connection of a predicate with a subject [cf. NL §2], still pivots around the copula. The importance of the analysis of the proposition and predication for detecting those two universal categories is emphasized also in §7, where Peirce states that “the conception of *being* arises upon the formation of a proposition”, and that “the function of the conception of being is to unite the quality to the substance” [W2, p. 52]. Therefore, as Gartenberg has shown, by analyzing propositions, Peirce tries to isolate what are “those conceptions *we do think with* in predication” [27, p. 591]. To recall Peirce’s famous example:

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. Though *being* does not affect the subject, it implies an indefinite determinability of the predicate.

[W2, p. 50]

Take Figure 1 as a rough visual scheme of the analysis carried out so far.

To this extent, a full correspondence is maintained between Peirce’s conceptions of *substance* and *being* and the terms *subject* and *copula*. And it is worthwhile to notice that such an exposition is still close to the traditional, Aristotelian view of the matter. This interpretation is also confirmed by the definition of ‘IT’ already recalled, namely that which is “neither predicated of a subject, nor in a subject, and accordingly is iden-

tical with the conception of substance” [W2, p. 49]. However, Peirce’s view of substance is not so simple as above displayed. As Gartenberg sharply noticed:

While ‘the present in general’ seems to refer to the manifold of sense as such, the notion of an ‘it’ already seems to refer to an element within that manifold (which is itself a manifold). I take it that by ‘substance’ Peirce means to denote both of these conceptions—that of the manifold qua manifold, and that of a particular slice, as it were, of the manifold that becomes present to consciousness. Thus Peirce’s basic notion of ‘substance’ has a twofold sense, denoting on the one hand the manifold as such, and on the other hand a particular item articulated amidst the manifold. [27, p. 593]

In addition, even taking into account this double meaning of ‘substance’,⁹ the most significant change concerning the role played by ‘substance’ and ‘being’ *within* NL is the different order in which those two categories appear in the list of categories, provided later in that essay [cf. §11]. Indeed, the ‘new’ list is based on a different methodological assumption. The universal conceptions presented in NL do not go from ‘substance’ to ‘being’, ‘from the beginning to end of conception’, as one would expect on the basis of the opening paragraphs, but the other way around. In order to ‘visually’ compare the first paragraphs of NL (see Figure 1) with ‘the new list of categories’, I report in Figure 2 the two correspondent lists provided by Peirce in the essay, on the left that of the categories, and on the right that of their “supposable objects”. The difference between this new list and the previous contents of NL (cf. Figure 1) does not represent an apparent inconsistency of Peirce’s thought. They are arranged following different methods, so that Figure 1 and 2 may work together, only once it has been specified that their methods diverge.¹⁰ The latter

⁹ On the difference between Peirce and Kant on substance, see [54, pp. 273–74].

¹⁰ According to Peirce, categories are related progressively by the method of ‘precision’. As Peirce later describes this method (also called ‘precession’, ‘precession’ or ‘precise abstraction’): “Precession consists in logically supposing a case in which the former idea is present but the latter not so. Thus we can prescind space from color since we can suppose a space between two objects to be uncolored, although we cannot visually dissociate space from color, since we must imagine every uncolored space to be surrounded with colored objects, if we imagine it visually” [R 296 CSP 28–29, 1908]. To this extent, *being* is the most ‘prescindable’ category, and the other categories cannot be prescinded from *being*. To be noticed that this does not mean that *precision* is Peirce’s method of deducting categories (cf. also fn. 7). As De Tienne clearly pointed out, precision is rather a “*un garde-fou, un critère de contrôle*”

BEING,	What is.
Quality (Reference to a Ground),	Quale—that which refers to a ground,
Relation (Reference to a Correlate),	Relate—that which refers to ground
Representation (Reference to an	and correlate,
Interpretant),	Representamen—that which refers to
SUBSTANCE.	ground, correlate, and interpretant.
[. . .]	It. [W2, p. 54, 55]

Figure 2.

is determined by putting categories in such a way that each one cannot be prescindend from the one(s) above it. Therefore, the categories are not anymore ordered following the scheme of predication previously assumed, according to which substance comes first, and then ‘something’ is predicated of it. In the new list, categories are arranged by a “retrograde method” [27, p. 598], “through which reason must pass in retracing the way from the conception of Being to that of Substance”, as Peirce wrote in 1893 [R 403 CSP 20].¹¹

Therefore, although overall NL presents — as Fisch said — “the first list of categories that opens the way to making the general theory of signs fundamental in logic, epistemology, and metaphysics” [W1, p. xxvi], at the end the path followed so far some remarks are in order. (1) Peirce, at least in what he thinks to be his highest contribution to logic, still adopts ‘substance’ and ‘being’ as key concepts. (2) His conception of ‘substance’ is ambiguous insofar as he conceives it as the present in general, the manifold of impressions, and the ‘IT’, that is, the manifold in the way it is offered to consciousness. (3) The author provides a list with an order diametrically opposed to that followed by traditional theories of predication (used also by himself in the first part of the essay, see Figure 1), so that from a logical point of view the first category is no longer substance. Substance rather comes at the end of the process, because it cannot be prescindend from the other categories. (4) Although some categories of the new list do not have a propositional correspondent (Quality indeed corresponds to the predicate, but Relation and

(see [16, p. 233]), because through precision Peirce can discover from what our initial conception (of substance) can be prescindend, but not what can be prescindend from *being*.

¹¹ This manuscript is a reworking of NL, written as Chapter I (“The Categories”) for Peirce’s *Grand Logic*.

