Peirce's influence on Haack's reflections on the nature of logic

A influência do Peirce nas reflexões de Haack sobre a natureza da lógica

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Abstract: In her book *Deviant Logic* (1974), Susan Haack argued for a "pragmatist" conception of logic. This conception holds that, (i) logic is a theory on a par with other scientific theories, differing only from such theories by its degree of generality and (ii) the choice of a particular logic is to be made based on pragmatist principles, namely, economy, coherence, and simplicity. This view was contrasted, in this book, with an "absolutist" view of logic, according to which logical laws are necessary and immune to revision. Two decades later, however, Haack acknowledged, in the Introduction to an enlarged version of the same book, that she would not approach the question of the revisability of logic in the same way she did earlier. What was missing in her first book was a distinction between the question of the necessity of the laws of logic and the question of our fallibility in recognizing which are *the true laws of logic* and *what structures are essential to representation*. She also acknowledged that this change was mainly influenced by Peirce, with whose work she had "only the most superficial acquaintance twenty years ago". In this context, this paper has two aims: (1) to show that, in *Philosophy of Logics*, we can find elements that reveal a tension between her early "pragmatic" views and her changing views on the nature of logic; (2) to present some hypotheses about the role Peirce may have had in this change.

Keywords: Haack. Logic. Peirce. Pragmatism. Revisability of logic.

Resumo: *Em seu livro Deviant Logic (1974), Susan Haack defendia um conceito "pragmatista" de lógica. Esta concepção sustenta que, (i) a lógica é uma teoria em pé de igualdade com outras teorias científicas, diferindo apenas de tais teorias por seu grau de generalidade e (ii) a escolha de uma lógica particular deve ser feita com base em princípios pragmáticos, a saber, economia, coerência e simplicidade. Esta visão foi contrastada, nesse livro, com uma visão "absolutista" da lógica, segundo a qual as leis lógicas são necessárias e imunes à revisão. Duas décadas depois, porém, Haack reconheceu, na Introdução de uma versão ampliada do mesmo livro, que não abordaria a questão da possibilidade de revisão da lógica da mesma forma que fizera anteriormente. O que faltava em seu primeiro livro era uma distinção entre a questão da necessidade das leis da lógica e a questão de nossa falibilidade no reconhecimento de quais são as verdadeiras leis da lógica e quais estruturas são essenciais para representação. Ela também reconheceu que essa mudança foi influenciada principalmente por Peirce, com cujo trabalho ela tinha "há vinte anos apenas o conhecimento mais superficial". Neste contexto, este trabalho tem dois objetivos: (1) mostrar que, na Filosofia das Lógicas, podemos encontrar elementos que revelam uma tensão entre suas primeiras visões "pragmáticas" e suas visões em mudança sobre a natureza da lógica; (2) apresentar algumas hipóteses sobre o papel que Peirce pode ter tido nesta mudança.*

Palavras-chave: *Haack. Lógica. Peirce. Pragmatismo. Revisabilidade da lógica.*

1 Introduction

In her book *Deviant Logic* (1974), Susan Haack argued for a "pragmatist" conception of logic. This conception holds that, (i) logic is a theory on

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a par with other scientific theories[1], differing only from such theories by its degree of generality and (ii) the choice of a particular logic is to be made based on pragmatist principles, namely, economy, coherence, and simplicity. This view was contrasted, in her book, with an "absolutist" view of logic, according to which logical laws are necessary and immune to revision. Two decades later, however, Haack acknowledged, in the Introduction to an enlarged version of the same book (1996), that she would not approach the question of the revisability of logic in the same way she did earlier. What was missing in *Deviant Logic*, according to her, was a distinction between the question of the necessity of the laws of logic and the question of our fallibility in recognizing which are *the true laws of logic* and *what structures are essential to representation*. She also acknowledged that this change in her thought was mainly influenced by Peirce, with whose work she had "only the most superficial acquaintance twenty years ago" (HAACK, 1996, p. ix-x).

In this context, the present paper has two aims. The first is to show how, in her famous book *Philosophy of Logics* (1978), we can find elements that reveal a tension between her early "pragmatic" views and her changing views on the nature of logic. Secondly, I will briefly try to present some hypotheses about the role Peirce may have had in this change.

