

# Peirce and Vailati on Semiotics and Freedom

## *Peirce e Vailati sobre Semiótica e Liberdade*

**Giovanni Maddalena**

Department of Human and Social Sciences  
University of Molise – Campobasso, Italia  
maddalena@unimol.it

**Abstract:** In this paper I will examine the relationship between the philosophies of Vailati and Peirce on hypothetical reasoning. In this way I will try to show that Vailati was more aware of pragmatism than his commentators thought. But, on the other hand, I will try also to point out the crucial differences between his thought and the original American one.

The interest to this reconstruction is not only philological. I would like to suggest that in this epoch in which we are watching at a true pragmatic turn in philosophy Vailati can be very important for both his way of understanding (or misunderstanding) pragmatism and the peculiar rational needs – the importance of genealogy in science and free will – he addressed to every formulation of pragmatism.

**Keywords:** Abduction. Aesthetical and ethical impact on knowledge. Anti-Kantism. Freedom. Italian pragmatism.

**Resumo:** Neste trabalho examinarei a relação entre as filosofias de Vailati e Peirce sobre o raciocínio hipotético. Dessa forma, tentarei demonstrar que Vailati era mais cômico do pragmatismo do que pensavam seus críticos. Por outro lado, tentarei também assinalar as diferenças cruciais entre seu pensamento e o pensamento original americano.

O interesse nesta reconstrução não é só filológica. Gostaria de sugerir que nesta época em que observamos uma verdadeira mudança na filosofia, Vailati pode ser de extrema importância tanto pela sua forma de entender (ou desentender) o pragmatismo, quanto pelas necessidades racionais peculiares – a importância da genealogia na ciência e livre-arbítrio – de que se valia para cada formulação do pragmatismo.

**Palavras-chave:** Abdução. Antikantismo. Impacto estético e ético no conhecimento. Liberdade. Pragmatismo italiano.

Italian pragmatists have often been seen as naïve pragmatists, people who understood the only American stream of thought in a partial way, with many errors and misunderstandings. Moreover, many scholars have suspected them to propose a mere vitalism which helped and inspired the emergent fascism<sup>1</sup>. Finally, critics split the core of them, the four founders of the Florence Pragmatist Club – Papini, Prezzolini, Vailati and Calderoni – in two parties: on the one hand, Papini and Prezzolini – editors of the *Leonardo* – who would have held a Jamesian kind of pragmatism lying heavily on a nihilist background and dangerously bending toward the magic world of occultism. On the other hand, Vailati – older than the rest of the group by 20 years, and former assistant researcher with Peano – who would have sustained a pure logical pragmatic method, referring – with his younger disciple, Mario Calderoni – to Peirce's view of pragmatism.

There are many right clues in this picture, but my sense is that it misses some important hints that allow us to talk of a real and somehow unitary Italian pragmatism and to understand what kind of need or exigency it addressed to the original American philosophy.

In this paper I will try to restore a more complete picture, examining the relationship between the philosophies of Vailati and Peirce on hypothetical reasoning. In this way I will try to show that Vailati was more aware of pragmatism as a whole than his commentators thought. But, on the other hand, I will try also to point out the crucial differences between his thought and the original American one.

The interest to this reconstruction is not only a philological one: I would like to suggest that in this epoch in which we are seeing a true pragmatic turn in philosophy Vailati can be very important for both his way of understanding or misunderstanding pragmatism and the peculiar rational needs he addressed to every formulation of pragmatism.<sup>2</sup>

### 1. Vailati's pragmatist conscience

Vailati was a pragmatist. Some scholars tried to enrol him among the analytic philosophers because of the attempted reduction of some metaphysical problems to linguistic problems, the distinction between meaning and truth theories, the appreciation for formal logic, the distinction between ethical normative ground and descriptive epistemology – poorer but stronger field of inquiry –, and finally for his hate for what