Representation do not seem to have any), nonetheless Peirce makes the categories of ‘substance’ and ‘being’ clearly correspond to ‘subject’ and ‘copula’, at the propositional level.¹²

3. The glassy essences of ‘substance’ and ‘being’

3.1. Peirce’s omission of ‘substance’ and ‘being’ in his regenerated logic

If one considers Peirce’s high opinion of his 1867 essay, and the pivotal role attributed to ‘substance’ and ‘being’ in it (and also later [cf. R 403, 1893]),¹³ one might expect to find those categories expressed with the same strength even later. Instead, they later disappeared. For instance, in a short paper written around 1894 (not long after *Grand Logic*), significantly entitled “The List of Categories: a Second Essay”,¹⁴ they are no longer mentioned. They are neither refuted, nor explicitly criticized and consequently dismissed, but simply vanished, substituted only by the three ‘intermediate’ categories of quality, relation, representation (Firstness, Secondness, Thirdness). As Short has recently emphasized:

How do we know when being and substance were sloughed off? Did this densely argued, excessively concise essay include a couple of superfluous categories? The whole of NL’s argument is a passage from being

¹² The problem has been pinpointed by [54, pp. 273–76] and represents one of the several obscurities of NL. Also, it seems impossible to reach a satisfactory explanation based on Peirce’s writings of that period. So, for the purposes of the present paper, it is important to notice (i) that in the NL there is not a full correspondence between Peirce’s new list of categories and his analysis of the proposition, and that (ii) even so Peirce maintains a strong equivalence between ‘substance’ and ‘subject’, and ‘being’ and ‘copula’.

¹³ For instance, paragraphs 18–19 are still dedicated to ‘substance’ and ‘being’ [cf. R 403 CSP 17, 1893].

¹⁴ Also in R 898 Peirce refers to NL, describing the list as “a table of conceptions drawn from the logical analysis of thought and regarded as applicable to being. This description applied not only to the list published by me in 1867, and which I here endeavor to amplify, but also to the categories of Aristotle and [those] of Kant. The latter have been more or less modified by different critics as Renouvier, but still more profoundly Hegel. My own list grew originally out of the study of the table of Kant” [R 898 CSP 1, c. 1894]. For a short presentation of his logic of relatives, see Peirce’s reviews of Schröder, published in *The Monist* in 1896–97, and the third 1898 ‘Cambridge Conference lecture’ [see Peirce, 1896, 1897, and R 431, RLT 146–64].

to substance. The intermediate categories are such only by virtue of bringing substance to the unity of being. They are nothing without substance and being. [54, p. 290]¹⁵

The quotation is important to acknowledge that the problem has already been raised by scholars, while the answer is still to come. Why were substance and being sloughed off? In answering this question, there are some hints in Peirce's writings, as well as in secondary literature, that point at the relevance and originality of Peirce's studies on the logic of relatives.

3.2. The logic of relatives: the three categories without 'substance' and 'being'

As Murphey summarizes later: "the logic of relations forced Peirce to abandon the subject-predicate theory of the proposition that underlies the 'New List', and so required that he overhaul his basic position" [43, p. 166]. How did Peirce manage to do so? It is beyond the purposes of the present paper to offer a detailed reconstruction of Peirce's logic of relatives [see, e.g., 21, 38, 40, 41]. However, to understand this change of perspective it is essential (a) to remember that the key concept at the basis of the logic of relatives is indeed that of 'relative', which is defined by Peirce as "an icon, or image, without attachments to experience", without a local habitation and a name, but with indications of the need of such attachments" [Peirce, 1896, p. 163]; (b) to analyze the results and claims that Peirce made for his own studies. In the manuscript already quoted, "The List of Categories: second essay" (c. 1894), he wrote:

a thorough study of the logic of relatives confirms the conclusions which I had reached before going far in that study. It shows that the logical terms are either monads, dyads, or polyads, and that the latter do not introduce any radically different elements from those that are found in triads. [R 898 CSP 1, c. 1894]

This passage is of the utmost interest for two reasons. On the one hand, it restates the fundamental role assigned by Peirce to the categories of Firstness, Secondness, and Thirdness, and proves that this conclusion had already been reached before his studies on the logic of relatives. Since Peirce referred to NL in the previous paragraphs, it is confirmed that the author considers the three categories as that 'one contribution

¹⁵ This remark is not new, see Fisch in [W1, p. xxvi] and [59, p. 29].

to philosophy’, later attributed to NL on the whole.¹⁶ On the other hand, according to Peirce the logic of relatives further corroborates that theory. In light of these considerations, a question arises: how does the logic of relatives allow him to maintain the three categories, without any reference to those of ‘substance’ and ‘being’?

There are two methods of answering this pivotal question, which correspond to the different levels of analysis already noticed in NL – (a) the categorical approach, and (b) the propositional one [cf. NL, §2.1].

(a) To understand Peirce’s ‘categorical approach’ it must be first remembered that for the author “the logic of relatives is [...] far from being a specialized branch of logic. On the contrary, it greatly enlarges and amplifies all logical conceptions” [R 534 CSP 4, nd.].¹⁷ So, if we consider Peirce’s work on categories, the absence of ‘substance’ and ‘being’ may be understood as a consequence of the recognition that the three intermediate categories – sketched out earlier, and then logically improved by Peirce’s studies on the logic of relatives – can really suffice as ‘the’ universal categories of reasoning.¹⁸

(b) But there is also another way of addressing the question: the ‘propositional method’, which is commonly not contemplated by scholars, although it is often adopted by Peirce. It focuses on his analysis of the proposition¹⁹ to understand whether or not the author still at-

¹⁶ Peirce himself suggests that the three categories, also addressed as Firstness, Secondness, Thirdness, are the main content of NL. See for instance the letter of 1904, Oct. 12 addressed to Lady Welby: “In pursuing this study, I was long ago (1867) led, after only three or four years’ study, to throw all ideas into the three classes of Firstness, of Secondness, and Thirdness. This sort of notion is as distasteful to me as to anybody; and for years, I endeavored to pooh-pooh and refute it; but it long ago conquered me completely” [SS, p. 24].