2 Susan Haack's *Philosophy of Logics*

In the preface of *Philosophy of Logics*, Haack acknowledged that the ideas put forward in *Deviant Logic* needed to be modified in two respects. The second one is unimportant for our purposes, but the first deserves full quotation:

> I have, I hope, made the distinction between metaphysical and epistemological questions about the status of logic rather clearer; and this has led me to distinguish more carefully between the question of monism versus pluralism, and the question of revisability, and to support a qualified pluralism rather than the monism somewhat confusedly assumed in *Deviant Logic*. (HAACK, 1978, p. xiv).
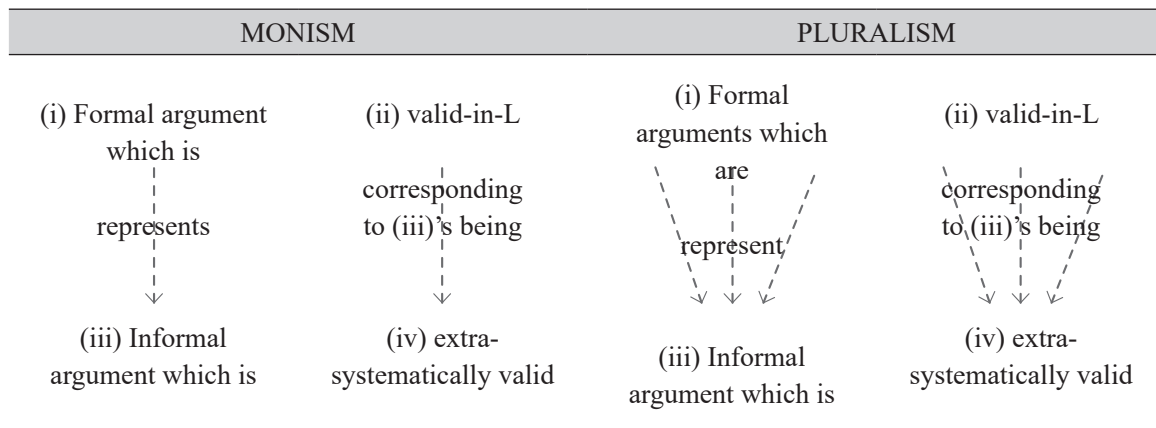
This avowal is surprising for at least two reasons. First: it is very hard to see how the pragmatic conception of logic defended in *Deviant Logic* could be presented as a monism (even qualified as "somewhat confusedly assumed"). Monism is defined in *Philosophy of Logics* as the view according to which there is just one correct logic. But the "pragmatist" conception of logic argues that the dispute between logics is not to be made in the dogmatic arena, where the criterion for winning is correctness, but in the pragmatic arena, which has its own criteria according to pragmatic principles. Thus, it is difficult to understand how there could be any defense of logical monism in *Deviant Logic*. Second: it seems that the distinction between metaphysical and epistemological questions about the status of logic, instead of merely leading Haack to a more coherent position, also serves to highlight some problems left there unsolved, as I shall now show.

I start by describing the three views contrasted in the last chapter of *Philosophy of Logics*: instrumentalism, monism, and pluralism. Instrumentalism is characterized by Haack as the view that defends that there is no extra-systematic conception of validity that logic intends to capture. Monists and pluralists, by contrast, argue for the existence of such an extra-systematic conception of validity. They differ, however, in that the monist thinks that there is only one formal system which captures this extra-systematic notion, whereas the pluralist allows for the possibility of multiple logical systems capturing it. There is also a distinction between global and local pluralists, according to whether a system of logic

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1 The view that logic is a theory that is on a par with other scientific theories is known today as "anti-exceptionalism" about logic. This term was coined by Williamson (2007) to describe, more generally, his view about the method of philosophy, which included logic. Haack's view in *Deviant Logic* is, thus, a forerunner of anti-exceptionalism about logic.

aims or not at being applicable irrespective of the domain of application. However, the dispute between monists and local pluralists tends to be, as Haack convincingly argues (HAACK, 1978, p. 222), merely verbal.[2] For this reason, I shall concentrate on the dispute between monists and global pluralists.

