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Rhemata

Francesco Bellucci

Department of the Arts, University of Bologna, Bologna, Italy

Correspondence
Francesco Bellucci, Department of the Arts, University of Bologna, Via Azzo Gardino 23, Bologna 40122, Italy.
Email: francesco.bellucci4@unibo.it

Abstract

The article offers an analysis of Peirce's notion of "rhema." It examines and explains Peirce's definition of the rhema; it identifies and solves two problems that are direct consequences of the definition. The first problem is that proper names, while classified as rhemata, do not satisfy Peirce's definition of the rhema. The second problem is that Peirce also calls "rhemata" the results of propositional analysis that however do not satisfy his own definition of the rhema. Peirce himself solves the first problem by generalizing the notion of rhema into that of "seme." I argue that we can solve the second problem if, following M. Dummett, we distinguish propositional analysis from propositional decomposition.

1 | INTRODUCTION

The term "rhema" first occurs in Peirce's writings in the second paper of the *Open Court* series of 1892. The series was titled "The Critic of Arguments," and the second paper was about the "Logic of Relatives." In that paper, the rhema is defined as follows:

> if in any written statement we put dashes in place of two or more demonstratives or pro-demonstratives, the professedly incomplete representation resulting may be termed a *relative rhema*. It differs from a relative term only in retaining the "copula," or signal of assertion. If only one demonstrative or prodemonstrative is erased, the result is a *non-relative rhema*. (CP 3.420)[1]

The word "rhema" comes from the Greek *rhēma*, which is the word used by Aristotle to indicate the "verb" of a sentence (*De Int* 17a9).[2] Rhemata, we learn, are obtained by "erasing" certain things from a "statement"; they may be relative or nonrelative depending on the number of things that are erased from the statement; the things that are erased are "demonstratives" or

[1]Abbreviations for Peirce's works are as follows: Peirce (1932–1958) = CP followed by volume and paragraph number; Peirce (1998) = EP 2 followed by page number; Robin (1967) = R/RL, followed by manuscript and, when available, page number; Peirce (1982–2009) = W followed by volume and page number; Peirce (2019–2022) = LF followed by volume and page number; Peirce (2020) = SW followed by page number.

[2]Or its "predicate." Graffi (2020) has argued that a translation as "verb" of the occurrences of *rhēma* in *De Interpretatione* is inadequate, and that a rendering of it as "predicate" is more adequate. "Verb" is yet preferable in the context of the *Poetics*.

"prodemonstratives." While the definition is not completely transparent—in order to know what a rhema is one should first know what "statement," "demonstratives," "prodemonstratives," and "erasing" mean in this context—yet it is roughly the definition that, starting with "The Critic of Arguments," Peirce almost invariably gives of this notion. For example, in "Logical Tracts. No. 2" of 1903 (R 492) he gives the following definition of the rhema:

> A blank form of proposition produced by such erasures as can be filled, each with a proper name, to make a proposition again, is called a *rhema*, or, relatively to the proposition of which it is conceived to be a part, the *predicate* of that proposition. (LF 2.2:144)

If one compares the 1892 definition with the 1903 definition, one sees that there are both terminological differences—the "statement" has become a "proposition"—and conceptual differences: while in the 1892 definition the things that are erased are "demonstratives" or "prodemonstratives," in the 1903 definition they are more neutrally called "erasures," but this is then further qualified by saying that these erasures are such that if they are filled with proper names a complete proposition is obtained. Moreover, in the 1903 definition Peirce adds that a rhema is called a "predicate" relative to the proposition of which it is conceived to be a part. Apart from these differences, however, the substance of the definition remains the same: a rhema is what remains of a proposition after certain specifiable parts of it have been erased.

Now, a couple of problems emerge as soon as some consequences of the definition of the rhema (or at least of its definitional substance) are taken into account. These problems have never actually been noticed by commentators, perhaps because the notion of rhema has never been subjected to special scrutiny. In the first place, starting with the *Minute Logic* of 1902 and more explicitly in the *Syllabus of Logic* of 1903, Peirce conceives a general classification of signs in which proper names are regarded as a variety of rhemata. Yet it is easy to show that a proper name does not satisfy the definition of the rhema. Scholars have failed to notice this problem because they have not given to Peirce's official definition of the rhema the consideration it deserves, or at least they have not connected Peirce's definition with his experiments in semiotic taxonomy.[3]

In the second place, in some of his works on the logic of relatives (like the "Regenerated Logic" of 1896, but also the "Logical Tracts. No. 2" of 1903) Peirce seems evidently to think that the analysis of the structure of the proposition is in terms of the rhema or rhemata of which it is composed, where simple predicates, relational expressions, and logical constants are all considered the "rhemata" into which a proposition is analyzable. Yet, careful consideration shows that these cannot be rhemata in the sense of Peirce's definition. Again, the problem has passed almost unnoticed in the literature because the official definition of the rhema has not been projected onto those passages in which Peirce offers an analysis of the proposition in terms of the rhemata it contains.

In this article I offer an analysis of Peirce's notion of rhema that takes these two problems at face value and attempts to solve them. Sections 3 and 4 are devoted to the first and the second problem, respectively. As a preliminary, Section 2 examines Peirce's official definition of rhema in its various versions.

2 | PEIRCE'S DEFINITION OF THE RHEMA

Let us go back to the early 1890s. The definition of "rhema" quoted above from "The Critic of Arguments" mentions a "written statement." This may arguably be taken as meaning the "linguistic expression of a proposition," and indeed Peirce's subsequent definitions of the rhema

[3]One exception: Stjernfelt (2014, p. 57n14).

mention "propositions," not the sentences that express them. Unfortunately, Peirce's use of the terms "sentence," "proposition," "statement," "judgment," and "assertion" is highly inconsistent.[4] In what follows, I will use the term "proposition" for the meaning of a sentence, with the proviso that in many cases this term is to be taken to cover the linguistic expression of a proposition (i.e., a sentence in some natural or formalized language), if only for the exegetical purpose of accommodating the oscillations of Peirce's logical idiolect. In any case, neither the distinction between a propositional content and its linguistic expression (proposition vs. sentence) nor that between a propositional content and the illocutionary force that may be applied to it (proposition vs. assertion) will be of special concern in what follows.