¹⁷ To understand Peirce’s categories in their generality, it is worthwhile to notice how the passage continues: “since metaphysical conceptions, as Kant showed (though very imperfectly in detail), and as they appeared even to the mind of Aristotle, and of Aquinas, are but conceptions of logic transplanted, it follows that the new and higher notion of logic must be expected to work a mighty development in all philosophy” [R 524 CSP 4, nd.]; see also [15].

¹⁸ This issue has been at the heart of many critical studies, starting from [10].

¹⁹ Generally speaking, it is well known that Peirce provides, after his studies on the logic of relatives, a remarkably original theory of the proposition, far from the Aristotelian perspective adopted at the beginning of NL. For instance, see [3, 4, 6, 12, 23, 32, 53, 56, 58]. Nonetheless, the connection between Peirce’s analysis of the proposition and his conception of substance and being hasn’t been taken into examination yet.

tributes any role to the conceptions of ‘substance’ and ‘being’, and how he accounts for them at the propositional level.

4. Toward a regenerated logic of the proposition

As Atkins recently displayed, Peirce’s “mature view” [2, p. 28]²⁰ of the proposition has been radically revised in comparison to the Aristotelian form of the proposition, as well as the one presented in NL [2, pp. 30–56, 232]. Because Peirce never explicitly discusses the omission of the categories of ‘substance’ and ‘being’ *as* categories, whereas he does discuss them with reference to propositions, the following section will focus on Peirce’s analysis of propositions, so to understand whether or not his later thought retains those fundamental conceptions.

As it has been shown in Section 2, according to Peirce to consider ‘substance’ and ‘being’ with reference to propositions means to speak of the concept of ‘subject’ and ‘copula’. Before examining Peirce’s new interpretation of these classical terms, a brief introduction to the regenerated logic of the proposition — advanced by the author from mid-1890s onwards, after his studies on the logic of relatives — is needed.

4.1. Propositions without copula

From the comparison between Peirce’s previous analysis of the proposition and his later view, the main difference that stands out is that according to the author every proposition is necessarily composed of two elements. Consider the following definition:

[the Proposition] must, in order to be understood, be considered as containing two parts. Of these, the one, which may be called the *Subject*, is or represents an Index of a Second existing independently of its being represented, while the other, which may be called the *Predicate*, is or represents an Icon of a Firstness. [EP2, p. 277, 1903]²¹

²⁰ By adopting the term “mature view” of the proposition, it must be clarified that in this paper I refer to Peirce’s account of the proposition after his studies in the logic of relatives, especially around 1900. Nonetheless, it is worthwhile noticing that later on Peirce further modifies and develops his view of the proposition, see for instance [SS, p. 69 and ff., 1908].

²¹ As it is apparent, it is (almost) impossible to dissociate Peirce’s logical account from his semiotic interpretation. On Peirce’s conception of logic as semiotics, see [5, 60].

Therefore, subject and predicate, index and icon, are the only two parts now required to form a proposition. They do not mean anything when isolated — “neither a pure icon nor a pure index can assert anything” [EP2, p. 307, c. 1904], but only in conjunction do they form a proposition. Accordingly, the unifying element cannot be associated anymore with the copula. How can it be? Peirce provides some illuminating examples of the meaning he attributes to propositions and the vast range of phenomena (not merely linguistic) they cover. For instance, Peirce explains that we face a proposition when we look at “a ‘man’s portrait with a man’s name written under it [...] although its syntax is not that of speech” [EP2, p. 282, 1903]. Similarly, another ‘natural proposition’ is the following:

If you write GLASS upon a case, you will be understood to mean that the case contains glass. It seems certainly the truest statement for most languages to say that a symbol is a conventional sign which being attached to an object signifies that that object has certain characters.

[R 409 CSP 95, 1893, now in Peirce, 2020, p. 23]

From these examples, it emerges that the unifying function performed in earlier writings only by the verb to be, understood as the copula, has been extended even to bare juxtaposition.²² Peirce is very explicit in making this claim: he describes the copula as “merely the accidental form that Syntax may take” [EP2, p. 282, 1903]. The verb ‘to be’ as copula is not prescribed by any law of reasoning, but stands simply for a bias rooted in what Peirce calls the “Aryan syntax”, which he wants to repudiate [EP2, p. 21, 1895]. He further explains:

The ordinary doctrine makes the copula the only verb, and all other terms to be either proper names or general class-names. The present author leaves the *is* as an inseparable part of the class-name; because this gives the simplest and most satisfactory account of the proposition. It happens to be true that in the overwhelming majority of languages there are no general class-names and adjectives that are not conceived as parts of some verb (even when there really is no such verb) and consequently nothing like a copula is required in forming sentences in such languages.