For the sake of brevity, I will mention only a single point of disagreement between monists and (global) pluralists, which is the following: given a certain informal argument, the monist will say that there is only one formal argument which faithfully represents it, whereas the pluralists will say that nothing precludes the existence of multiple formally adequate representations of the same informal argument, i.e., of adequate representations of the same argument in different formal systems of logic. Haack pictures this disagreement by the following diagram:

MONISM		PLURALISM	
(i) Formal argument which is	(ii) valid-in-L	(i) Formal arguments which are	(ii) valid-in-L
represents	corresponding to (iii)'s being	represent	corresponding to (iii)'s being
(iii) Informal argument which is	(iv) extra-systematically valid	(iii) Informal argument which is	(iv) extra-systematically valid

An important point that must be emphasized is that, according to global pluralism, there cannot be two correct logical systems that disagree about the validity of the same informal argument, but only two correct logical systems that represent the same valid/invalid argument in different ways. This is because this position shares with monism the belief that there is only one extra-systematic notion of validity to be captured.

In the last chapter of *Philosophy of Logics*, Haack acknowledges that she is inclined to favor global pluralism (HAACK, 1978, p. 230). However, there are many passages in the initial chapters of the book that do not cohere very well with this position. Consider, as a paradigmatic example, the following passage:

> One uses intuitive judgments [of validity] of some arguments to construct a formal theory which gives verdicts, perhaps quite unexpected verdicts, on other arguments; and one might eventually sacrifice some of the original judgments to *considerations of simplicity and generality*. (HAACK, 1978, p. 33, *my emphasis*).

I wish to make two remarks about this passage. First: the idea that we can abandon some of the original judgments to favor considerations of simplicity and generality and, thus, to "pragmatist" considerations seems to conflict *prima facie* with the idea that there is an extra-systematic conception of validity we aim at capturing. According to monism and global pluralism, no matter how complicated a formal system is, this system will be correct if and only if it captures this extra-systematic conception of validity. Therefore, we could never simply abandon an intuitive judgment to favor the benefit of simplicity: it will never be a sufficient reason. As Haack puts it, no matter how convenient or fruitful a logical system might be, "if one could infer 'A and B' from 'A', this would, or so it seems to me, be *no* reason to prefer a system which represented that inference as valid" (HAACK, 1978, p. 227-228). Second: suppose that we have two arguments A and B that are pre-systematically judged both as valid.

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2 This is so because a pluralist who considers that every domain of application admits a specific logic is not in disagreement with a monist that considers these logics as fragments of *the* correct system of logic.

Pragmatist criteria do not rule out the possibility of there being two formal systems S_1 and S_2 equally simple which disagree about the validity of these arguments, one presenting A as valid and B as invalid and the other presenting B as valid and A as invalid. But accepting both S_1 and S_2 as correct would be incompatible with monism/pluralism.

Other passages of Haack's 1978 book go in the same direction: it is said that sometimes "one needs to ask whether the gains in simplicity and generality compensate for the discrepancy" between informal arguments and their formalized version[3], and that sometimes we need to estimate "the relative costs and benefits" of abandoning a more natural translation of some informal arguments to adopt a simpler logic.[4] In some further passages (see *e.g.,* p. 232), everything happens as if we could be content with instrumentalism at the level of the *epistemology* of logic, while, at the same time, in need of choosing between monism and pluralism at the level of the *metaphysics* of logic. Revision in logic would be made possible not because the laws of logic are not necessary, but because our fallibility in recognizing which is(are) the correct system(s) of logic. But if this is the case, then nothing prevents us from adopting a system in which one could infer "A and B" from "A" if the "relative costs and benefits" are worth it. Conversely, if we shall never abandon some inferences as valid/invalid, i.e., if we have independent criteria (other than pragmatist ones) for choosing between logics, then our methodology of research could not be instrumentalist at all. Instead, it would have to be faithful to those criteria.

It is, thus, tempting to conclude that, in *Philosophy of Logics,* we can find elements that reveal a tension between her early "pragmatist" view and her changing views on the nature of logic. This tension would not be wholly surprising, since the book is based, as she acknowledges, on lectures she gave about the philosophy of logic given since 1971 (and, thus, three years before the publication of *Deviant Logic,* a book in which Haack defends, as we said earlier, a "pragmatist" conception of logic).

In the following, I will briefly try to present some considerations about the role Peirce may have had in this change.

