For a New Logic of the Proposition: Peirce and the Concept of "Rhema"

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Abstract: The paper aims to illuminate Peirce's original interpretation of the syntax and logic of propositions, with special reference to his formulation of the 1890s. By gathering the fruits of his studies in the logic of relatives, and his reflections on non-Indo-European languages, in these years the author begins to provide a new, non-Aristotelian view of the proposition, characterized by his semiotic approach. In particular, it will be examined the crucial role of the "rhema" (or "rheme"), which allows a different configuration of propositions, in comparison with the classical tradition of Western Philosophy, unraveling the logical, grammatical, as well as philosophical, implications of its centrality.

Keywords: *Rhema*; Proposition; Subject; Predicate; Copula.

Peirce's theory of propositions has been largely neglected until the end of the 20th century (see especially Short, 1984; Hilpinen, 1992; Houser, 1992; Fabbrichesi, 1992; Chauviré, 1994; Thibaud, 1997). In the last two decades the topic has become the object of a growing interest, reinvigorated by research on Peirce's unpublished manuscripts. On the one hand, this is due to the increased number of studies on Peirce's contribution to speech-act theories (cf. Bellucci, 2019; Boyd-Heney, 2017; Boyd, 2016; Marsili, 2015; Chandler, 2014; Chauviré, 2010), which have shown how Austin's distinction between the locutory, illocutory and perlocutory components of utterances is already adumbrated in Peirce's writings. On the other hand, apart from investigations on language games and semantics (cf. Pietarinen, 2006), Peirce's semiotic interpreta-

tion of propositions opens the way for thinking about propositions beyond strict linguistic boundaries (above all see Stjernfelt, 2015). Following this line of research, the present article aims to examine the crucial role of the concept of "rhema" (or "rheme") in Peirce's analysis of propositions, different from the classical tradition of Western Philosophy. Special attention will be paid to logical, as well as philosophical and grammatical, implications of the adoption of rhemata in Peirce's doctrine of propositions.

1. *Peirce's analysis of propositions in context*

1.1. *Historical framework*

With reference to Peirce's intellectual development, his view of propositions remains in line with Aristotle until the end of the 1860s. For instance, in «On the Natural Classification of Arguments» he plainly states, «Every proposition may, in at least one way, be put into the form, *S* is *P*; the import of which is, that the objects to which *S* or the *total subject* applies have the characteristics attributed to every object to which *P* or the *total predicate* applies» (W2: 26, 1867)[1]. From the «Description of a Notation for the Logic of Relatives» of 1870 – «one of the most important works in the history of modern logic, for it is the first attempt to expand Boole's algebra of logic to include the logic of relations» of De Morgan (Merrill, 1984, in W2: xlii) – onwards, Peirce starts providing a new syntactical model for propositions (cf. Atkins, 2018: 53-56), which reaches its mature expression in the first decade of 1900. Overall, to correctly understand Peirce's conception of propositions in its genesis, it is necessary to connect it with (i) Peirce's advancements in the logic of relatives, (ii) his abandoning algebraic logic for Entitative Graphs and Existential Graphs, and (iii) his conception of logic as semiotics.

(i) With reference to the logic of relatives, Murray Murphey (cf. 1961) was one of the first to note that «the logic of relations forced

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[1]   According to the standard way of citing Peirce's works, I adopt throughout the article abbreviations for primary sources. "W2" refers to vol. 2 of the critical edition of Peirce's *Writings*; for a complete list of abbreviations see the references section at the end of the article.

Peirce to abandon the subject-predicate theory of the proposition that underlies the 'New List', and so required that he overhaul his basic position» (Murphey, 1989: 166). It is indeed by virtue of the discovery of quantifiers made by his student O.H. Mitchell that it became possible for Peirce to conceive «the whole expression of the proposition [as] consist[ing] of two parts, a pure Boolean expression referring to an individual and a Quantifying part saying what individual this is» (W3: 178, 1885)[2]. At the basis of this logical stand lies the concept of *relative*, defined 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, 1897: 163). As the following exposition will show, the rhema corresponds to this definition of *relative*.

(ii) Then, in light of his own development in the logic of relatives, and his progressive departure from Schröder and algebraic logic[3], Peirce was able to propose his Entitative, and later Existential, Graphs – a system of diagrammatical symbolization by which any proposition can be expressed – where rhemata were finally «put into full use» (Pietarinen, 2006: 6), and the line of identity allows the dismissal of the traditional concept of copula.

(iii) The intertwinement of logic and semiotics in Peirce's thought is a multifaceted topic widely debated in the scholarship[4].

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[2]   The synthetic formulation mentioned here is offered by Peirce in «On the Algebra of Logic: A Contribution to the Philosophy of Notation». The progressive shift in the view of propositions can be detected even earlier, for instance in 1883: «Every Proposition has three elements. 1st an indication of the universe to which it relates, 2nd its general terms, 3d the connection of its terms» (W4: 402). Nonetheless, until Peirce's reviews of Schröder's *Vorlesungen Uber Die Algebra Der Logik* in 1896-97, the difference between Peirce's analysis of propositions and the traditional, so-called Aristotelian view, is not plainly stated. For instance, in *The Architecture of Theories*, written in 1890 and published in 1891, Peirce adumbrates the radical change that was affecting his conception, but still with margins of misinterpretation: «A proposition consists of (1) subject, (2) predicate, and (3) copula. The subject is the term which is conceived as existing independently, the predicate is connected with it, the copula is that which brings subject and predicate into connection» (W8: 86).