[EP2, p. 285, 1903]

By getting rid of the copula, it is apparent that Peirce is tracing a new path, far from both grammarians, and most of his coeval logicians, in-

²² On Peirce’s conception of ‘natural propositions’ [cf. 56, pp. 64–72] and on co-localization [57].

spired and re-shaped by his studies on the logic of relatives. For instance, consider Richard Whately’s statements in *Elements of Logic* — a book that Peirce knew well from the age of 12 years old [see SS, p. 73, 1908] — “It must be either IS or IS NOT; the substantive verb being the only verb recognized by Logic: all others are resolvable, by means of the verb, ‘to be’, and a participle or adjective” [61, p. 57]. On the contrary, Peirce proposes a highly innovative view of the logic and syntax of propositions, by defining the copula as an unnecessary element.²³ Such a perspective is not adopted by the author for demolishing the history of logic. On the contrary, he explicitly intends to restore and regenerate what he thinks is already adumbrated in ancient Greek philosophy. In this regard, the contents of some of his remarks, widely acknowledged by the history of linguistics, should not be overlooked. (i) First, Peirce often recalls that the copula, understood as the third part of the proposition, is merely a late invention, attributed to Abelard. For instance, he states:

Now while it is true that one of Aristotle’s memoirs dissects a proposition into subject, predicate, and verb, yet as long as Greek was the language which logicians had in view, no importance was attached to the substantive verb, ‘is’, because the Greek permits it to be omitted. It was not until the time of Abelard, when Greek was forgotten, and logicians had Latin in mind, that the copula was recognized as a constituent part of the logical proposition.

[EP2, pp. 308–09, c. 1904; cf. also EP2, pp. 282, 285]

(ii) Second, the author also observes that the very concept of “substantive verb” — usually associated with the copula — is but a poor translation by the Latin grammarian Priscian, the author of *Institutiones Grammaticae*:

We can hardly suppose that this writer [Priscian], who lived in Constantinople in the fifth century, did not know Greek perfectly; but he seems to have had no sense of the responsibility upon him or of the importance of choosing technical terms with care. For instance, it was he who gave to the verb ‘to be’ its title of the substantive verb. What could be more ill-fitting? But it is simply an attempt to translate the Greek term ὑπαρτικὸν ῥῆμα, verb of happening.

[R 1214 CSP 9–10, n.d.]

²³ Peirce dismisses the traditional concept of copula for logical reasons, namely in accordance with ‘the essential conditions to which signs must conform in order to function as such’ [EP2, p. 309, c. 1904], insofar as Peirce identifies logic with semiotics.

(iii) Third, Peirce often refers to different natural languages in the discussion of the copula, because according to him the adoption of ‘the substantive verb to be’ as the copula is limited to some Indo-European languages. The author remarks:

the appeal to language appears to me to be no better than an unsatisfactory method of ascertaining psychological facts that are of no relevancy to logic. But if such appeal is to be made [...], it would seem that they [logicians] ought to survey human languages generally and not confine themselves to the small and extremely peculiar group of Aryan speech. [EP2, p. 309, c. 1904]

Therefore, Peirce takes into account those languages that adopt a different ‘unifying strategy’ through words, letters, etc. other than the ‘substantive’ verb to be. For instance, he underlines that in Ancient Egyptian terms were connected in propositions by the word ‘*pu*’, which stands for the relative pronoun ‘which’ [cf. R 408 CSP 139, 1893].²⁴

On the whole, at a propositional level the copula does not represent anymore a fundamental element of the proposition. To come back to the famous example included in NL, “The stove is black”, in that essay the analysis was: (i) ‘the stove’ – substance/subject; (ii) ‘is’ – being/copula; (iii) ‘black’ – quality/predicate; whereas now it is ‘the stove’ – substance/subject; (ii) “_____is black” – quality /predicate [see also EP2, pp. 308–309]. Does it also imply that, at a categorical level, ‘being’ needs to be dismissed? Peirce never offered an answer to this question, but one cannot overlook that while at a propositional level it changes his mind about the copula, ‘being’ disappears from his categorical discourse. In Section 2.2 it has been pointed out that two categories of the new list (Relation, Representation) do not have a propositional correspondent, and that it represents one of the dark points of the essay. At first glance, the same might be said also for Peirce’s later account of ‘being’: ‘being’ is maintained at a categorical level, but without any correspondent element in the proposition. However – and apart from the fact that ‘being’ (as a category) was present in the 1867 essay, and later actually disappears from Peirce’s account of categories – two telling elements make this case different from that of ‘Relation’ and ‘Representation’. First, Peirce, after his studies on the logic of relatives, still insists on the importance of a ‘unifying’ element in the proposition, but clearly distinguishes it from the verb ‘to be’, and this cannot but imply a revision of the importance

²⁴ On Peirce and natural languages see for instance [22, 44].

of ‘being’ in his thought. Second, from Peirce’s new logical perspective, the “traditional” copula is now included in the predicate. If so, that is, if at the level of the proposition the predicate (later called *rhema*, cf. Section 4.2) retains the verb to be, why cannot – at least as a working hypothesis – it be thought that, at the categorical level, quality might suffice for both the two categories (‘being’ and ‘quality’), so that ‘being’ as a separate category is no more fundamental? As it is for ‘being’, also the concept of ‘substance’ can be understood in a new light after the analysis of Peirce’s idea of ‘subject’.