According to the definition, a rhema results from a proposition after erasure of one or more "demonstratives" or "prodemonstratives." A demonstrative is a word or other sign that indicates the thing or things the proposition is about. The term "demonstrative" comes from the fact that demonstrative pronouns, like "this" and "that," are paradigmatic examples of such indicating words or signs. Pronouns are so called because they stand in place of nouns. Yet, Peirce argues, this is incorrect grammatical terminology. Pronouns directly indicate their objects; nouns, on the contrary, are imperfect substitutes for pronouns, as they signify indirectly (i.e., by means of their signification) what pronouns indicate directly. For this reason, it would be more accurate to say that nouns are pro-pronouns; if we call all directly indicating words and signs "demonstratives," then those words and signs that signify indirectly are merely substitutes for demonstratives, that is, are "prodemonstratives."[5]

The distinction between relative and nonrelative rhemata is purely quantitative: if just one demonstrative is erased, the rhema is nonrelative (or monadic); if more than one demonstrative is erased, the rhema is relative (if two demonstratives are erased it is dyadic, if three it is triadic, etc.).

In the 1892 definition Peirce also contrasts the relative rhema with the relative term. In his early works on the logic of relatives, he tended to use nominal forms ("man," "lover of _," "giver of _ to _," etc.) rather than verbal forms ("_ is a man," "_ loves _," "_ gives _ to _," etc.).[6] By 1892, he has abandoned the nominal form, which he now calls "relative term," in favor of the verbal form, which he calls "relative rhema." The difference, he says, is that the rhema "retains the copula," that is, it contains a verb, which is the element that has the force of constituting an assertion (or, perhaps better, a sign capable of being asserted[7]) when the blanks are appropriately filled. Since it contains the verb, the rhema must also have a blank for the subject of the verb. Thus, for every relative rhema with *n* blanks there is a relative term with *n*-1 blanks. In any case, this terminological distinction between rhemata and terms disappears after 1892. Most often, Peirce uses "rhema" and "term" as equivalent.[8]

The definition is followed by some illustrations:

> 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. The blanks of a rhema can only be filled by terms, or, what is the same thing, by "something which" (or

[4]See Short (2007, pp. 242–248).

[5]See the grammatical footnote in the "Short Logic" of 1895 (EP 2:15n).

[6]See the "Description" of 1870 (W 2:364–66); cf. also Burch (1997, pp. 210–211).

[7]In 1892, Peirce has no clear theory of the distinction between a proposition and the assertion of it. For example, in the "Regenerated Logic" of 1896 he offers an analysis of "assertion," but what he actually discusses is propositions all along. A clear distinction between propositional content and illocutionary force emerges after 1903 and is often framed in semio-taxonomic terms; see Hilpinen (1982); Short (2007, pp. 242–256).

[8]"Rhemata are very nearly what are ordinarily designated as Terms. Indeed, they are the same things more accurately apprehended. A Rhema, or Term, is a Sign which is left to stand for whatever it may stand for" (SW:99); "the difference between 'breathes' and 'object which breathes' is chiefly apparent, not real; and that real difference is not sufficient to forbid my designating the rhema by the more familiar designation of term" (LF 1:414).

> the like) followed by a rhema; or, two can be filled together by means of "itself" or the like. (CP 3.421)

Just like Frege, Peirce used the analogy with chemical valence to convey the idea that a rhema is "unsaturated."[9] Saturation may be complete or incomplete. Complete saturation yields a complete proposition. It may take different forms. It may involve filling in the blanks of a rhema with a demonstrative pronoun or proper name. Thus, the monadic rhema "_ is a man" becomes the proposition "John is a man" when the proper name "John" fills in the blank. But saturation may also involve indeterminate subject terms. Thus, the monadic rhema "_ is a man" becomes the proposition "Something is a man" when its blank is filled by "something"; and the two monadic rhemata "_ is a man" and "_ is mortal" yield the proposition "Something which is a man is mortal" when the two blanks are both filled by the same "something," or better—since it is the same something that fills two blanks at once—by the phrase "something which." Likewise, the dyadic rhema "_ loves _" is saturated by filling in each of its two blanks by "something," thus yielding the proposition "Something loves something," or by "something which" in each of its two blanks, to each of which a monadic rhema may be attached: "Something which is a man loves something which is mortal." Peirce does not say it explicitly, but the operation of filling in the blanks of a rhema by "something" or "something which" amounts to *quantifying* in that blank: "Something which is a man is mortal" means "There is an x such that x is man and x is mortal"; likewise, "Something which is a man loves something which is mortal" means "There is an x, and there is a y, such that x is a man, y is mortal, and x loves y." The idea that the combination of rhemata goes via an implicit quantification is basically Peirce's old understanding of relative sum and product as incorporating existential and universal quantification, respectively.[10]

It is not clear what Peirce means by saying that the "blanks of a rhema can only be filled by terms." If with "term" he means a relative or nonrelative nominal form, which he has contrasted with verbal forms or rhemata in the preceding passage, then if the blank of the rhema "_ is mortal" is filled by the nominal nonrelative form "man," it yields "Man is mortal," which is a complete proposition; but if it is filled by the relative nominal form "lover of _," what we get is "lover of _ is mortal," which is not a complete proposition unless "something which," that is, something corresponding to an existentially quantified variable, is used to fill the remaining blank. I think that Peirce intends here to say that the blanks of a rhema can only be filled by something that is already *saturated*. For he says that filling a blank by a "term" is the same thing as filling it by "something which" followed by a rhema, and we have just seen that this latter operation amounts to an existential quantification in that blank. If the blank of the rhema "_ is mortal" is filled by "something," a term corresponding to an existentially quantified variable, it yields the complete proposition "Something is mortal"; if it is filled by "something which" followed by the rhema "_ is a man" it yields "Something which is a man is mortal," which is also a complete proposition; if it is filled by a "demonstrative," like "that" or "Paul," we get "That is mortal" or "Paul is mortal," which are also complete propositions. In any case, the unsaturated rhema is saturated into a complete proposition by filling its blank with a saturated form.

By means of the relation of identity, two blanks of a relative rhema may both be filled by variable terms that refer to the same individual. Thus, "Something loves itself" means "Something loves something which is identical with itself."

While complete saturation yields propositions, incomplete saturation yields rhemata of the same or of different valence. Here Peirce makes an appeal to his "reduction theorem" (which is

[9]On the chemical analogy in Peirce and Frege, see Picardi (1994, pp. 181–210); see also Roberts (1973, pp. 17–23).