---

1 For a comprehensive account of Italian pragmatism: Santucci (1963); Dal Pra (1984); Casini (2002); De Waal (2004); Maddalena-Tuzet (2007). In particular, for a very sound interpretation of Vailati see Quaranta's introduction to the Writings (*Scritti*) of Vailati (Quaranta, 1987) and two papers by Massimo Ferrari in his book on Italian not idealist philosophies at the beginning of the XX century (Ferrari, 2006). For this discussion upon the ambiguous role of pragmatists in respect of tendencies that will find an outcome in fascism it is important to follow the debate Colella-Colapietro in *Transactions of the Charles S. Peirce Society* (Fall 1994, XXX, n.4). Both furnish valid arguments and an adequate critique of more radical versions.

2 The growing interest for Vailati is confirmed by the publication in the US of a selection of his writings by C. Arrighi, P. Cantù, M. De Zan, P. Suppes (VAILATI, 2009).

was imprecise, vague and not precisely referred-to states of facts.<sup>3</sup>

All those characteristics are true. But they work within some more important pragmatist features that are really foreign to the analytic pattern.

First of all, in his introductions to his courses on the History of Mechanics, Vailati maintained that we can ascertain truth within a historically understood experience (S II: 6-7; 16). According to Vailati, truth is historical in the sense testified by mathematical discoveries: truth is something which is always emerging as we have learned from evolutionism. Truth is happening and in the long run it would coincide with “reality”.

If I did not fear to go too farther into metaphysical lands or to scandalize you, I would dare to say not only that truths exist, but that they are the only things that exist in that way (i.e.: to believe that a body exists means to believe that our expectations would be satisfied...if we had them; and it seems to me that it does not mean anything more). Reality is another name for truth. (*Letter to Papini* [VAILATI, 1971, p. 362])

Second, he recognized the power of the pragmatist rule and understood exactly the future conditional verification that it implies, as the previous quote shows directly and Papini would have shown some years later introducing Vailati’s collected papers (VAILATI; CALDERONI, 1918).

Third, Vailati accepted a pragmatist view of experience opposed both to rationalism and empiricism. Reality is not just the world of brute facts. “The world of paper” – according to Galileo definition – is not as useless as it was for the Pisan scientist.

... this world of paper to which Galileo despised so much, the world of ideas and human imagination, is neither less real nor less sensitive nor worth studying or intelligent observing than the other world to which he dedicated his mind with so great success. Opinions, whether true or false, are always facts, and as facts they deserve and claim to be object of inquiry, tests, and explanation exactly as any other order of facts. And with the same end: through their varieties, through their complex structure and transformation, the end is to determine constant elements, uniformities, and laws to which they ought their dynamics. (S II: 4)

In this deep understanding of the richness of experience – where there is no distinction between theoretical and practical ground, object and subject, facts and ideas – relies the centre of Vailati’s relationship with Papini and the other Italian pragmatists. Commenting with favour one of Papini’s articles, he wrote him:

There are those who have dreamed that which they couldn’t achieve and those who have achieved – or made it possible to achieve – that which no-one (and they less than others) has ever even dreamed of wanting. Now it is necessary the rising of those who proclaim that “doing” and “being able to do” only have value if they serve to “realize a dream” and that dreams only have value if one may hope to have the strength and means to realize them. The simultaneous recognition of both these two requirements is much more than is needed to give substance and life to a new orientation of the philosophical speculation; this latter has had and can have no higher scope. (VAILATI, 1971, p. 397)

---

3 Among others sustainers of this idea we can recall Marcucci, Lanaro, Brodbeck, Facchi, Barone, Cecchinell, Geymonat, Aqueci.

Those three elements – historicity of truth, pragmatic rule, and broad view of experience – show that Vailati was a pragmatist as pragmatists were the other members of the Florence Pragmatist Club. In this sense we can identify in the anti-Cartesianism and in the anti-Kantism the common root that bounded together the Italian scholars gathered around the Leonardo. And that same characteristic tied them up to the American pragmatists and European thinkers as Schiller, Bergson, Unamuno.