4.2. Subjects without substances

As one can imagine in light of Peirce’s dismissal of the copula, his conception of subjects and predicates do not exactly correspond to those of traditional logic [see also 45]. If in NL the copula was still the unifying element of the proposition, and connected subject and predicate together, after Peirce’s studies on the logic of relatives, the predicate retains the copula, becoming in this sense the center of the proposition, its necessary nucleus.²⁵ Peirce often chooses the word ‘rhema’ or ‘rheme’ (from the Greek, meaning “verb”, as opposed to “noun”) to emphasize the difference, and underline the verbal character of predicates [cf. 8]. According to him “a verb is a fragment of a possible proposition having blanks which being filled with proper names make the verb a proposition” [R 483 CSP 3, c 1901; cf. also R 15 CSP 22-3, c. 1896]. Furthermore, he specifies that “A *rhema* is somewhat closely analogous to a chemical atom or radicle with unsaturated bonds” [CP 3.421, 1892]. A monadic rhema or predicate, such as ‘____ is red’ needs a subject to be filled (and therefore to become a proposition); similarly, a dyadic predicate, such as, ‘____ loves ____’, needs two subjects to be filled, and a triadic predicate, such as ‘____ gives ____ to ____’, needs three subjects to be filled.

In consequence, the predicate is the purely ‘potential’ part of the proposition, which delineates its syntactical structure and provides the indications of the number of subjects needed, and the subject does not correspond any longer to the grammatical one.²⁶ Subjects may be many

²⁵ Another key feature of Peirce’s analysis of the proposition is that ‘common nouns’ are not considered as a necessary part of the proposition [cf., e.g., EP2, p. 309, 1904; cf. also Peirce, 1897, p. 163].

²⁶ Because of its indisputable relevance, this topic has been widely explored [cf. 1, 3, 13, 58].

and are not necessarily in the nominative case. Their characterizing feature is their ‘indexicality’, so that they are “quite *anti-general*, referring to a *hic et nunc* (...)”, and must be construed as “*stimulants to looking*, like the bicyclist’s bell” [R 441 CSP 12, 1898]. Even a percept, a mere look or a gesture — for instance a pointing finger — can become a subject [cf. EP2, p. 168, 1903]. Accordingly, subjects are proper names, and even prior pronouns, both personal and demonstrative, exactly for their prominent, essential ‘indexicality’. Such an account of ‘subject’ has not to be understood as a mere difference of a ‘grammatical’ kind. It is indeed the result of Peirce’s semiotic and logical approach. If in NL, as already Murphey noticed [42, p. 299], the subject was conceived of as a general term, after the discovery of the quantification theory [cf. e.g. W5, p. 178, 1885; CP 8. 41] the subject becomes an index, and as such it indicates an individual object, or “singular events, which are the only things *hic et nunc*” [EP2, p. 310, c.1904]. Subjects may play different functions from a grammatical perspective, but all of them *point to* those objects, singularities, that make the proposition informative. As it is apparent, the logical function of the subject is far from the one delineated in the first part of NL – still based upon an Aristotelian account of substance and subject. Subjects are no more representative of substances, to which one may attribute predicates. They are the references that are required to make a predicate become a proposition. To this extent, no concept of substance, traditionally correlated to that of ‘subject’, is required or can be inferred on the basis of Peirce’s analysis of the proposition. Subjects are such only because they accomplish the indexical function.

5. Concluding remarks: from propositions to categories

At the end of the path followed thus far, culminating in Peirce’s analysis of the proposition around 1900, it is possible to distinguish three different accounts of ‘substance’ in Peirce’s thought. (i) As has been analyzed in Section 2, until NL, the concept of substance is aligned with a traditional, Aristotelian view of propositions, categories and metaphysics. In NL, Peirce’s view oscillates between a traditional understanding of ‘substance’, and a view of ‘substance’ as the outcome of a process (of other categories). (ii) More radically, after his studies on the logic of relatives, ‘substance’ — and similarly ‘being’ — in the traditional sense of Western metaphysics, is abandoned, and Peirce’s analysis of the propo-

sition, especially his innovative reconception of 'subject', may offer an explanatory hypothesis. According to Peirce, the subject is any longer a substance, that of which we can predicate accidental qualities. The subject is often plural – a set of subjects more than a singular subject. And its nature is exclusively indexical; subjects are mere “stimulants to look”, for they refer to the universe of discourse to which the proposition must refer for its intelligibility [cf. for instance EP2, pp. 281–82, 1903]. If the logic of the proposition does not need any longer the traditional concept of 'subject' (correlated to that of 'substance'), and if metaphysics is grounded in logic (cf. Section 1), what should be the logical or metaphysical necessity of a category such as 'substance'? Accordingly, if one follows Peirce's analysis of the proposition, it leads to a radical re-definition of 'substance', which suggests more of a rupture with the tradition of substance philosophy than an internal development. Some similar conclusions were later reached also by Dewey, in a paragraph of his *Logic*, significantly entitled “Subjects and substances”.²⁷

From a syntactical point of view, in Peirce's mature thought 'subject' is not the foundational element of the proposition. According to him the 'substance' of reasoning, namely the key element of the proposition, should be identified with the predicate rather than the subject. Indeed, it is the prominence accorded to the *rhema* as the verbal nucleus of the proposition (and its intrinsic, relational structure) that led Peirce to radically revise the classical terms 'subject' and 'copula'. Thus, it is plausible to think that, in light of these logical results, the author was also led to dismiss the categories of 'substance' and 'being', as they are traditionally conceived. Other later writings corroborate this hypothesis. For instance, the author characterized 'substance' as 'feeling' (or Firstness), restating from another perspective the unnecessary of both

²⁷ Dewey writes: “According to the original Aristotelian logic (. . .). This theory of the nature of the logical subject at least recognizes that the logical subject has a determinate nature capable of grounding what is predicated of it. But the progress of science has destroyed the idea that objects as such are eternal substances, even such objects as the “fixed stars”. It also destroyed the notion of immutable kinds marked off from one another by fixed essences. The following problem accordingly arises: If the logical subject cannot be identified either with an object or sense-datum directly given to judgment for qualification through predication, nor yet with an ontological 'substance', what is meant by being an object substantial in any sense that makes it capable of serving as a subject? The answer to this question is implicit in what has been said. The subject is existential, either a singular this, or a set of singulars” [19, p. 127].