[3]   Cf. the 4th Lowell Lectures of 1903, where Peirce states: «The perusal of Schröder's book convinced me that the algebra was not what was wanted, and in the *Monist* for *January 1897* I produced a system of graphs which I now term Entitative Graphs. I shortly after abandoned that and took up Existential Graphs» (R 467, 14).

[4]   From Max Fisch's works onwards (Fisch, 1986), the research on logic and semi-

For the present purposes, it is worth noticing that Peirce's semiotic interpretation of propositions is not developed apart from his logical inquiry. In particular, from the 1890s onwards, as a consequence of Peirce's research in the logic of relatives (Fabbrichesi, 1992: 75-112), Peirce's semiotics is rooted in logic. Thus, on the one hand, as Tiercelin has underlined, it is «illusory […] to dissociate formal logic from semiotic» (Tiercelin, 1991: 191), unless one is ready to lose Peirce's own contribution in logic[5]. On the other hand, Peirce's semiotics must be comprehended in its specific, logical import, otherwise Peirce's pragmatism would weaken in its theoretical force. Due to this mutual implication, as Stjernfelt recently stated, Peirce's doctrine of propositions may «reinvigorate the connections between logic and semiotics, giving the former more cognitive relevance and taking the latter away from relativism» (Stjernfelt, 2015: 120).

Accordingly, the present paper tackles Peirce's view of propositions in between the last decade of the 19th century and the first decade of the 20th century, – a transitional phase of Peirce's thought that is characterized by the three above-mentioned factors – when his original theory of propositions reaches maturity.

1.2. *Theoretical framework*

Besides placing Peirce's theory of propositions within the evolution of his thought (cf. § 1.1), it is fundamental to clarify the theoretical framework within which Peirce's theory of propositions is developed in this period. Since «On a New List of Categories» (1867), Peirce adopts, with occasional modifications, a tripartition of logic

otics has largely increased, including (a) discussions on the multiple facets of their entanglement, (b) the understanding of Peirce's thought in its evolution through time, (c) the implications and impact of such a relation on both the logic and semiotic domains. For the historical reconstruction of Peirce's view of logic and semiotics (that is, from logic *within* semiotics to logic *as* semiotics) one of the more recent and detailed study is offered by Bellucci (2017).

[5]   As Tiercelin remarks: «Peirce's semantic trend is part and parcel of his semiotic treatment of logic. His approach is distinctive because it places logic within the broader context of a general theory of meaning, understanding and interpretation, a theory of how signs function which enables him to classify different sorts of sign in a natural way» (Tiercelin, 1991: 187).

that recalls the medieval *trivium* of grammars, dialectic and rhetoric (cf. EP 2: 482, 1908). He states:

All thought being performed by means of signs, Logic may be regarded as the science of the general laws of signs. It has three branches: (l) *Speculative Grammar*, or the general theory of the nature and meanings of signs, whether they be icons, indices, or symbols; (2) *Critic*, which classifies arguments and determines the validity and degree of force of each kind; (3) *Methodeutic*, which studies the methods that ought to be pursued in the investigation, in the exposition, and in the application of truth. (EP 2: 260, 1903)

Furthermore, for Peirce, every department of logic depends on the previous one, so that methodeutic[6], as an inquiry into the methods of arguments, rests upon logical critic, which is devoted to the study and classification of arguments and in its turn is based on speculative grammar, where propositions, along with terms, find their proper field of investigation. As Peirce specifies, speculative grammar treats of «the general conditions of signs being signs (which Duns Scotus called *Grammatica speculativa*)» (R 900, CP 1.444, c. 1896)[7], and can be viewed as an evolution of what Peirce calls in 1869 the «Philosophy of Grammar» (W2: 321), again referring to the work of Duns Scotus, namely Thomas of Erfurt. If overall, from 1903 onwards, speculative grammar is dedicated to classifications of signs, up to that moment it essentially consists in an «analysis of the nature of assertion» (Peirce, 1896: 27), or more broadly in a theory of propositions (cf. Bellucci, 2019; Thibaud, 2005; Hilpinen, 1992)[8]. Before presenting Peirce's theory of propositions in detail, and the central role of the rhema, it is necessary to clarify his approach and the differences from grammatical and linguistic inquiries.

[6]   Peirce also calls it "Speculative Rhetoric", cf. for instance EP 2: 19, 1895.
[7]   Just as Heidegger, among many others, Peirce wrongly attributes Thomas of Erfurt's *De modis significandi sive grammatica speculativa* to Duns Scotus.
[8]   Peirce often insists upon the difference between proposition and judgement (cf. for instance EP 2: 12, 1895), so as to emphasize the unpsychological character of propositional contents. Indeed, as he writes, speculative grammar must be conceived as «unpsychological *Erkenntnislehre*» (R 425 CSP 105, 1902). Nonetheless, until 1903/04 he does not clearly distinguish between propositions and assertions, nor between propositions and statements (cf. Bellucci, 2018: fn 8, 9).