## 2. Vailati and Peirce on hypothetical reasoning

But at the same time there are peculiarities that deserve further analysis. That is why it is so interesting to look up at the main difference between Vailati and Peirce, who were both pragmatists and logicians. The difference is exactly on the method of reasoning.

Vailati seemed to understand the revolution that was going on in science showing it at great length in his 1898 *Introduction to the course of History of Mechanics* (SII: 18-48). Mathematical logic was opening new frontiers to the use of deduction, which could not be read anymore just as an expression of the content of its premises or definitions (as it was for Sextus or Kant) (S II: 34-39). The contemporary view of deduction makes syllogism cover both the expectation of consequences and the construction of premises. Aristotle thought that deduction was useful to colligate uncertain propositions to more certain ones, but modern science knows that consequences also help testing and reinforcing premises (S II: 23-24). In this way, modern deduction affords reciprocal control among propositions, and the connection of singular facts to more general ones that can satisfy our inquiry (S II: 42; 44).

Now, the heart of a theory of knowledge is the construction of premises. Vailati read also Plato's ideas (S I: 77-78; S II: 45-46) and Berkeley's or Locke's philosophies as focused on this epistemological issue (VAILATI, 1971, p. 406-407). So that he reached the conclusion that the power of images is the real epistemological tool we are looking for when we wonder why we can hypothetically formulate certain premises. Deduction covers the whole path from those hypothetical premises to the conclusion that verifies them.

But where do those images stem from? According to Vailati, we have to account for the hypothetical power of images following a psychological path. In this sense, Vailati is in the same stream of logicians as Sidgwick, Hamilton, and Mill. In the paper he presented at the III International Conference of Psychology held in Paris on August 1900 (S II: 87-91), Vailati uses Brentano's psychology, holding that images are "representations" but they assume the power of enlarging our knowledge only when they enter the realm of facts (or expectations of facts).

What does that mean from the logical point of view? Representations have their logical correspondent in "definitions" that do not produce any new knowledge, while facts have their correspondent in "beliefs" that we can either verify or falsify. The impact of images-definitions on facts-beliefs is the heart of the hypothetic-deductive system. But of course this would not be enough if there were not a purpose according to which we can choose the ends of our inquiry. Those ends will determine the kind of images-definitions we want to use. The choice of those ends is the part of our inquiry that Vailati labels as "judgments of value".

Concluding, the complete path of inquiry according to Vailati is the following: 1) there is a free choice of ends we want to reach; 2) we use our representations to “define” the means we are going to work with; 3) we put at work those representations in hypothetic-deductive inferences in which we hold “beliefs” that we can verify or falsify.

Here the comparison with Peirce becomes relevant. Also Peirce recognized the importance of images in constructing a deductive reasoning and acknowledged the power of expectation of consequences involved in deduction. Moreover, Peirce classified a kind of deduction that implies always the hypothetical turn: the so-called theorematic deduction. Theorematic deduction (as distinguished from corollarial deduction) uses images, new lemmas (demonstrable propositions that fall outside the inquiry) or theses foreign to the theorem at stake in order to demonstrate more general theorems. The path from the theorem we are explaining to the postulates is matter of theorematic deduction. And so far Peirce’s analysis is similar to Vailati’s.

But Peirce does not exhaust the description of the rationale of hypothesis with theorematic deduction. Theorematic deduction is useful only when we already know at least the genus of the phenomenon we want to explain. But when the phenomenon does not enter any previous known experience (this is why it is “surprising”), and so we have literally to pass from unknown to known, we have to look at a completely different kind of reasoning. According to Peirce, this latter is called “abduction” and it is the passage from consequent to antecedent, which – as everybody knows – in deductive logic is simply a fallacy.

What are the differences between abductive and deductive hypothesis?

Here we do not have time to recall all the different definitions of abduction that Peirce gave. But we can underline three main differences between any description of deduction (for both Vailati and Peirce) and the standard way in which Peirce described abduction after the turn of the century.