‘substance’ and ‘being’ as fundamental categories. In Peirce’s own words: “nothing that is logically conceivable can fulfil the definition of a substance, excepting only a sensation or other feeling that is perfectly simple and homogeneous, that endures changelessly without beginning or end” [R 296 CSP 22, 1908]. As it is apparent, Peirce explicitly describes here ‘feeling’ (that is another name for Firstness, or quality) with the characteristics usually attributed to substance.

As a conclusion, to reconnect the outcomes of the analyses carried out to the issue of substance and process philosophy, which was introduced at the beginning of the paper, it must be noticed that the development of Peirce’s logical analysis of proposition offers a hypothesis to understand why he dismisses both ‘being’ and ‘substance’ from his categorical discourse. Apart from the lack of ‘process’ as a piece of philosophical jargon in Peirce’s writings, it can be said that his logical inquiry leads to a radical revision of the metaphysics of substance. If traditional metaphysics is overall based on the category of ‘substance’, by getting rid of it Peirce does not intend to dismiss metaphysics, but rather to rebuild it upon a more radical foundation, first and foremost of a logical kind. The undiscussed pillar of this new metaphysical building is the predicate (understood as ‘rhema’). In more detail, Peirce’s mature analysis of the proposition, which revolves around its verbal knot, provides a new, relational, understanding of grammars and logic, which paves the way for a metaphysics of action and relations – since no unchanged being can be admitted in such a framework –, typical of process philosophies. Then, by noticing that if we really are to find ‘substances’ somewhere we should rather look for feelings, Peirce suggests a process philosophy of feeling.²⁸ This last point calls for further investigation, of a metaphysical kind. The present paper opens the way for it, by shedding light on the logical grounds of such a metaphysical enterprise.

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²⁸ According to his categorical perspective, Firstness is feeling, and Secondness and Thirdness, although cannot be reduced to Firstness, cannot even prescind from the latter (cf. Section 2).

Abbreviations of Charles S. Peirce works

- CP followed by volume and paragraph number is to *The Collected Papers of Charles S. Peirce*, 8 vols., C. Hartshorne, P. Weiss and A. W. Burks (eds.), Harvard University Press, 1931–1935, 1958.
- EP2 is to C.S. Peirce, *The Essential Peirce*, vol. 2, the Peirce Edition Project (ed.), Indiana University Press, 1998.
- R followed by the number of manuscript, and page number (by CSP # when the reference is to Peirce’s own pagination, or by ISP # to the numbers stamped in 1974 on the copy of the microfilm edition) is to *The Charles S. Peirce Papers*, Houghton Library, Harvard University. Identified by number according to Richard Robin’s *Annotated Catalogue of the Papers of Charles S. Peirce*, University of Massachusetts Press, 1967. RL refers to Peirce’s letters, listed as in the correspondence section of Robin’s Catalogue.
- RLT is to C.S. Peirce, *Reasoning and the Logic of Things: The Cambridge Conferences Lectures of 1898*, K.L. Ketner (ed.), Harvard University Press, 1992.
- SS followed by page number is to *Semiotics and Significs: Correspondence between Charles S. Peirce and Lady Victoria Welby*, C.S. Hardwick (ed.), Indiana University Press, 1977.
- W followed by volume and page number is to *Writings of Charles S. Peirce: A Chronological Edition*. 7 vols., E. Moore, C.J.W. Kloesel, et al. (eds.), Indiana University Press, 1982–present.
- 1896 “The regenerated logic”, *The Monist* 7 (1): 19–40.
- 1897 “The logic of relatives”, *The Monist* 7 (2): 161–217.
- 2020 *Selected Writings on Semiotics, 1894–1912*, F. Bellucci (ed.), De Gruyter Mouton. DOI: [10.1515/9783110607390](https://doi.org/10.1515/9783110607390)

References

- [1] Atkin, A., “Peirce on the index and indexical reference”, *Transactions of the Charles S. Peirce Society* 41, 1 (2005): 161–188. <https://www.jstor.org/stable/40358956>
- [2] Atkins, R.K., *Charles S. Peirce’s Phenomenology: Analysis and Consciousness*, Oxford University Press, 2018.
- [3] Atkins, R.K., “Peirce on facts, propositions, and the index”, *Semiotica* 228 (2019): 17–28. DOI: [10.1515/sem-2018-0082](https://doi.org/10.1515/sem-2018-0082)