1.3. *Speculative grammar, grammar and linguistics*

In the previous paragraph speculative grammar was introduced as a branch of logic, and accordingly for Peirce it can never assume the methods of empirical research, nor can it assimilate itself to the latter[9]. In remarking the logical and philosophical essence of his inquiry, Peirce repeatedly directs sharp criticism toward grammarians and linguistics. Those comments are of the utmost relevance in order to clarify the nature of Peirce's enterprise, and to properly understand to what extent he also makes use of linguistic inquiries to support his theory (cf. § 4).

On the whole, Peirce's criticisms are due to the fact that, according to the author, many logicians, both in the history of logic and among his contemporaries, usually build logic upon pre-established modes of thought or upon well-established languages. As he states in 1896,

> It has always been the habit of logicians to consider propositions only (or chiefly) after they have been expressed in certain standard, or canonical, forms. To treat them just as they are expressed in this or that language (as Hoppe or some others do) makes of logic a philological, not a philosophical, study. (R 787 CSP 22-3)

A similar criticism is directed toward grammarians, because according to Peirce they tend to conceive as perfect sentences those

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[9]   Before and beneath the relationship of Peirce's speculative grammar with grammar and linguistics as disciplines lies a major issue, which belongs to the history of logic, its general conception, methods and aims. I am referring to the distinction between logic understood either as *lingua universalis* or *calculus ratiocinator* (cf. Van Heijenoort, 1967). From a philosophical perspective, this view is in its turn based on the presupposed conception of reason. As Peirce highlights: «Logic, from λόγος, meaning word and reason, embodies the Greek notion that reasoning cannot be done without language. Reason, from the Latin *ratio*, originally meaning an account, implies that reasoning is an affair of computation, requiring, not words, but some kind of diagram, abacus, or figures. Modern formal logic, especially the logic of relatives, shows the Greek view to be substantially wrong, the Roman view substantially right. Words, though doubtless necessary to developed thought, play but a secondary role in the process; while the diagram, or icon, capable of being manipulated and experimented upon, is all-important. Diagrams have constantly been used in logic, from the time of Aristotle; and no difficult reasoning can be performed without them» (W8: 24, 1890). Far from giving an exhaustive account of the debate in logic and its implications, it is worthwhile noting that, although Peirce is generally conceived, along with Boole and Schröder, as representative of *calculus ratiocinator*, his stand is more complex, going so far as to conceive logic as both calculus and language (cf. Hintikka, 1997: 140-161; Anellis, 2012).

expressed by Indo-European languages, forgetting in this way «that our Indo-European languages bear as small a proportion to all the varieties of human speech as the phanerogams to the totality of forms of plants or the vertebrates to the totality of animals» (R 409 CSP 95, 1893). Accordingly, for Peirce «nothing can be more preposterous than to base that *grammatica speculativa* which forms the first part of logic upon the *usages of language*» (EP 2: 221, 1903, italics mine). Indeed, he never tried to base it on the study of natural languages. Nonetheless, he often appeals to research in linguistics[10], with no pretensions of being a linguist[11], in order to enhance the limits of what he calls «Aryan syntax», and subsequently to underline how logic, and more broadly any theory of reasoning, cannot be grounded in it, but can receive empirical confirmation and support from comparative linguistic analyses[12]. In particular, as it will be explained more in detail in the next paragraphs, Peirce strongly refuses to assume that the traditional compound of subject-predicate is representative of the universal syntax of thought or that it is the most suitable way to describe the minimal structure of propositions.

2. *Peirce's semiotic interpretation of the proposition*

In accordance with Peirce's definition of the sign, the triplet of term, proposition, and argument can be roughly introduced as follows:

[10]   In this regard, Peirce's references vary from Ancient Egyptian, to Arabic, Basque, old Adelaide Australian, Eskimo and Gaelic, besides Latin, Greek and other modern languages. As sources, he often mentions the two volumes of James Byrne's *General Principles of the Structure of Languages*. Cf. also EP 2: 19.

[11]   Cf. EP 2: 285, 1904. However, Peirce's acquaintance with linguistics and natural languages has been often recognized and praised. As Jakobson testifies to by defining Peirce as «a genuine and bold forerunner of structural linguistics» (Jakobson, 1977: 1027; see also Fadda, 2015; Rellstab, 2008; Nöth, 2002).

[12]   In this perspective the harsh criticism raised in *New Elements* should be understood: «Logic, for me, is the study of the essential conditions to which signs must conform in order to function as such. How the constitution of the human mind may compel men to think is not the question; and 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 ought to survey human languages generally and not confine themselves to the small and extremely peculiar group of Aryan speech» (EP 2: 309, c. 1904).

A representamen is either a *rhema*, a *proposition*, or an *argument*. An *argument* is a representamen which separately shows what interpretant it is intended to determine. A *proposition* is a representamen which is not an argument, but which separately indicates what object it is intended to represent. A *rhema* is a simple representation without such separate parts. (EP 2: 204, 1903)[13]

As it is clear, here "proposition" is not construed merely as the linguistic formulation of a judgement, nor as the psychological act of judging, but rather as «that sign of which the judgment is one replica and the lingual expression another» (EP 2: 311, c. 1904; cf. also R 599 CSP 6, c. 1902)[14]. Accordingly, "Dici-signs", as Peirce also calls propositions, are not arguments, for their interpretants remain indeterminate; furthermore, they are differentiated from "terms" because contain the indication of the objects that they intend to represent, while the latter leave the possible objects to which they apply as vague and indefinite.