The standard view is the following:

The surprising fact, C is observed;  
But if A were true, C would be a matter of course.  
Hence, there is reason to suspect that A is true. (EP2: 231)

So the main differences are:

1) In abduction there is a surprising phenomenon we have to account for. While in deduction, according to Vailati himself, surprise is built in laboratory: in Peirce’s terms, it is the power of secondness, brute reality, that ruins our previous expectations and that gives life to a “real and living doubt”. It is the strong, brute connection to the external world which makes us think. In this connection we see the guarantee versus any nominalism that detaches reality (in any modality) and knowledge (NUBIOLA, 2005, p. 117-128).

2) An abduction requires a first stage of “musement”, namely a reading of signs as icons and indices that lie below the symbolic level that we use in induction and deduction. Following Peirce’s suggestions we can call aesthetics and ethics the reading about the admirability and the possibility of our new disposition of signs (MADDALENA, 2005, p. 251-259; 2009, p. 57-78).

3) The abductive hypothesis indicates a different order of signs which is a real and superior level of the continuum of experience. Without these mathematical

continua stemming from one another as the sets in Cantor's theorem (that Peirce independently discovered), it is impossible to understand why Peirce thought metaphysical realism to be such a decisive requirement of any philosophy of science<sup>4</sup>. Metaphysical realism is the way in which we can explain why we can comprehend reality without ever reaching the totality of it.

For Peirce there are both the deductive hypothesis recognized by Vailati and another hypothesis, more profound, which stems from the reading of signs of reality and that cannot be self-produced. In this sense Peirce does not need any psychological background because semiotic covers the entire arch of hypothesis: from phenomenology, namely from the way in which occurrences happen and are transformed in facts to the sophisticated paradoxes of applied mathematics which make us peep to the metaphysical realm of a broader view of reality. In other words, Vailati's gnoseological picture is weak about the power of new surprising phenomena, the semiotic development from perception, the different levels of continua.

### 3. Vailati's metaphysical "nominalism"

Now we have to show two limits in Vailati's proposal. They reflect in general the weak point of the Italian understanding of pragmatism in the first decade of the past century.

Vailati felt the need of extending the limits of reasoning but he did not go far enough from the usual logical background which wanted hypotheses tied to psychology. Therefore, when we formulate a hypothesis we have either to stay within the deductive path or to jump into the world of values. In this way he showed an attitude that Peirce's precise jargon defined as "nominalism" understood as the distance between reality and our knowledge. Vailati did not go far enough in his enquiry, using a double standard for epistemology and for metaphysics. He kept using at the same time an epistemology which implied some sort of pragmatic realism as the conditional verification of beliefs, and a nominalist metaphysics. This is why he had to keep values and facts as separate. The choice on ends and the study of means lie on different grounds.

Paradoxically, Vailati undergoes to the same critique he moved to Greek scientists in one of his introductions to the courses of the history of mechanics:

... before a new unexplained fact they were concerned with recognizing some features they could refer to some less surprising phenomenon that was known because of its frequent happening. This reference was a real comparison with some more familiar and similar fact, showing their substantial identity. (S II: 29)

Vailati's hypothesis does not allow any real novelty because it does not lie on a semiotic and phenomenological ground. It can enlarge reasoning as far as symbols can do it. But it cannot reckon the strength of the real novelty which "forces us" to some new reading of the universe of signs. We can indicate this attitude with a metaphor taken from Pasternak's "Doctor Zhivago":

---

<sup>4</sup> For these studies see both M. Moore (2007) and Maddalena (2009, p. 137-192).

He had an unusual power of clear and logical reasoning, and he was endowed with great moral purity and sense of justice [...] But to the task of a scientist breaking new ground, his mind would have failed to bring an intuition for the incalculable: the capacity for those unexpected discoveries which shatter the barren harmony of empty foresight. (PASTERNAK, 2002, p. 226)

In general, Italian pragmatists did not understand the deep phenomenological and semiotic study that presided over Peirce's analyses. In this way, they often missed the true original contribution of American pragmatism – at least in Peirce's version – its peculiar anti-nominalism that makes pragmatism so interesting today for philosophy.