[10]See "The Logic of Relatives" of 1883 (W 4:455); cf. Brady (2000, p. 102).

a theorem in the topology of relations) in both its positive and negative components: all relations of valence higher than 3 can be reduced to combinations of relations of valence 3 or lower (positive component), while relations of valence 2 cannot be obtained by combination of relations of valence 1, nor can relations of valence 3 be obtained by combination of relations of valence 2 or 1 (negative component).[11] With regards to rhemata, the positive component is illustrated by joining a monadic rhema to a dyadic rhema, thus getting a monadic rhema: "_ is a man" and "_ loves _" may yield either "_ loves something which is a man" or "something which is a man loves _," depending on whether one quantifies in the second or the first of the blanks in "_ loves _." The negative component of the theorem is illustrated by joining the two triadic rhemata "_ gives _ to_" and "_ takes _ from _" so as to quantify in the third blank of the former and the first of the latter, which yields the quadruple rhema "_ gives _ to something which takes _ from _."

Complete rhematic saturation yields propositions, incomplete rhematic saturation yields rhemata of the same or of different valence. Thus, rhemata may be considered as results of a combination of rhemata, where rhemata combination involves quantifying in some or all the blanks of the combined rhemata. As we shall see in Section 4, the procedure of rhemata combination, by which complex rhemata or propositions are obtained, is not the same as the procedure of proposition decomposition, by which rhemata are obtained according to the official definition.

Let us now consider the definition of the rhema in the "Logical Tracts. No. 2," quoted above. I have already mentioned that one of the differences between the 1892 and the 1903 definition is that in the former the things that are erased are "demonstratives" or "prodemonstratives" while in the latter they are more generally called "erasures" and are said to be such that if they are filled with proper names, a complete proposition is obtained. The same is true of coeval or later definitions:

> Imagine that certain parts of a proposition are erased, so that it is no longer a proposition but a *blank form* of a proposition containing one or more *blanks*, all which blanks are such that if they are all filled with demonstrative pronouns or proper names, the result will be a proposition. Then such a blank form of proposition is a *rhema* (Harvard Lectures of 1903, EP 2:221)

> If parts of a proposition be erased so as to leave *blanks* in their places, and if these blanks are of such a nature that if each of them be filled by a proper name the result will be a proposition, then the blank form of proposition which was first produced by the erasures is termed a *rheme*. (*Syllabus of Logic*, 1903, EP 2:299)

> Erase such a part of a proposition that if a proper name were inserted in the blank, or if several proper names were inserted in the several blanks, and it becomes a *rhema*, or term. ("On the Foundations of Mathematics," R 7, c. 1903, SW:136)

> A *rheme* is a blank form of proposition, such that when each blank is filled with a proper name the result is a proposition. ("The Basis of Pragmaticism," R 284, 1905, SW:208)

> By a *rheme*, or *predicate*, will here be meant a blank form of proposition which might have resulted by striking out certain parts of a proposition, and leaving a blank in the place of each, the parts stricken out being such that if each blank were filled with a proper name, a proposition (however nonsensical) would thereby be recomposed. ("Prolegomena," 1906, CP 4.560)

[11]Cf. Burch (1997).

In these later definitions, that which is "erased" from the proposition is given no direct description; Peirce does not say, as he does in 1892, that what is erased is a "demonstrative" or "prodemonstrative." He only says that what is erased is a "part" of the proposition, erasure of which creates a "blank" in the proposition, which blank is such that if it is filled with a proper name a proposition is again obtained. He does not say that what is erased is a proper name; he says that anything is a "blank," which if replaced by a proper name would constitute a proposition again. Take the proposition "Everybody loves somebody." Here "everybody" and "somebody" are quantifier terms. If "everybody" is erased from the proposition, what remains is the rhema "_ loves somebody," because if we fill the blank in it with the proper name "John" what we get is again a proposition ("John loves somebody"). Or take the proposition "The wife of John's eldest son loves somebody." If the definite description "the wife of John's eldest son" is erased from it, what results is again the rhema "_ loves somebody." Perhaps the 1892 reference to "prodemonstratives" along with proper demonstratives was an attempt to generalize: it is not just demonstratives that, if erased, turn a proposition into a rhema; erasure of anything that may be substituted by a demonstrative turns a proposition into a rhema. If we then call "anything that may be substituted by a demonstrative" a prodemonstrative, we see that the 1903 definition is not so much different from the 1892 definition. The 1903 definition is more general and more precise. Rather than directly describing the sort of things erasure of which turns a proposition into a rhema, Peirce gives an indirect description: they are those things that may be replaced by a proper name. To repeat: Peirce's mature definition of the rhema is not that a rhema is what remains of a proposition after one or more proper names are erased from it. It is rather: a rhema is what remains of a proposition after one or more parts replaceable by proper names are erased from it.

Let us call anything which may be replaced by a proper name in a proposition a "subject" of that proposition.[12] Consider the proposition "Everybody loves somebody." "Everybody" and "somebody" qualify as subjects of the proposition, because replacing them by proper names, as in "Romeo loves Juliet," would again yield a proposition. Therefore, "_ loves _" qualifies as a rhema, because it is obtained by erasure of its two subjects. On the contrary, "loves" is not a subject of the proposition, because replacing it by a proper name, as in "Everybody Romeo somebody," would not yield a proposition. Therefore, "everybody _ somebody" does not qualify as a rhema, because it is not obtained by erasure of one of its subjects.

3 | PROPER NAMES

Starting with the *Minute Logic* (1902) and more explicitly in the *Syllabus of Logic* (1903), Peirce constructs a general classification of signs according to which every sign is either a rhema, a proposition (also called "dicisign"), or an argument. In the *Syllabus* the semiotic definition of the rhema is: "A Rheme is a sign which, for its Interpretant, is a sign of qualitative possibility, that is, is understood as representing such and such a kind of possible Object" (EP 2:292). This roughly means that a rhema is interpreted as a sign that denotes no definite object but only represents a possible quality ("qualitative possibility") of its object; since it denotes no definite object, its "object" is only possible ("a kind of possible object"). Take the proposition "Paul is a man"; it denotes a definite object, Paul, and predicates a quality of it, the quality of being a man. Now take the rhema "_ is a man"; it denotes no definite object; it only represents the qualitative possibility of being a man, that is, represents a possible man. This is Peirce's semiotic rendering of the idea that a rhema is a proposition with one or more parts erased.