The analysis of Peirce's representamen introduces in this way the two minimal, essential components of the proposition: the rhema, or term, which corresponds to a simple representation, and the indication of the objects it represents; «the former is intended to create something like a picture in the mind of the interpreter, the latter to point to what he is to think of that picture as being a picture of» (R 284 CSP 43, 1905). Those two parts, semiotically characterized, correspond the former to the "iconic", and the latter to the "indexical", parts which every proposition must include to be such. As the author summarizes:

First, it [proposition/Dicisign] must, in order to be understood, be considered as containing two parts. Of these, the one, which may be called the *Subject*,

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[13] This is one of the various nomeclatures that Peirce employs. We also have "Rhema, Dicisigns, Arguments", "Seme, Pheme, Delome" (cf. Peirce, 1906), and "Sumisigns, Dicisigns, Suadisigns" (EP 2: 275, 1903). These are intended to cover all signs and not only symbols.

[14] Although Peirce's definitions of "proposition" are often inconsistent – for instance, he also defines the proposition as a «product of language» (R 664 CSP 7, 1910), the one reported above can be considered as the most inclusive definition, and indeed it has been called "standard" from Hilpinen onwards (Hilpinen, 1992: 473). According to this interpretation, even the definition provided by Peirce for the *Century Dictionary* must be comprehended in light of the above considerations: «[Proposition]: A representation in thought or language of an act of mind in thinking a quality or general sign, termed a *predicate*, to be applicable to something indicated, and termed a *subject*» (Peirce, 1889-91: 4782).

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. (EP 2: 277, 1903)

These components always need to be connected; neither the Index-Subject nor the Icon-Predicate alone can make a proposition. As Peirce states, «neither a pure icon nor a pure index can assert anything» (EP 2: 307, c. 1904). The icon alone is a «mere dream» (R 409 CSP 95), it can «convey no information, nor does it put the mind into a position to acquire information» (R 142 CSP 3-4, 1899), because it does not include any reference whatsoever to that universe of discourse with which the utterer and the interpreter must be acquainted. And such a double-requirement of index and icon carries relevant implications, which in their turn underline the originality of Peirce's view. To see this more clearly, consider for instance the case of propositions apparently "without subject". Peirce, for example, examines the Latin *fulget* or *pluvit*, and comments: «who cannot see that these words convey no information at all without a reference (which will usually be Indexical, the Index being the common environment of the interlocutors) to the circumstances under which the Firstnesses they signify are asserted to take place?» (EP 2: 281-2, 1903)[15]. Two points must be inferred from that: first, that the subject for Peirce fulfills a logical function that is far beyond the grammatical subject or its linguistic expression; second, that for Peirce to emphasize the iconicity of the predicate does not mean to reduce it to a quality, but especially to accentuate its character of possibility or potentiality[16].

[15]   On the implications of the indexical nature of the "common environment" see Atkins (2019). For the present purposes, it is sufficient to say that when Peirce refers to that common environment he wants to emphasize that we often leave subjects unexpressed because «the circumstances of the enunciation sufficiently show what subject is intended, and words, owing to their usual generality, are not well adapted to designating singulars» (EP 2: 209, 1903).

[16]   As the author emphasizes: «An *Icon* […] is strictly a possibility, involving a possibility, and thus the possibility of its being represented as a possibility is the possibility of the involved possibility» (EP 2: 277, 1903). Furthermore, to emphasize their peculiar characteristics, he compares icon and index to grammatical moods: «If an icon could be interpreted by a sentence, that sentence must be in a "potential mood", that is, it would merely say, "Suppose a figure has three sides", etc. Were an index so interpreted, the mood must be imperative, or exclamatory, as "See there!" or "Look out!"» (EP 2: 16-7, 1895).

With reference to the indexicality of the subject, widely recognized and discussed as a prominent peculiarity of Peirce's theory of propositions (cf. Atkins, 2019; 2016; Chauviré, 2010; Atkin, 2005; Thibaud, 1997), Peirce defines the subject as «that concerning which something is said» (R 408 CSP 119, 1893). However, contrary to what one might think, he firmly opposes his view to the common understanding of the subject as a grammatical component. In this regard, he adduces two reasons:

> first in that they [the grammarians] apply it to a noun and I to the thing which the noun denotes, and secondly in that they restrict the term "Subject" to the Subject Nominative, while I extend it to that which is denoted by the direct object, and to that which is denoted by indirect object, and to everything else with which one must be already acquainted in order to interpret the assertion. (R 615 CSP 35, 1908)

As a consequence, the analysis of the proposition will include as subjects elements that we would never consider as such before taking into consideration Peirce's semiotic approach. First of all, as Peirce declares in the citation above, subjects are not only limited to those expressed in the "nominative case", but also include the elements denoted by direct and indirect objects. For instance, to recall some recurrent examples in Peirce's writings, in the proposition "Cain kills Abel", the subjects are both Abel and Cain, or in the proposition "A sells B to C for the price D", the subjects are four: $A,$ B, C, D, viewed as a set of indices. As Peirce explains: «The symbol "___ sells ____ to ____ for the price ____" refers to a mental icon, or idea, of the act of sale, and declares that this image represents the set A, B, C, D, considered as attached to that icon, A as seller, C as buyer, B as object sold, and D as price» (EP 2: 20-1, 1895)[17].