Second, Vailati's metaphysical nominalism involves a refusal of the metaphysical reality of possibility and necessity. For Vailati the only possible modality is existence, and – relying on Pikler analysis as he does in his 1909 paper "On the origins and the main ideas of Pragmatism" (S I: 116-128) – every possibility has to be resolved into some existent voluntary act (S I: 122). So that he does not allow any metaphysical explanation, charging it as a mere different linguistic formulation. The consequence is that the conditional future verification is an epistemic tool but not a metaphysical reality. Curiously both Vailati and Peirce picked out the same example – the sleeping power in opium – respectively to deny and confirm this level of reality that we reach by abstraction. Peirce maintained that saying that opium has a sleeping property is the beginning of a sound reasoning (MS 303: 12-14). Vailati thought that it was a float of voice (S I: 137).

Therefore we could say that Vailati's pragmatism respected the main features of American pragmatism, the essence of which lies in the pragmatic maxim – often quoted by Vailati in the Leonardo – but, due also to the premature death, it did not follow the epistemic-metaphysical consequences that the American thinkers were pursuing.

#### **4. Possible suggestions from Vailati's insights.**

But in Vailati there is more than just a diminished understanding of the American philosophy. And here probably lies his best contribution to our contemporary epistemology. Even through the asymmetry between realistic epistemology and nominalist metaphysics, Vailati scattered notes show that he felt the need to go beyond the subtle common ground of empiricism and idealism that Italian pragmatists opposed and rejected. We have already mentioned the common anti-Cartesianism.

But Vailati, as the late Peirce, thought that Kant's concept of experience deserved equal aversion. Maybe Vailati did not fully realize the depth of his anti-Kantian stand, but here I want to point out that Vailati showed some suggestions that can be useful to our epistemology, starting from his view of the Kantian distinction between analytic and synthetic reasoning. Vailati did not want to reject the distinction but to acknowledge that analytic reasoning derives from the synthetic reasoning, and therefore that the link between a-prioricity and necessity is not as strong as Kant thought. In this way Vailati anticipated Quine's and Kripke's critiques to the Kantian distinction and perhaps he suggested a different exit from the Kantian canon. Vailati's refusal of Kantian critical thought is well known. He thought that Kant's picture of science was simply misinformed about what was really going on in science even at his own time. But, more in general, Vailati understood that the necessity claimed by

analytic propositions and reasoning is historically determined. It cannot be a-priori. As a matter of fact, even without the Peircean semiotic background, Vailati pointed out that genealogical and historical connections are essential to any branch of science notwithstanding Kant's appraisal for critical introspection.

In any direction [...] most uberous and efficient methods have shown to be those based on comparison, confrontation, research of analogies, and of historical and genealogical connections. At the same time all the other methods based on naïf and simplistic presupposition of understanding by direct or indirect introspection the mental structure of human beings [...] have loose credit and field of application. (SI: 335)

Completing the anti-Kantian view, Vailati sustained the importance of the aesthetical judgment into scientific discovery and knowledge. Also in this case, Kant's distinctions are farther from the real process of discovery than Vailati's unitary understanding of methods. When he thought of very important influences on mechanical discoveries, he mentioned "coherence, symmetry, admirable coordination among modern mechanical theories and even their aesthetical character by which many great mathematicians have been impressed, the same character that led Hamilton to define Lagrange's analytic mechanic as a kind of scientific poem (in English in the original text)" (SR: 95).