[12]Peirce uses this terminology in the *Minute Logic*: "That which remains of a Proposition after removal of its Subject is a Term (a rhema) called its Predicate" (SW:95). Also in "Logical Tracts. No. 2": "A *subject* of a proposition is any part of it for which a proper name of a known existing individual may be substituted without otherwise modifying the meaning" (LF 2.1:220).

Now, in Peirce's taxonomy of signs proper names are classified as rhemata. More precisely, they are, in the *Syllabus* terminology, "rhematic indexical legisigns."[13] We need not enter the complex semiotic edifice of the *Syllabus* to understand what this means. First, a proper name is a legisign because it is a type that occurs in replicas; each occurrence of one and the same proper name, say "Napoleon Bonaparte," is a distinct replica of one and the same type. Second, a proper name is an index, because it denotes an individual object; as such, it contrasts with symbols, which denote general objects. A proper name is thus an indexical legisign, or equivalently a legisign index. But why should one classify proper names with rhemata? One obvious answer is that since all signs are either rhemata, propositions, or arguments, and since a proper name is clearly not a proposition and a fortiori not an argument, it must be a rhema.[14] A rhema, we saw, is in some sense a component of a proposition. Now proper names can be components of propositions. Thus, it is natural for Peirce to regard proper names as rhemata.

Evidence of this is both direct and indirect. In the *Syllabus* Peirce does not explicitly say that proper names are rhematic indexical legisigns, but he does so classify demonstrative pronouns: "the demonstrative pronoun 'that' is a Legisign, being a general type; but it is not a Symbol, since it does not signify a general concept. Its Replica draws attention to a single Object, and is a Rhematic Indexical Sinsign" (EP 2:295). Since a sinsign may (though it need not) be a replica of a legisign, a rhematic indexical sinsign may be a replica of a rhematic indexical legisign. Since pronouns are typically associated with proper names, they are rhematic indexical legisigns, too, and their replicas are rhematic indexical sinsigns. Moreover, in the appendix of a letter written to his English correspondent Lady Victoria Welby on October 12, 1904, Peirce lists the 10 classes of signs of the *Syllabus*; the fifth class, only mentioned by name, is that of "*Proper names*, or Rhematic Indexical Legisigns" (CP 8.341). Not only proper names are classed with rhematic indexical legisigns; they also figure as the *label* of this class of signs: proper names are the rhematic indexical legisigns *per antonomasia*.

Now, the problem with this is that a proper name does not satisfy Peirce's definition of the rhema. Take the proper name "Hamlet." In order for it to satisfy the definition, it should be possible to regard it as having been obtained from a proposition by the erasure of one or more subjects of it, that is, of parts of the proposition that are replaceable by proper names. Take the proposition "Hamlet was the Prince of Denmark": we should be able to regard "Hamlet" as having been obtained from this proposition by the erasure of "was the Prince of Denmark." However, "was the Prince of Denmark" is not a subject of the proposition: replacing "was the Prince of Denmark" in "Hamlet was the Prince of Denmark" with the proper name "John Locke" produces "Hamlet John Locke," which is not a proposition. Peirce's definition of the rhema seems to be inapplicable to proper names.

There is evidence that outside the realm of semiotic taxonomy Peirce did not regard proper names as rhemata in the proper sense. For example, in the "Logical Tracts. No. 1," in the context of the exposition of his Existential Graphs,[15] Peirce distinguishes two kinds of "spots," that is, symbols that may be attached to lines of identity:

[13]Cf. Stjernfelt (2019, p. 180). Di Leo (1997) offers a good analysis of the semiotic nature of proper names, but sees no difficulty in the claim that proper names are rhemata.

[14]At this point, a difficulty may be raised that has to be mentioned. Peirce's famous claim that "thought is in signs" (W 2:208, 1868) implies that only thoughts are "signs." Why, then, insist that proper names are signs, if these cannot obviously express thoughts? The brief answer is that with "sign" *simpliciter* Peirce very often means a *complete* sign, that is, a proposition, which can express a thought. Sometimes he clearly distinguishes "complete" from "incomplete" signs (e.g., R 7, 1903, SW:131–32), but more often than not he is not explicit on that. Assuming some such distinction solves the difficulty: a rhema is an incomplete sign (it is indeed a complete sign from which something has been removed, thus rendering it incomplete), but a sign nonetheless.

[15]Existential Graphs are a notation for polyadic quantificational logic that Peirce invented in 1896; see Roberts (1973) and Pietarinen (2006).

FIGURE 1 Rhematic and onomatic spots in Existential Graphs.

> The spots are of two kinds, *rhemata* and *onomata*, although the former are superfluities of which I make little use. Each onoma is an arbitrary index of an indefinite individual. (LF 2.1:125)

Take the graph in Figure 1a. It has an occurrence of the line of identity attached to the single blank (or "hook") of the rhematic spot "_ lives." Since any separate occurrence of the line of identity represents a quantified variable, the graph in Figure 1a means "Something lives." Now take the graph in Figure 1b. It differs from that in Figure 1a only in that there is an onomatic spot attached to the other extremity of the line of identity. Peirce explains that it means "Something, call it X, lives" (LF 2.1:127). The onoma is the arbitrary name of an indefinite individual. In the coeval *Syllabus* Peirce writes that "any term fit to be the Subject of a proposition may be termed an *Onome*" (EP 2:286). An onoma is not a rhema. Since a proper name is an onoma, it is also not a rhema.

I mentioned that the only reason to regard proper names as rhemata is that the *Syllabus* triplet of rhemata, propositions ("dicisigns"), and arguments is exhaustive. In some of the definitions of the rhema that we have encountered so far, Peirce explicitly connects the notion of rhema to that of "predicate": a rhema is the predicate of the proposition from which it is extracted. While a full understanding of this connection must await the next section, it should be already sufficiently clear that if the triplet of rhemata, propositions, and arguments is exhaustive, then it must cover not only the predicate of the proposition, but also the subject. Since the subject of a proposition may be a proper name, proper names must be rhemata.