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[17]   With reference to the number of subjects involved in the analysis of the proposition, it is worthwhile to note that for Peirce the same proposition can be analyzed in different ways. For instance, «a triadic predicate involves three dyadic predicates and three monadic predicates; while a dyadic predicate involves two monadic predicates. Thus, "*____ gives †____ to ‡ ____", involves the possibility of "X gives †____ to Z", of "*____ gives Y to ‡ ____", and of "X gives †____ to ‡ ____", which last is precisely equivalent to "‡ ____ gift-wise from X receives †____"» (EP 2: 427, 1907; cf. also EP 2: 170-1, 1903; Peirce, 1897: 164; R 492 CSP 33, c. 1903). The various possibilities of analysis are then complicated by Peirce's introduction of rhemata of first and second intention. For a detailed study on the topic, see Bellucci's article on analysis and decomposition in Peirce (2018). Furthermore, Peirce's distance from the grammatical subject is also supported

From these examples it is also possible to grasp what Peirce means when he says that the subject is «everything that can be removed from the predicate» (SS: 71), and how subjects are intended to «merely fulfill the function of indices and involve no general conception whatsoever» (EP 2: 220, 1903). Accordingly, subjects are viewed by Peirce as those "haecceities" that constitute the references attached to the predicate as the purely ideal part of the proposition (cf. Peirce, 1896: 30-1). Due to this character of *haecceitas*, for Peirce subjects are proper names, personal and demonstrative pronouns, and equally gestures, looks and tones, and even percepts (cf. EP 2: 286, 1903). Indeed, pronouns are considered as prior to nouns:

> The pronoun, which may be defined as a part of speech intended to fulfill the function of an index, is never intelligible taken by itself apart from the circumstances of its utterance; and the noun, which may be defined as a part of speech put in place of a pronoun, is always liable to be equivocal. (EP 2: 209, 1903)

In fact, the unintelligibility of pronouns «apart from the circumstances of the utterance» of the proposition is what emphasizes, according to Peirce, that they are «quite *anti-general*, referring to a *hic et nunc* (…)», so that they become «*stimulants to looking*, like the bicyclist's bell» (R 441 CSP 12, 1898). Similarly, Peirce remarks that the perceptual judgment «"that chair is yellow" would be more accurately represented thus: "☞ is yellow", a pointing index-finger taking the place of the subject» (CP 7.635, 1903). More broadly, even gestures, percepts, looks or tones (cf. e.g. EP 2: 168, 1903; R 787 CSP 22, c. 1896) can be considered as subjects, inasmuch as they «are virtually almost directions how to proceed to gain acquaintance with what is referred to» (R 596 CSP 36, c. 1902).

On the whole, to reconnect to the distinction between arguments, propositions, and rhemata from which I started, subjects as indices are what Peirce calls the «vital spark of every proposition» (EP 2: 310, c.1904), for they allow to «separately indicates what object it is intended to represent» (EP 2: 204, 1903). Moreover, it is apparent that the role of subject is as vital as it is subordinate to the predicate, or rhema, because the subject can fulfill its function only

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by the fact that many languages, like Eskimo, Gaelic, Arabic, old Egyptian, old Adelaide Australian, do not express the subject in nominative cases (cf. EP 2: 12-3, 1895; R 280 CSP 33, 1905; R 200 CSP 107-9, 1908).

when attached to it. Also, the number of required subjects is called for by the rhema (see the examples of propositions reported above). Without subjects there is no indication of the intended object to represent, but without the iconic component of the proposition there would be no indication of the required subjects (cf. Peirce, 1897: 163). For this reason, the concept of *rhema* can be viewed as the most basic, structural element of the proposition.

3. *The concept of "rhema" as "nucleus" of the proposition*

To understand to what extent the icon not only expresses a mental image, but needs to be comprehended as a potential proposition, I will now explore the quasi-synonyms of "relative", "term", "predicate", "icon" by reconstructing the evolution of the concept of rhema, and then by drawing out its implications on Peirce's conception of propositions. Indeed, in the previous paragraph the concept of rhema has been already introduced, but the breadth of its meanings requires some clarification.

3.1. *From the "nominal relative" to the "rhema"*

In order to detect in Peirce's writings the origin of the concept, and to try to indicate the reasons why Peirce chooses this piece of jargon, it is first and foremost necessary to connect it to the logic of relatives. From the 1870s onwards, Peirce assumes the concept of "relative term", that is, of «a term whose definition describes what sort of a system of objects that is whose first member (which is termed the *relate*) is denoted by the term; and names for the other members of the system (which are termed the *correlates*) are usually appended to limit the denotation still further» (W4: 195, 1880). For instance, relative terms are "lover of____", "benefactor of____", "servant of____" (cf. e.g. W4: 453, 1883, for dual relatives), or "giver of____ to____", (cf. e.g. W6: 175, 1887-88, for triple relatives)[18]. For a more extensive account, Peirce adds the follow-

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[18]   According to Peirce, even ordinary non-relative terms can be viewed as relative. For instance, "man" corresponds to "man that is", as in the expression "a man that is rich" (cf. W3: 115, 1873; Peirce, 1897: 167). Cf. also § 3.2.