Besides, even against the original pragmatism, Vailati's constant reference to will as a free choice of the ideals that we want to pursue in our research shows the deep need of something free in the development of our theoretical knowledge. This is a very peculiar feature of Italian pragmatists. As we know, American pragmatism in general, and Peirce's in particular, tended to deny any individualistic freedom and will (W2: 241; MS 403)<sup>5</sup>. Even James would have never accepted an ultimate disembodied view of freedom. Freedom is always an attitude toward reality and it is intertwined with the whole psychological stream of thought<sup>6</sup>. This continuity between reality and thought that Dewey later articulated in his *Logic* is the epistemic-metaphysical matrix of the "rope" of experience. And Italian pragmatists always criticized this aspect of pragmatism trying to use against it both James' and Brentano's psychology mixing it up with the Nietzschean defence of choice and with Newman's difference between concrete and formal apprehension (a distinction drawn from Locke) (NEWMAN, 1973). It is true that they did not understand the complex problem of continuity which was at the bottom of the pragmatist evolutionist way of understanding knowledge, but it is worth noticing that in their misapprehension they added a personalistic existential tone and a nihilist disquiet to pragmatism. In Vailati this nihilist touch influences his practical skepticism or relativism, but still shows that there was the need of something more than a logical method or a critical attitude to account for the relationship between knowledge and reality.

Vailati was more a pragmatist than his American colleagues from this point of view. He acknowledged the importance to account for our common-sensist perception of freedom. But at the same time he did not want to accept that brute distinction

---

5 See also De Tienne (2005).

6 For a thorough reconstruction of James' attitude toward the dilemma of freedom see Calcaterra (2003, p. 101-116).



between practical and theoretical realms that was Kant's solution (so tempting also for Peirce as you can see in the 1898 Cambridge Conferences [PEIRCE, 1998b]).

Vailati did not find a better alternative but in this task to think again the synthetic-analytic distinction according to a historical point of view (maybe using the power of tools as phenomenology, semiotics and a more realistic metaphysics), and to re-formulate the role of the subject beyond Kantian distinctions and hermeneutical arbitrariness I find Vailati's most original contribution to the actual condition of philosophy.

## References

- ANDERSON, D.R. (2005). "The esthetic attitude of abduction", *Semiotica* v. 153, n. 1/4, p. 9-22.
- AQUECI, F. (1999). "Vailati, il linguaggio e il valore civile del retto ragionare". In: *Lezioni su Giovanni Vailati*. Crema: Leva Artigrafiche. p. 21-38.
- BARONE, F. (1963). "Vailati e l'analisi del linguaggio", *Rivista Critica di Storia della Filosofia*, v. 18, n. 3, p. 374-386.
- BRODBECK, M. (1963). "Vailati's Implicit Ontology", *Rivista Critica di Storia della Filosofia*, v. 18, n. 3, p. 332-337.
- CALCATERRA, R.M. (2003). *Pragmatismo: i valori dell'esperienza*. Roma: Carocci.
- CASINI, P. (2002). *Alle origini del Novecento: Leonardo 1903-1907*. Bologna: Il Mulino.
- CECCHINEL, S. (1963). "I tropi della logica e la semeiotica generale di Vailati", *Rivista Critica di Storia della Filosofia*, v. 18, n. 3, p. 387-398.
- COLAPIETRO, V. (1989). *Peirce's Approach to the Self*. Albany: State University of New York Press.
- \_\_\_\_\_ (1994). "Tell your friend Giuliano...: Jamesean enthusiasms and Peircean reservations", *Transactions of the Charles Sanders Peirce Society*, v. XXX, n. 4, p. 897-926.
- COLELLA, P.E. (1994). "Two faces of Italian pragmatism: the Prezzolini-Calderoni debate, 1904-1905", *Transactions of the Charles Sanders Peirce Society*, v. XXX, n. 4, p. 861-896
- Dal PRA, M. (1984). *Studi sul pragmatismo italiano*. Napoli: Bibliopolis.
- De TIENNE, A. (2005). "La persona come segno". In: *Semiotica e fenomenologia del Sé*. Ed. by R. Calcaterra. Torino: Nino Aragno Editore. p. 91-110.