Now, if some generalization of this triplet could be found that might allow regarding proper names as nonpropositional and nonargumentative signs without implying that they are rhemata, then perhaps the problem would be solved. In point of fact, this is precisely what happens in Peirce's classification of signs of about 1906. In the "Prolegomena" we read:

> A familiar logical triplet is Term, Proposition, Argument. In order to make this a division of all signs, the first two members have to be much widened. By a *Seme*, I shall mean anything which serves for any purpose as a substitute for an object of which it is, in some sense, a representative or Sign. The logical Term, which is a class-name, is a Seme. Thus, the term "The mortality of man" is a Seme. By a *Pheme* I mean a Sign which is equivalent to a grammatical sentence, whether it be Interrogative, Imperative, or Assertory. In any case, such a Sign is intended to have some sort of compulsive effect on the Interpreter of it. As the third member of the triplet, I sometimes use the word *Delome* . . . , though *Argument* would answer well enough. It is a Sign which has the Form of tending to act upon the Interpreter through his own self-control, representing a process of change in thoughts or signs, as if to induce this change in the Interpreter. (CP 4.538)

One of the reasons for the widening of the *Syllabus* division into rhemata, dicisigns, and arguments was that Peirce is now in the position to distinguish the illocutionary force of a sentence from its propositional content. The 1903 dicisign was a sign that may be asserted; the 1906 pheme is a sign that may be the object of distinct illocutionary forces.[16] Apart from this

[16]Cf. Bellucci (2017, pp. 316–317).

speech-act theoretical dimension of the generalization, there is another dimension that concerns the first member of the triplet. The 1903 rhema was the predicate of the proposition from which it is extracted. The 1906 seme, by contrast, is any subpropositional component that may serve as a substitute for its object, whether such object is a definite individual, a quality, or a relation. Both the subject and the predicate of the proposition are semes, but only the predicate is a rhema. The 1906 terminology for this triplet remains relatively stable; it features in the last of Peirce's semiotic taxonomies, the one communicated to Lady Welby in December 1908 (EP 2:481).

This suggests a solution to our first problem. A proper name is not, after all, a rhema in the proper sense of Peirce's definition. In the years 1902–1904 we do in fact see Peirce classifying proper names as rhemata. But that was not his most considered view. In 1906, the notion of rhema is generalized to that of seme, which includes rhemata along with other semes, like proper names, which are not rhemata.[17]

4 | ANALYSIS AND DECOMPOSITION

In "Logical Tracts. No. 2," Peirce says that "every combination of parts of a proposition involves a rhema of second intention. If two propositions agree exactly in respect to their rhemata of second intention, differing consequently only in respect to their simple rhemata of first intention, they are said to have the same *logical form*" (LF 2.1:164). A rhema of first intention expresses "differences of real fact," while a rhema of second intention expresses "differences between symbols" (LF 2.1:217). In other words, a predicate or relational expression is a rhema of first intention; a logical constant, like the sentential operators, is a rhema of second intention. Identity in logical form is identity in rhemata of second intention; two propositions have the same logical form if they contain the same logical constants in the same order of application. A like idea was put forth in "The Regenerated Logic" of 1896:

> But instead of a single *icon*, or sign by resemblance of a familiar image or "dream," evocable at will, there may be a complexus of such icons, forming a composite image of which the whole is not familiar. But though the whole is not familiar, yet not only are the parts familiar images, but there will also be a familiar image of its mode of composition. In fact, two types of complication will be sufficient. For example, one may be conjunctive and the other disjunctive combination. Conjunctive combination is when two images are both to be used at once; and disjunctive when one or other is to be used. . . . The sort of idea which an icon embodies, if it be such that it can convey any positive information, being applicable to some things but not to others, is called a *first intention*. The idea embodied by an icon which cannot of itself convey any information, being applicable to everything or to nothing, but which may, nevertheless, be useful in modifying other icons, is called a *second intention*. (CP 3.433)

[17]My solution develops some suggestions by Stjernfelt: he notices that "it may be a source of confusion that Peirce continues to use 'Rheme' simultaneously in the more restricted sense" (2014, p. 57n14), that is, in the sense of the definition, and in the more general sense in which it is equivalent to "seme." It also has to be noted that if proper names were rhemata, as Peirce's taxonomies of signs of 1902–1904 imply or explicitly state, there would be a vicious circularity in the definition of the rhema: the *definiens* of "rhema" would contain an item whose definition is such that the *definiens* in it contains "rhema." On the other hand (on the assumption that proper names are indeed rhemata), if a rhema is defined, for instance, simply as a "predicate term" (Brunning, 1997, p. 257; Pietarinen, 2010, p. 345) or "unsaturated predicate" (Atkin, 2013), the circularity derived from assigning proper names to rhemata does not emerge.

What in the "Logical Tracts" is called a "rhema of first/second intention" corresponds to what in 1896 was called an "icon of first/second intention." The substance is the same.[18] The predicate of a proposition may be regarded as a complexus of simple rhemata of first intention and rhemata of second intention. Consider the proposition "Some woman is adored by all Catholics." It contains three simple rhemata of first intention: the monadic rhemata "_ is a woman" and "_ is a Catholic," and the dyadic rhema "_ adores_." The proposition is constructed from these simple rhemata in two steps: (i) the rhema "_ is a Catholic" is negated and then combined disjunctively with the rhema "_ adores _"; negation and disjunctive combination are effected by means of rhemata of second intention; disjunctive combination involves universal quantification, which in this case is effected by identifying the blank of the monadic rhema with the first blank of the dyadic rhema; the result is something like "either anything is not a Catholic or it adores _." (ii) The result of step (i) is combined conjunctively with the rhema "_ is a woman"; this is also accomplished by means of a rhema of second intention and involves existential quantification in the second blank of the monadic rhema; the result is something like "Something is a woman and either anything is not a Catholic or it adores it [= that woman]," that is, "There is an *x* such that for all *y*, *x* is a woman and either *y* is not a Catholic or *y* adores *x*," which is precisely the proposition "Some woman is adored by all Catholics."[19]

The whole proposition is analyzed into three rhemata of first intention and three rhemata of second intention, plus the quantifier terms and the order in which they are applied. The analysis is intended to explain how the sense of the whole depends on the sense of its parts. Peirce says: "though the whole is not familiar, yet not only are the parts familiar images, but there will also be a familiar image of its mode of composition." This means: the sense of the whole is given by the sense of the simple rhemata of first intention ("familiar images") plus the sense of the rhemata of second intention ("familiar image of its mode of composition"). The sense of the whole is determined by the sense of its simple constituents of first intention (the predicates and relational expressions) plus the manner they are combined by rhemata of second intention (by logical constants). In order to grasp the sense of the whole I need to grasp the sense of its parts and of the parts that join them.