- [4] Bellucci, F., “Peirce and the unity of the proposition”, *Transactions of the Charles S. Peirce Society* 50, 2 (2014): 201–219. <https://www.muse.jhu.edu/article/562364>
- [5] Bellucci, F., “‘Logic, considered as semeiotic’: On Peirce’s philosophy of logic”, *Transactions of the Charles S. Peirce Society* 50, 4 (2014): 523–547. <https://www.jstor.org/stable/10.2979/trancharpeirsoc.50.4.523>
- [6] Bellucci, F. (ed.), “Peirce’s theory of the proposition”, special issue of *Blityri*, IX, 2 (2020). DOI: [10.4454/blityri.v9i2](https://doi.org/10.4454/blityri.v9i2)
- [7] Brioschi, M. R., *Creativity Between Experience and Cosmos: C. S. Peirce and A. N. Whitehead on Novelty*, Karl Alber Verlag, 2020.
- [8] Brioschi, M. R., “For a new logic of the proposition: Peirce and the concept of ‘rhema’”, *Blityri* IX, 2 (2020): 23–45. DOI: [10.4454/blityri.v9i2.260](https://doi.org/10.4454/blityri.v9i2.260)
- [9] Browning, D. (ed.), *Philosophers of Process*, Random House, 1965.
- [10] Burch, R. W., *A Peircean Reduction Thesis: The Foundations of Topological Logic*, Texas Tech University Press, 1991.
- [11] Buzzelli, D., “The argument of Peirce’s ‘new list of categories’”, *Transactions of the Charles S. Peirce Society* 8, 2 (1972): 63–89. <https://www.jstor.org/stable/40320362>
- [12] Chauviré, C., “Logique et grammaire pure. Propositions, sujets et prédicats chez Peirce”, *Histoire Épistémologique Langage* 16, 1 (1994): 137–175. DOI: [10.3406/hel.1994.2389](https://doi.org/10.3406/hel.1994.2389)
- [13] Chauviré, C., “Indexicalité et assertion chez Peirce”, *Revista Colombiana de Filosofía de La Ciencia* X, 20–21 (2010): 87–101. <https://www.redalyc.org/articulo.oa?id=41418343003>
- [14] Colapietro, V. M., *Peirce’s Approach to the Self*, State University of New York Press, 1989.
- [15] Colapietro, V. M., “A tentative formulation of an ontological category”, *Revista Portuguesa de Filosofia* 53, 4 (1997): 515–527.
- [16] De Tienne, A., *L’analytique de la représentation chez Peirce: La genèse de la théorie des Catégories*, Bruxelles: Faculté universitaires Saint-Louis, 1996.
- [17] Debrock, G. (ed.), *Process Pragmatism: Essays on a Quiet Philosophical Revolution*, Brill Rodopi, 2003.
- [18] Dewey, J., *Experience and Nature*, George Allen & Unwin, 1929.
- [19] Dewey, J., *Logic: the Theory of Inquiry*, Henry Holt and Company, 1938.

- [20] Esposito, J., "Synechism: the keystone of Peirce's metaphysics", in M. Bergman and J. Queiroz (eds.), *The Commens Encyclopedia: The Digital Encyclopedia of Peirce Studies*. New Edition, 2005. <http://www.commens.org/encyclopedia/article/esposito-joseph-synechism-keystone-peirce%E2%80%99s-metaphysics>
- [21] Fabbrichesi, R., "The relevance of the concept of relation in Peirce", pages 95–102 in G. Debrock and M. Hulswit (eds.), *Living Doubt. Essays Concerning the Epistemology of Charles Sanders Peirce*, Kluwer Academic Publishers, 1994.
- [22] Fadda, E., "Peirce e le lingue", pages 127–36 in M. A. Bonfantini, R. Fabbrichesi and S. Zingale (eds.), *Su Peirce*, Bompiani, 2015.
- [23] Ferriani, M., "Peirce's analysis of the proposition: Grammatical and logical aspects", pages 149–172 in D. Buzzetti and M. Ferriani (eds.), *Speculative Grammar, Universal Grammar and Philosophical Analysis of Language*, Benjamins, 1987.
- [24] Fisch, M. H., *Peirce, Semeiotic and Pragmatism*, Indiana University Press, 1986.
- [25] Fisch, M. H., *Classic American Philosophers: Peirce, James, Royce, Santayana, Dewey and Whitehead*, Fordham University Press, 1996 [1951].
- [26] Fuhrman, G., "Peirce's retrospectives on his phenomenological quest", *Transactions of the Charles S. Peirce Society* 49, 4 (2013): 490–508. DOI: [10.2979/trancharpeirsoc.49.4.490](https://doi.org/10.2979/trancharpeirsoc.49.4.490)
- [27] Gartenberg, Z. M., "Intelligibility and subjectivity in Peirce: A reading of his 'new list of categories'", *Journal of the History of Philosophy* 50, 4 (2012): 581–610. DOI: [10.1353/hph.2012.0071](https://doi.org/10.1353/hph.2012.0071)
- [28] Gava, G., "Peirce's 'prescision' as a transcendental method", *International Journal of Philosophical Studies* 19, 2 (2011): 231–253. DOI: [10.1080/09672559.2011.561614](https://doi.org/10.1080/09672559.2011.561614)
- [29] Haack, S., "Not cynicism, but synechism", *Transactions of the Charles S. Peirce Society* 41, 2 (2005): 240–253.
- [30] Hartshorne, C., *Creativity in American Philosophy*, State University of New York Press, 1984.
- [31] Hausman, C. R., *Charles S. Peirce's Evolutionary Philosophy*, Cambridge University Press, 1993.
- [32] Hilpinen, R., "On Peirce's philosophical logic: Propositions and their objects", *Transactions of the Charles S. Peirce Society* 28, 3 (1992): 467–488. <https://www.jstor.org/stable/40320371>