ing example: «take "buyer of____ for_____ from____"; we may append to this three correlates, thus, "buyer of every horse of a certain description in the market for a good price from its owner"» (W4: 195). As it is apparent, the example of rhema given in the previous section (dated 1895) follows exactly the scheme displayed here in all but one element. When Peirce speaks of a *relative term* during the 1870s and 1880s he adopts chiefly the nominal form, while from the 90s, approximately from the so-called *Grand Logic* onwards, he broadens the so-called "nominal relative" (Peirce, 1897: 168) to a – so to speak – verbal relative, that is, to a verbal form. Thus, instead of "buyer of____ for_____ from____", we find: "___ sells ____ to ____ for the price ____". This clear difference constitutes a hint of great value in limiting, and therefore in understanding, the meaning of the rhema. Indeed, Peirce adopts the term "rhema" as a calque from the Greek ῥῆμα[19], in its significance of "verb", as classically opposed to ὄνομᾰ (meaning "noun"). In this sense, by choosing "rhema" Peirce emphasizes that what he calls «the logical atom» (W2: 389, 1870) of a proposition is no longer a subject of which we then predicate qualities, but rather its *verbal knot*. The analogy he often employs for describing the concept of rhema is indeed that of a chemical atom: «A *rhema* is somewhat closely analogous to a chemical atom or radicle with unsaturated bonds. A non-relative rhema is like a univalent radicle; it has but one unsaturated bond. A relative rhema is like a multivalent radicle» (CP 3.421, 1892).

The analogy between chemistry and logic is again assumed in the article «The Logic of Relatives», published in *The Monist* in 1897. Here Peirce extends the comparison with the atom's structure also to the proposition as a whole, so that not only is the rhema equated to an atom with a definite valency, and therefore with a definite

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[19] It is defined in the edition of Liddell and Scott's *Greek-English Lexicon* most likely used by Peirce as: «*ῥῆμα* (…) II. In Gramm., *a verb*, opp. to ὄνομα (a noun), *ῥήματα και ὀνόματα* Plat. Soph. 262 A sq., Crat 425 A, al., Zeno ap. Diog L. 7.58, Arist. Poët. 20, 9: – from the fact that a Verb usually forms *the predicate* (Arist. Interpr. 3, I), *ῥῆμα* seems sometimes to be applied to an Adj. *when used as a predicate*, Ib. I, 4., 10 16». Accordingly, Peirce seems quite unaware of the debate on the translation of ῥῆμα as "verb" or "predicate" (cf. Graffi, 1986), meaning by it mainly "verb" (cf. EP 2: 285, 1903), and only in the second place, by extension, "predicate", since: "a Verb usually forms *the predicate*". However, with regard not to the meaning of the word, but to the usage made by Peirce of *rhema* as philosophical jargon, it fulfills the logical function of *predicate*. Cf. § 3.2.

number of unsaturated bonds, but the diagrammatical notation of chemical compounds is explicitly recalled by the author in presenting the proposition according to his Entitative Graphs (which later will evolve into the more famous Existential Graphs)[20]. The author states: the proposition "John gives John to John" corresponds in its constitution, as Fig. 1 and 2 show, precisely to ammonia.
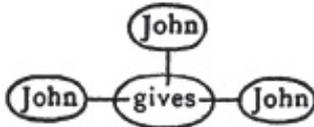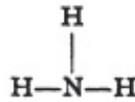
(Peirce, 1897: 169)

As the graphical rendering emphasizes even more, at the center of the proposition we find the verb, which when filled with proper names (cf. section § 2) makes a proposition. The emphasis put on the rhema as verbal unit becomes even stronger when we consider Peirce's writings on Existential Graphs, where the same definition of rhema is often associated to the "verb". For instance, Peirce plainly states that: «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. 1896; cf. also R 15 CSP 22-3, c. 1896). Following the analogy with chemical elements endowed with a definite valency, Peirce specifies that «the *valency* of a rheme [a variant spelling for "rhema"] is the number of proper names that have to be inserted in it to make a complete proposition» (R 284 CSP 36, c. 1905)[21]. Thus, by adopting the concept of rhema instead of that of

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[20]   On the influence of chemistry on Peirce's philosophical thought, with special reference to the periodic table, cf. Ambrosio - Campbel (2017).

[21]   For Peirce rhemata (or verbs) are thereby divided on the basis of their valency. As he explains in the third Cambridge lecture in 1898: «The places at which lines of identity can be attached to the verb I call its *blank subjects*. I distinguish verbs according to the numbers of their subject blanks, as *medads*, *monads*, *dyads*, *triads*, etc. A *medad*, or impersonal verb, is a complete assertion, like "It rains", "you are a good girl". A *monad*, or neutral verb, needs only one subject to make it a complete assertion, as "– obeys mamma" (…). A *dyad*, or simple active verb, needs just two subjects to complete the assertion as "– obeys –" (…). A *triad*, needs just three subjects as "– gives ⌐ to –" (…). Every polyad higher than a triad can be analyzed into triads, though not every triad can be analyzed

nominal relative, Peirce puts new emphasis on the prominent role of the verb in propositions, and in this way he makes of the rhema the vital node and the minimal unit of any proposition[22].