This model of analysis is incompatible with Peirce's definition of the rhema. In the first place, the rhema that is extracted from a proposition by erasing one or more of its subjects is unique; by contrast, the analysis in question regards the proposition as resulting from six rhemata, three of which are of first intention and three of which are of second intention. In the second place, while the definition is applicable to the three rhemata of first intention under consideration, it is inapplicable to the rhemata of second intention. If from the proposition "Something is a woman and either anything is not a Catholic or the latter adores the former" I erase the parts "something is a woman" and "either anything is not a Catholic or the latter adores the former," what remains is the incomplete expression "_ and _," which is not a rhema in the sense of the definition, because filling its blanks with proper names, as in "John and Paul," does not produce a proposition. The same applies to the rhema of second intention "either _ or _." Rhemata of second intention are not rhemata in the sense of the definition. In the third place, not everything satisfying the definition of the rhema is something whose sense needs to be grasped in order to grasp the sense of the proposition from which it is extracted. Take again the proposition "Some woman is adored by all Catholics." If I remove "all Catholics" from it what I get is "some woman is adored by _," which is a rhema because "Some woman is adored by John Coltrane" is a proposition. But I do not need to grasp the sense of "some woman is adored by _" in order to grasp the sense of "Some woman is adored by all Catholics"; in order to grasp the sense of the proposition I need to grasp

[18]In this context, "icon" can be taken to mean "rhema" without significant harm. Later, Peirce would arrive at the conclusion that while all icons are rhemata, not all rhemata are icons (CP 2.254–63, 1903). Peirce speaks of "rhemata of second intention" also in "On Logical Graphs" (R 482, 1896) and in the *Syllabus* (CP 4.394–417).

[19]Cf. CP 3.436.

the senses of "_ is a woman," "_ is a Catholic," "_ adores_," plus the senses of negation, conjunction, disjunction, and existential and universal quantification. I also need to be able to construct or reconstruct the proposition from its constituents in the correct order; so I need to know and represent that *first* the negation of "_ is a Catholic" is combined disjunctively with "_ adores _," and *then* the result is combined conjunctively with "_ is a woman." All this I need to be able to do, but this is *all* that I need to be able to do in order to grasp the sense of the proposition. Grasping the sense of "some woman is adored by _" falls outside the process by which the sense of the whole is obtained from the sense of its constituents. In other words, the sense of the proposition "Some woman is adored by all Catholics" does not depend on the sense of "some woman is adored by _."

The only way to solve this problem is to recognize that the definition of the rhema in terms of erasure of a proposition's subjects, and the analysis of a proposition into rhemata of first and second intention, instantiate two distinct models of analysis. Here it is useful to introduce a distinction that was forged by Michael Dummett to solve a similar problem in Frege. Dummett (1981a, 1981b) calls "analysis" the process by which we break down a proposition into its "constituents," and which reveals the manner in which the sense of the proposition depends on the senses of its "constituents." He calls "decomposition" the process by which we remove from a proposition one or more occurrences of each of one or more proper names or other expressions, thus leaving an incomplete expression. In Dummett's terminology, the parts revealed by the decomposition of a sentence are not constituents of that sentence, but "components" of it. In Dummett's view, the decomposition of a proposition differs from its analysis in that its purpose is not to reveal how the sense of the proposition is dependent on the senses of its constituents, but to "extract" complex predicates that are then used in the construction of quantified propositions and in the account of the validity of the inferences in which the proposition occurs.

Peirce's "analysis" of the proposition into rhemata of first and second intention corresponds to Dummett's analysis. Those constituents of a proposition that Peirce calls rhemata of first and second intention in both "The Regenerated Logic" and "Logical Tracts. No. 2" are not rhemata in sense of the definition. Rhemata in the sense of the definition are not obtained by analysis, but by decomposition of the proposition.

Closely allied to Dummett's distinction between analysis and decomposition is the distinction between simple and complex predicates or rhemata. Peirce is careful to point out that the analysis (in Dummett's sense) of a proposition shows what *simple* rhemata of first intention are constituents of it; a rhema of first intention is simple if it does not contain rhemata of second intention. On the other hand, a rhema in the sense of the definition may be complex, that is, may contain rhemata of first and second intention. Further, simple rhemata of first intention may in some cases be the result of decomposition, as the limiting case of it. I shall return to this below.

Whenever one considers the manner in which a complex structure, be it a complex rhema or a complete proposition, results from the composition of simpler structures, it is analysis that is in question. Whenever one considers the manner in which an unsaturated structure results from a saturated one, it is decomposition that is in question.

Since analysis reveals the manner in which the sense of the whole depends on the sense of its constituent parts, analysis must be unique. For if distinct analyses of one and the same proposition were possible, these would yield distinct constituents; but distinct constituents means distinct senses; the sense of the proposition would then be undetermined and dependent on the mode of analysis chosen.

Decomposition, by contrast, can be multiple, that is, a proposition can be decomposed in distinct but equally legitimate ways. In several places Peirce says that a proposition is susceptible of different "analyses" into subject and predicate. So we read in the sixth chapter of *How to Reason* (1894):

> In the logical analysis of the sentence, we disregard the forms and consider the sense. Isolating the indices as well as we can, of which there will generally be a number, we

> term them the *logical subjects*, though more or less of the symbolic element will adhere to them unless we make our analysis more recondite than it is commonly worth while to do; while the purely symbolic parts, or the parts whose indicative character needs no particular notice, will be called the *logical predicate*. As the analysis may be more or less perfect—and perfect analyses are very complicated—different lines of demarcation will be possible between the two logical members. In the sentence John marries the mother of Thomas, John and Thomas are the logical subjects, marries-the-mother-of is the logical predicate. (CP 4.58)

In what Peirce calls the "logical analysis" of the proposition "John marries the mother of Thomas," the "logical predicate," namely the composite expression "marries-the-mother-of," perfectly satisfies the definition of the rhema, because it is what remains of the proposition after something replaceable by proper names (in this case, the proper names "John" and "Thomas") has been erased from it. A different "logical analysis" of the proposition is obtained, however, by drawing a "different line of demarcation" between the two "logical members," that is, the removed subjects and the remaining predicate: if we remove "the mother of Thomas" from the proposition, we get "John marries _," which, evidently enough, is also a rhema, because if we replace the blank in it with a proper name, say "Mary," we obtain again a complete proposition ("John marries Mary"). Distinct "logical analyses" of one and the same proposition are possible. To each analysis there corresponds a certain division of the proposition into subjects—things that may be replaced by proper names—and predicate—the rhema so extracted from the proposition.