- De WAAL, C. (2004). *On Pragmatism*. Belmont (CA): Wadsworth Publishing.
- FACCHI, P. (1952). "I contributi di G. Vailati alla metodologia e all'analisi del linguaggio", *Rivista Critica di Storia della Filosofia*, v. 7, p. 41-48.
- FERRARI, M. (2006). *Non solo idealismo: Filosofi e filosofie in Italia tra Ottocento e Novecento*. Firenze: Le Lettere.
- GEYMONAT, L. (1963). "Alcune considerazioni sull'interesse di Vailati per la logica", *Rivista Critica di Storia della Filosofia*, v. 18, n. 3, p. 410-415.
- GULLACE, G. (1962). "The pragmatist movement in Italy", *Journal of the History of Ideas*, v. XXIII, n. 1, p. 91-105.
- LANARO, G. (1980). "Introduzione". In: VAILATI, G. *Scritti filosofici*. Firenze: La Nuova Italia. p. 5-31.
- MADDALENA, G. (2003). *Istinto razionale*. Torino: Trauben.
- \_\_\_\_\_ (2004). "Peirce and Cantor on metaphysical realism", *Semiotiche*, v. 2, p. 137-149.
- \_\_\_\_\_ (2005). "Abduction and metaphysical realism", *Semiotica*, v. 153, n. 1, p. 243-259.
- \_\_\_\_\_ (2009). *Metafisica per assurdo*. Soveria Mannelli (CZ): Rubbettino.
- MADDALENA, G.; TUZET, G. (2007). *I Pragmatisti italiani: Tra alleati e nemici*. Milano: Alboversorio.
- MARCUCCI, S. (1958). "Il pensiero di G. Vailati", *Filosofia*, v. 19, n. 2, p. 260-301.
- MOORE, M. (2007). "On Peirce's Discovery of Cantor's Theorem", *Cognitio*, São Paulo, v. 8, n. 2, p. 223-248.
- NEWMAN, J. H. (1973). *An essay in aid of a grammar of assent*. Westminster: Christian Classics.
- NUBIOLA, J. (2005). "Abduction or the logic of surprise", *Semiotica*, v. 153, n. 1, p. 117-128.
- PASTERNAK, B. (2002). *Doctor Zhivago*. London: Vintage Books.
- PEIRCE, C.S. (1998). *The Essential Peirce*, v. 2. Ed. by Peirce Edition Project. Indianapolis and Bloomington: Indiana University Press. (EP2)
- \_\_\_\_\_ (1998b). *Reasoning and the Logic of Things*. Ed. by K. Ketner and H. Putnam. Cambridge (Mass.): Harvard University Press.

- QUARANTA, M. (1987). "Lecture di Giovanni Vailati nella cultura italiana (1911-1986)". In: *Scritti*. Ed. by M. Quaranta. Bologna: Arnaldo Forni.
- SANTUCCI, A. (1963). *Il pragmatismo in Italia*. Bologna: Il Mulino.
- VAILATI, G. (1971). *Epistolario: 1891-1909*. Ed. by G. Lanaro. Torino: Einaudi. (L)
- \_\_\_\_\_ (1987). *Scritti*, 3 v. (Scritti di filosofia: S I; Scritti di scienza: S II; Scritti di scienze umane: SIII). Ed. by M. Quaranta. Bologna: Arnaldo Forni. (S)
- \_\_\_\_\_ (2003). *Gli strumenti della ragione*. Ed. by M. Quaranta. Padova: Il Poligrafo. (SR)
- \_\_\_\_\_ (2009). *Logic and Pragmatism: Selected Essays by Giovanni Vailati*. Ed. by C. Arrighi et. al. Stanford, CA: CSLI Publications, 2009
- VAILATI, G.; CALDERONI, M. (1918) *Il pragmatismo*. Ed. by G. Papini. Lanciano: Carabba.

**Endereço / Address**

Giovanni Maddalena  
University of Molise  
Department of Human and Social Sciences  
Via de Sanctis  
86100 Campobasso - Italy

Data de envio: 20-6-2009

Data de aprovação: 12-1-2010