3.2. Term and "rhema"

Only in light of the previous distinction between "nominal relative" and "verbal relative" can the slight difference between term and rhema – which Peirce often points to – be properly understood. In § 2 the concept of term has already been introduced and compared with that of proposition and of argument. In line with that semiotic interpretation, every term must be construed, according to Peirce, as «a symbol with both interpretant and object left blank», as the author writes in the definition for Baldwin's *Dictionary* (R 1147, c. 1901-2), which exactly corresponds to the definition of rhema.

Indeed, as Peirce often emphasizes: «whenever I speak of a *term* I always mean a rhema», but «the former cannot form the predicate of a proposition unless a verb is inserted, while a rhema contains a verb within itself» (EP 2: 220, 1903). From this quasi-identification it is possible to find, in 1896 as elsewhere, Peirce's description of the rhema as coincident with that of the term. He wrote in fact that a term «is for me nothing but a proposition with its indices or subjects left blank, or indefinite» (Peirce, 1896: 32). Thus, whether we call it "rhema" or "term", for Peirce it is fundamental that it performs the function of the predicate. Accordingly, the author affirms that (his view of) term is on a par with rhema, although the usual understanding of term diverges from such an interpretation. In other words, Peirce recognizes and attributes to terms a "verbal essence" which traditional terms do not have. The author exemplifies his stance as follows:

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into dyads» (R 439, RLT: 154, 1898). In this regard, Peirce also specifies: «It is obvious, therefore, that no indecomposable element of thought can be a proposition. Nor it can be a rheme, since a rheme is nothing but an indefinite proposition. The indecomposable element of thought may essentially refer to other elements and so have a structure analogous to the valency of a rheme, but it cannot be more than an analogy» (R 284 CSP 43, 1905).

[22]   It is worthwhile to note that in the 20th century Lucien Tesnière borrows from Peirce's logic of relatives the metaphor of the chemical atom, at the basis of his valency grammar (Paolucci, 2006; Przepiórkowski, 2018). On the current relevance of Peirce's logic of relatives, cf. Tiercelin (2016).

Thus, from the proposition "Every man is mortal", we erase "Every man", which is shown to be denotative of an object by the circumstance that if it be replaced by an indexical symbol, such as "That" or "Socrates", the symbol is reconverted into a proposition, we get the rhema or term "____is mortal". Most logicians will say that this is not a term. The term, they will say, is "mortal", while I have left the copula "is" standing with it. (EP 2: 308, c. 1904)[23]

To sum up, according to Peirce, the difference between these two conceptions of term (one "with verb" and the other "without verb"), lies in the «explicit recognition» of «its own fragmentary nature» (EP 2: 310). Indeed, the author continues, the difference between "____ is a man" and "man" is that «The rhema "____ is a man" is a fragmentary sign. But "man" is never used alone, and would have no meaning by itself» (EP 2: 310). This fragmentary nature of terms, or "indefiniteness", awaiting indices in order to make a proposition, is accordingly made explicit by rhemata, while remaining implicit in "ordinary" terms. For instance, Peirce states in 1906:

The word *donation* is indefinite as to who makes the gift, what he gives, and to whom he gives it. But it calls no attention, itself, to this indefiniteness. The word *gives* refers to the same sort of fact, but its meaning is such that that meaning is felt to be incomplete unless those items are, at least formally, specified; as they in: "Somebody gives something to some person (real or artificial)". (Peirce, 1906: 511)

From the consideration of Peirce's notion of rhema as predicate it emerges a new syntactical model for the proposition, which is far from our traditional habits of thought and from both Western logic and linguistics.

4. *Towards a Regenerated Syntax*

The alternative view to what Peirce calls "Aryan syntax" (EP 2: 20, 1895) stems from his development of the logic of relatives, as well as from his new diagrammatical notation of Existential Graphs, and his semiotic interpretation of the proposition delineated above

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[23] As it has been frequently observed, from Hilpinen onwards (cf. Hilpinen, 1992: 470), this "rhematic" understanding of terms recalls Frege's idea of "unsaturated function", although they have been developed independently from each other. For the difference between Peirce's and Frege's notion of "saturation" see Bellucci (2014: 208-9).

(cf. also Paolucci, 2018). It is in light of his logic and semiotics that he raises strong objections to the traditional analysis of the proposition, which is also supported by historical and comparative studies on natural languages. The first criticism, already hinted at in the difference between the traditional term and the rhema, is directed to common nouns; the second criticism is directed to the substantive verb "to be" as the third fundamental part of the proposition, along with subject and predicate, namely the copula.

Peirce's criticism of common nouns concerns the fact that they are considered as an "independent part of speech" (EP 2: 309, c. 1904), while according to him they are only an "unnecessary part", wrongly erected by logicians into "a logical form", on the presumption that our specific modes of thought, and accordingly our "Indo-European" languages, correspond to *the* universal and most correct way of thinking (cf. R 787 CSP 35-6, c. 1896). The reason for the dismissal of "common nouns" is plainly stated in the following passage published in 1897:

> Our European languages are peculiar in their marked differentiation of common nouns from verbs. Proper nouns must exist in all languages; and so must such "pronouns", or indicative words, as this, that, something, anything. But it is probably true that in the great majority of the tongues of men, distinctive common nouns either do not exist or are exceptional formations. In their meaning as they stand in sentences, and in many comparatively widely-studied languages, common nouns are akin to participles, as being mere inflexions of verbs. If a language has a verb meaning "is a man", a noun "man" becomes a superfluity. (Peirce, 1897: 163)