There can be little doubt that Peirce conceived what he here calls the "logical analysis" of a proposition as something very similar to Dummett's decomposition. In a draft of the entry "predicate," which Peirce wrote for Baldwin's *Dictionary of Philosophy and Psychology*, we read: "If in any proposition, or sign which must be true or false, such a part is (or such parts are) struck out that what remains is not a proposition but will become a proposition as soon as the blank is (or blanks are) filled up each with a proper name, or index of a known individual, such a residue is a predicate, and is *the* predicate of the original proposition in reference to the particular mode of mutilation used" (R 1147:269–270, c. 1901). In the Harvard Lectures of 1903, he talks of the "mode of analysis": "How much shall be embraced in the predicate and how many subjects shall be recognized depends, for the ordinary analyses of logic, upon what mode of analysis will answer the purpose in hand" (EP 2:172). In the "Logical Tracts. No. 2" Peirce is most clear:

> Every proposition has one predicate and one only. But what that predicate is considered to be depends upon how we choose to analyze it. Thus, the proposition
> God gives some good to every man
> may be considered as having for its predicate either of the following rhemata:
> _ gives _ to _
> _ gives some good to _
> _ gives _ to every man
> God gives _ to _
> God gives some good to _
> God gives _ to every man
> _ gives some good to every man
> God gives some good to every man.
> In the last case the entire proposition is considered as predicate. (LF 2.1:144)

These eight distinct "analyses" of the proposition are the result of distinct operations of erasure of subjects and consequent extraction of rhemata. To each extraction there corresponds a distinct analysis of the proposition. It is clear that, despite the variation in terminology, with "analysis," "mode of analysis," and "mode of mutilation," Peirce means Dummettian decomposition (and not Dummettian analysis).

A rhema in the sense of the definition, that is, as something extracted from a proposition by erasure of one or more of its subjects, is not a constituent (in Dummett's sense) of the proposition, because we do not need to grasp the sense of the rhema in order to grasp the sense of the proposition. Take the proposition "If John marries the mother of Thomas, then Thomas kills John." A possible decomposition of it is into the subject "John" and the rhema "if _ marries the mother of Thomas, then Thomas kills _." In order to understand the sense of the proposition "John marries the mother of Thomas" I certainly need to understand the senses of the simple rhemata of first intention "_marries_," "_ is the mother of," and "_ kills _," the senses of the proper names "John" and Thomas," and the sense of the rhema of second intention "if _, then _." But it makes little sense to say that in order to understand the sense of the proposition "If John marries the mother of Thomas, then Thomas kills John" I need to understand the sense of the complex rhema "if _ marries the mother of Thomas, then Thomas kills _." This rhema is not a constituent of the proposition, that is, it is not something whose sense we need to grasp in order to grasp the sense of the proposition. In the constructional history of this conditional proposition, I first get the antecedent and the consequent out of their constituent parts ("John marries the mother of Thomas" and "Thomas kills John"). Then I combine the antecedent and the consequent by means of the logical constant or rhema of second intention "if _ then _." At no stage in the constructional history of the proposition do I encounter the rhema "if _ marries the mother of Thomas, then Thomas kills _." This is not one of the building blocks out of which the proposition is formed and into which the proposition is analyzed. It is just one of the possible decompositions of the proposition into subject and rhema.

There is evidence that by 1908 Peirce had become sensible to the distinction between (what Dummett calls) analysis and decomposition. In the projected but never published fifth article of the *Monist* series "Amazing Mazes" (R 200, 1908) Peirce wrote:

> A proposition can be so modified as to render the singular subject referred to or a different part of the proposition almost or entirely vague; and this modification may be carried so far that it cannot be said that it conveys any assertion at all. This operation is called *erasing* the part thus rendered meaningless; the result is called a *blank form* of proposition, and the possibility of rendering it definite again constitutes the being of an *ens rationis* in the particular blank form, which *ens rationis* is called a *blank*. When a blank form is such that the result of determining each blank in it to express a proper name is to reconvert it into a proposition, however silly, that blank form is termed a *rheme* or *predicate*. Thus, beginning with the proposition, "The empress Maria Teresa gave her daughter, Marie Antoinette, to the prince who subsequently became Louis XVI," which has four subjects of which three, Maria Teresa, Marie Antoinette, and Louis XVI are designate individuals, while the fourth, the reference to past history, is indefinite, or "particular," will yield fifteen predicates, four of one blank each, six of two blanks each, four of three blanks each, and one, which is the "significient" of the proposition with four blanks. It is "An empress, –, gives a daughter of hers, –, at date –, to a prince who subsequently becomes the King called –." The general relation of time expressed by "subsequently" can be signified by general words; but a date cannot be denoted, or fixed, without a reference to an actual experience of the interpreter. It will thus be understood that

> [any][20] proposition has but one "significient," which is its emptiest *predicate*. The other predicates that can be formed from it are figments, in so far as they are regarded as existing in the proposition. (SW:255–56)