- [33] James, W., *The Meaning of Truth*, Longman, Green & co, 1911.
- [34] Ketner, K. L., and H. Putnam, “Introduction”, pages 1–54 in K. L. Ketner (ed.), *Reasoning and the Logic of Things – Charles Sanders Peirce*, Harvard University Press, 1992.
- [35] Lane, R., *Peirce on Realism and Idealism*, Cambridge University Press, 2018.
- [36] Locke, G., “Peirce’s metaphysics: evolution, synechism, and the mathematical conception of the continuum”, *Transactions of the Charles S. Peirce Society* 36, 1 (2000): 133–147.
- [37] Maddalena, G., “Abduction and metaphysical realism”, *Semiotica* 153: 243–259. DOI: [10.1515/semi.2005.2005.153-1-4.243](https://doi.org/10.1515/semi.2005.2005.153-1-4.243)
- [38] Martin, R. M., *Peirce’s Logic of Relations and Other Studies*, De Gruyter Mouton, 1980.
- [39] Mead, G. H., *Mind, Self and Society*, C. W. Morris (ed.), University of Chicago Press, 1934.
- [40] Merrill, D. D., “De Morgan, Peirce and the logic of relations”, *Transactions of the Charles S. Peirce Society* 14, 4: 247–84. <https://www.jstor.org/stable/40319851>
- [41] Michael, E., “Peirce’s early study of the logic of relations, 1865–1867”, *Transactions of the Charles S. Peirce Society* 10, 2 (1974): 63–75. <https://www.jstor.org/stable/40319705>
- [42] Murphey, M., *The Development of Peirce’s Philosophy*, Harvard University Press, 1961.
- [43] Murphey, M., “Peirce, Charles Sanders (1839–1914)”, pages 163–173 in *Encyclopaedia of Philosophy*, 2nd Edition, 1989.
- [44] Nöth, W., “Charles Sanders Peirce, pathfinder in linguistics”, *Interdisciplinary Journal for Germanic Linguistic and Semiotic Analysis* 7, 1 (2002): 1–14.
- [45] Paolucci, C., “Logic of relatives and semiotics in Peirce. From the ‘subject-predicate’ inferential structure to the synechistic topology of interpretation”, pages 36–58 in V. Gvoždiak and M. Švantner (eds.), *How to Make Our Signs Clear*, Boston, Brill, 2018. DOI: [10.1163/9789004347786_005](https://doi.org/10.1163/9789004347786_005)
- [46] Pape, H., “Peirce’s Process Ontology of Relational Order”, in T. Thellefsen and B. Sørensen (eds.), *Charles Sanders Peirce in His Own Words: 100 Years of Semiotics, Communication and Cognition*, 239–244, De Gruyter Mouton, 2014.

- [47] Potter, V., "Peirce on 'substance' and 'foundations'", *The Monist* 75, 4 (1992): 492–503. DOI: [10.5840/monist199275429](https://doi.org/10.5840/monist199275429)
- [48] Ransdell, J., "Peirce est-il un phénoménologue?", *Études Phénoménologiques* 9–10 (1989): 51–75.
- [49] Reynolds, A., *Peirce's Scientific Metaphysics*, Vanderbilt University Press, 2002.
- [50] Rescher, N., *Process Philosophy: A Survey of Basic Issues*, Pittsburgh: University of Pittsburgh Press, 2000.
- [51] Rosensohn, W. L., *The Phenomenology of Charles S. Peirce: From the Doctrine of Categories to Phaneroscopy*, Gruüner Publishing Company, 1974.
- [52] Rosenthal, S. B., *Speculative Pragmatism*, The University of Massachusetts Press, 1986.
- [53] Short, T. L., "Some problems concerning Peirce's conceptions of concepts and propositions", *Transactions of the Charles S. Peirce Society* 20, 1 (1984): 20–37. <https://www.jstor.org/stable/40320030>
- [54] Short, T. L., "Questions concerning certain claims made for the 'new list'", *Transactions of the Charles S. Peirce Society* 49, 3 (2013): 267–298. DOI: [10.2979/trancharpeirsoc.49.3.267](https://doi.org/10.2979/trancharpeirsoc.49.3.267)
- [55] Sorrell, K., "Peirce and a pragmatic reconception of substance", *Transactions of the Charles S. Peirce Society* 37, 2 (2001): 257–295. <https://www.jstor.org/stable/40320842>
- [56] Stjernfelt, F., *Natural Propositions: The Actuality of Peirce's Doctrine of Dicisigns*, Docent Press, 2014.
- [57] Stjernfelt, F., "Co-localization as the syntax of multimodal propositions: An amazing Peircean idea and some implications for the semiotics of truth", pages 419–458 in T. Jappy (ed.), *The Bloomsbury Companion to Contemporary Peircean Semiotics*, Bloomsbury Academic, 2019. DOI: [10.5040/9781350076143.ch-15](https://doi.org/10.5040/9781350076143.ch-15)
- [58] Thibaud, P., "Between saying and doing: Peirce's propositional space", *Transactions of the Charles S. Peirce Society* 33, 2 (1997): 270–327. <https://www.jstor.org/stable/40320664>
- [59] Thompson, M., *The Pragmatic Philosophy of C.S. Peirce*, The University of Chicago Press, 1953.
- [60] Tiercelin, C., "Peirce's semiotic version of the semantic tradition in formal logic", pages 187–213 in N. Cooper, P. Engel and H. W. Wheatshaf (eds.), *New Inquiries into Meaning and Truth*, St. Martin Press, 1991.

- [61] Whately, R., *Elements of Logic*, J. Mawman, 1826.
- [62] Whitehead, A.N., *The Concept of Nature*, Cambridge University Press, 1920.
- [63] Zalamea, F., *Peirce's Logic of Continuity*, Docent Press, 2012.

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