Therefore, on the one hand, Peirce criticizes the methods adopted by logicians, warning them of the preposterous claim to assume a certain, given way of thinking as a universal law of the human mind, and more broadly of every intelligent being (cf. EP 2: 18, 1895)[24], and, on the other, emphasizes that even in Indo-

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[24] Peirce's criticism against this tendency among logicians and grammarians is often very harsh: «Our grammars teach that a perfect sentence consists of a subject and predicate. There is some truth in that; yet it rather forces the facts to bring all sentences even in the European languages to that form. But Indo-European languages are to all languages what phanerogams are to plants as a whole or vertebrates to animals as a whole, a smallish part though the highest type. Grammarians are children of Procrustes and will make our grammar fit all languages, against the protests of those to whom they are vernacular» (EP 2: 12, 1895).

European languages common nouns are not an essential require-
ment. As support for this thesis, he recalls that «even in Indo-Euro-
pean speech the linguists tell us that the roots are all verbs» (R 409
CSP 95), or that «in the Shemitic languages, which are remarkably
similar to the Aryan, common nouns are treated as verbal forms and
are quite separated from proper names» (EP 2: 309, c. 1904). So,
if «common nouns still retain some verbal life» (R 441, RLT: 128,
1898), and this permits a «great unity in logic» and «harmony with
the theory of signs» (cf. Peirce, 1896: 32), why be so preposterous to
still maintain this «late development chiefly restricted to that small
and extremely peculiar family of languages which happens to be the
most familiar to us» (EP 2: 221)? More broadly, why presume that
the more familiar way of thinking should be the best?

The misleading assumption of common nouns as fundamental in
developing a theory of the proposition, according to Peirce, has also
enforced the quite recent invention of "copula" as the third basic
component of propositions:

> 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. (EP 2: 285, 1903)

In this regard, Peirce remarks that the assumption of the copula,
understood as the "substantive verb" "to be"[25], can be traced back
to the times of Abelard, when medieval Latin did not permit the
omission of the verb *est*. Accordingly, it must not be seen as «a con-
stituent part of logical proposition» (EP 2: 309, c. 1904), but merely
as «the accidental form that Syntax may take» (cf. EP 2: 282, 1903).
This "superfluity", grounded upon the bias of "Aryan languages",

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[25]   Regarding the "substantive verb", it is worthwhile to note the significant remark
by Peirce: «We can hardly suppose that this writer [Priscian], who lived in Constantino-
ple 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.).

is testified to, according to the author, by the studies of historical natural languages. For instance, he points out that instead of the verb to be, in Ancient Egyptian there is the copula "*pu*", which originally stands for a demonstrative or relative pronoun like "which", and connects hieroglyphic ideograms, the latter corresponding, in their turn, to rhemata. For instance, Peirce states that by adding the proper name Aahmes to 𓀀 (meaning "__is a soldier"), 𓅿 ("which"), and 𓂝 ("__is overthrown") results the proposition: "Aahmes is a soldier *which* is overthrown", where the pronoun fulfills the function of indicating that "__is a soldier" and "__is overthrown" represent the same object (cf. R 408 CSP 139, 1893). In like manner, Peirce remarks that also other languages have only «a word, a syllable, or a letter» (EP 2: 309) to show it, and that even Indo-European languages do not all have this requirement, as for instance Greek[26]. As stated in § 2, it is worthwhile to note that Peirce does not deny that a connection is needed[27]. What he strongly opposes is to assume the substantive verb "to be" as the copula[28], and to claim that this feature of syntax represents a general requirement of thinking.

At the beginning of the present paper, it was claimed that Peirce's semiotic interpretation of propositions enlarges our common, linguistic understanding of them. Nonetheless, the analysis of the rhema and of its logical function reveals that Peirce, in order to gain a new understanding of propositions, not only demands to «turn attention to signs» (EP 2: 13, 1895). It is by virtue of his renewed consideration of signs that he can first criticize the traditional logic and syntax of propositions, by unraveling their history and emphasizing their tacit and questionable assumptions, and then provide a new syntax. Indeed, from the central function accorded to the rhema in the proposition, namely as its verbal nucleus (and not only its ideal

[26] Cf.: «It may be said that "Socrates wise" does not make a sentence in the language at present used in logic, although in Greek it would», and immediately after he points out: «But it is important not to forget that no more do "Socrates" and "is wise" make a proposition unless there is something to indicate that they are to be taken as signs of the same object» (EP 2: 310, c. 1904).

[27] He firmly states that «it is *the connection* of an indicative word to a symbolic word which makes an assertion» (R 409 CSP 94, 1893, *italics mine*).

[28] Even Aristotle, according to Peirce, does not regard the substantive verb "is" important in the constitution of sentences. Cf. EP 2: 308-9, c. 1904.

and iconic part), Peirce paves the way (even before the mature evolution of Peirce's speculative grammar) for a pragmatic, "non-Aryan" syntax that comprehends logic, semiotics and language at once. For, as Peirce states, «What is Logic? (…) It is quite indifferent whether it be regarded as having to do with thought or with language, the wrapping of thought, since thought, like an onion, is composed of nothing but wrappings» (EP 2: 460, 1911).

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