The first part of the passage contains an elaborate definition of the rhema, which agrees in both substance and terminology with the ones I quoted and discussed above. The second part of the passage contains an example that illustrates the difference between the "predicate" and the "significient" of a proposition. The example is uselessly complicated by the fact that, as he explains, the occurrence in the proposition that he is considering of the temporal adverb "subsequently" determines a necessary reference to a point of time antecedent to that of the action described, and, when made explicit, such a necessary reference takes the form of a date, which can only be denoted, and thus is, like the other things denoted by the proposition, one of its "subjects." Let us abstract from this fourth subject to focus on a simplified, atemporal version of the proposition: "The empress Maria Teresa gives her daughter, Marie Antoinette, to the prince Louis XVI." This proposition has three subjects, namely "Maria Teresa," "Marie Antoinette," and "Louis XVI." Removing some or all of them will yield seven distinct rhemata: one triadic rhema, three dyadic, and three monadic rhemata: (1) "An empress, –, gives a daughter of hers, –, to a prince, –" (triadic); (2) "An empress, Maria Teresa, gives a daughter of hers, –, to a prince, –" (dyadic); (3) "An empress, –, gives a daughter of hers, Marie Antoinette, to a prince, –" (dyadic); (4) "An empress, –, gives a daughter of hers, –, to a prince, Louis XVI" (dyadic); (5) "An empress, Maria Teresa, gives a daughter of hers, Marie Antoinette, to a prince, –" (monadic); (6) "An empress, Maria Teresa, gives a daughter of hers, –, to a prince, Louis XVI" (monadic); (7) "An empress, –, gives a daughter of hers, Marie Antoinette, to a prince, Louis XVI" (monadic). The emptiest rhema or significient is obtained by removing *everything* removable from the proposition, that is, every subject of it. There is only one result of the operation of removing everything removable, and thus while there may be several distinct degrees of emptiness in a rhema, there is only one degree of *maximum* emptiness, that is, any proposition has but one "significient" or emptiest predicate. Only the triadic rhema (no. 1) that is extracted from the proposition is also its significient.

It has to be noticed that the "analysis" (in Dummett's sense) of the proposition that Peirce sketches in R 200 is not really the same, or at least does not have the same kind of result, as that offered in "The Regenerated Logic" (1896) and "Logical Tracts. No. 2" (1903) in terms of the distinction between rhemata of first and second intention: the "significient" of R 200 is something that is susceptible of further analysis into the rhemata of first intention "_ is an empress", "_ gives _ to _," "_ is a daughter of _," "_ is a prince." One thing is clear, however. Peirce says that the dyadic and monadic rhemata that may be extracted from the proposition by decomposition are "figments, in so far as they are regarded as existing in the proposition." This means, I think, that these rhemata are not "parts" of the sense of the proposition as the significient is. In other words, what he means is that all rhemata but the significient are Dummettian components, not Dummettian constituents of the proposition. Only the significient is a constituent of the proposition, that is, is something the sense of which needs to be grasped (along with the sense of the subjects) in order to grasp the sense of the proposition—even if, as noticed above, this constituent is not in its turn unanalyzable into simpler rhemata of first intention. Thus, the passage, and the difference that it draws between standard rhemata and the significient, can only be understood with the aid of some distinction between Dummettian analysis and Dummettian decomposition, even though Peirce is not admittedly discussing two distinct analytical processes in this passage.

That a propositional significient may be obtained by decomposition does not entail that it may not be obtained by analysis, too. Like Dummett (1981a, pp. 30–31), Peirce would allow this

[20]The manuscript (R 200:101) has "no proposition has but one significient," but the meaning should certainly be that "no proposition has more than one significient," that is, "any proposition has but one significient," so I have emended "no" into "any."

as a limiting case. Consider the incomplete expression "_ walks." It can be seen as having been obtained by decomposition from the proposition "Dion walks" by erasure of the proper name "Dion." It is thus a component of that proposition. But it is also a constituent of it, because it is one of the elements revealed by the analysis of it and whose sense, along with the sense of the proper name, has to be grasped in order to grasp the sense of the proposition. It is, in the terms of the "Logical Tracts. No. 2," a simple rhema of first intention. A significient is thus the limiting case of a rhema; it is that rhema that is obtained when *everything* that can be replaced by a proper name is erased from a proposition.[21]

5 | CONCLUSION

I have offered an analysis of Peirce's notion of "rhema" that is both textually comprehensive and conceptually coherent. I have discussed Peirce's several definitions of the rhema from 1892 to 1908 and have identified two problems that are direct consequences of the definition. The first is that proper names cannot be rhemata, while in the years 1902–1904 Peirce worked out a semiotic taxonomy in which proper names are classified as rhemata. The solution that I propose involves a look at the manner his taxonomy evolved. Peirce's tendency to classify proper names with rhemata was not his considered view. Around 1906 he generalizes his notion of rhema into that of seme; proper names are semes but are not rhemata. The second problem is that not everything that Peirce obtains in the analysis of the proposition, and which he calls a "rhema," satisfies Peirce's definition of the rhema. In order to solve this problem, I propose to adapt Dummett's distinction between analysis and decomposition to Peirce. If the adaptation is successful, Peirce may be regarded as saying that rhemata in the sense of the definition are the results of possibly distinct propositional decompositions, while the explanation of the structure of the proposition in terms of the rhemata it contains, and thus the explanation of the manner in which the sense of the proposition is a function of the sense of its constituents, is the result of propositional analysis.[22]

ORCID

Francesco Bellucci https://orcid.org/0000-0002-0435-5453

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[21]Confusingly, Di Leo uses the variable "*x*" not for the "subject" of the proposition (for which he uses the blank instead), but for the "content" of the rhema. This content, he says, must be "some property or quality, such that it might be embodied in an object, possibly either existing or fictitious, and the rheme is monadic. It must be noted here that *x* cannot be another proper name, for if it is, then the rheme is actually dyadic, rather than monadic" (1997, p. 581). Di Leo seems here to be excluding monadic rhemata that contain proper names. If from "Tullio is Cicero" we erase "Tullio," that which remains is "_ is Cicero," which is a rhema in the sense of the definition. But Di Leo seems to think that "_ is Cicero" is not a rhema, because in order for it to become a rhema, the proper name that occurs in it should be removed. We would thus have a dyadic rhema ("_ is _"), rather than (what Di Leo considers) an ill-formed monadic rhema ("_ is Cicero"). The point is that a rhema is obtained by erasing some or all occurrences of one or more elements of a proposition each replaceable by a proper name, while Di Leo seems to think that a rhema is obtained by erasing *all* proper names from a proposition. In Peirce's 1908 terminology, Di Leo is confusing a rhema with a significient.

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AUTHOR BIOGRAPHY

Francesco Bellucci is an associate professor at the University of Bologna. His primary area of research is Peirce's logic. He is the author of *Peirce's Speculative Grammar* (Routledge, 2017) and the editor of *Charles S. Peirce. Selected Writings on Semiotics* (De Gruyter, 2020).