3 Peirce's influence

Besides the Introduction to the enlarged version of *Deviant Logics*, an important clue for the relevance of Peirce's works to Haack's mature conception of the nature of logic is the Introduction to the part entitled Deduction and Logical Truth of the same book. There she writes as follows:

> I would now prefer to put the question of the justification of deduction as: what are the grounds of the laws of logic? in virtue of what are they laws? And I now think that, like Quine's and, to a lesser extent, Dummett's, my approach to these questions was too narrowly concerned with language. Peirce (e.g., CP 5.318ff. (1868); 2.227ff. (ca. 1897)) has persuaded me that the answers lie deeper: in *what it is to be a sign*. And this suggests a friendly reconstrual of Dummett's puzzle. The principles of logic, whether or not they are necessary, are not trivial or merely verbal. Once again, Peirce is illuminating; see especially [NEM], IV, 82ff., 1892. (HAACK, 1978, p. 182).

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3   I quote the relevant passage in full: "One should recognise, then, that a failure on the part of a formal system to represent *all* the knobs and bumps of the informal arguments it systematises is not necessarily objectionable. On the Other hand, one must be wary of assuming that *all* adjustments are acceptable; one needs to ask whether the gains in simplicity and generality compensate for the discrepancy. Some of the knobs and bumps of English may be important". (HAACK, 1978, p. 34-35).

4   I quote the relevant passage in full: "I am doubtful whether the question, whether 'The present King of France is bald' should be accounted false or truth-valueless could, or even should, be settled by appeal to 'what we would ordinarily say'. The issue turns, rather, on whether one is prepared to tolerate some artificiality (either, in the case of Russell's theory of descriptions, in the translation from natural languages into the formalism, or, in the case of Frege's preferred theory, in the choice of referent for otherwise non-denoting expressions) in order to conserve bivalence, since the Fregean 'presupposition' theory advocated by Strawson would require a non-bivalent base logic. And, if, of course, one thought there were other reasons for doubting bivalence, this would be relevant to one's estimate of the relative costs and benefits". (HAACK, 1978, p. 68-69).

In this passage, Haack explicitly mentions three works by Peirce that have persuaded her that the fundamental questions of the philosophy of logic depend on the question: "what it is to be a sign?" or, as she put earlier in the same book, "what structures are essential to representation?". They are:

1. Grounds of validity of the laws of logic: further consequences of four incapacities (1868).
2. Division of signs (ca. 1897, second chapter of book 2 of the *Elements of logic*).
3. The critic of arguments (1892, part C of Fermatian Inference and DeMorgan's Syllogism of Transposed Quantity).

I confess I could not understand how the third text mentioned could illuminate the idea that "the principles of logic, whether or not they are necessary, are not trivial or merely verbal", mainly because what is discussed there is the status of geometrical propositions, and nothing is said about the laws of logic. In the first article, by contrast, the connection between its content and the questions on the foundation of logic is more transparent. Haack even uses a quotation from this article as the epigraph of *Deviant Logic*:

> [I]t is quite possible that a person should doubt every principle of inference […] though hough a logical formula may sound very obviously true to him, he may feel a little uncertain whether some subtle deception may not lurk in it. Indeed, I certainly shall have, among the most cultivated and respected of my readers, those who deny that those laws of logic which men generally admit have universal validity. But I address myself, also, to those who have no such doubts… (CP 5.318).

We can take at least two lessons from this passage: first, that doubts about the principles of logic are possible, even when these principles may sound "very obviously true" to us; second, that the possibility of doubting the principles of logic does not lead us necessarily to a skepticism about these principles. Indeed, what Peirce intends to do in this article is precisely to offer an explanation of the validity of the laws of logic, even being aware that this explanation is in some sense circular. Peirce's ultimate reason for the legitimacy of this explanation is that its convincing force in this case suffices, because he is not trying to persuade absolute sceptics or men who have fictitious doubts but addressing people who already argue well while not entirely conscious of the principles of reasoning. According to Peirce:

> It will be said that my deduction of logical principles, being itself an argument, depends for its whole virtue upon the truth of the very principles in question; so that whatever my proof may be, it must take for granted the very things to be proved. But to this I reply, that I am neither addressing absolute sceptics, nor men in any state of fictitious doubt whatever. I require the reader to be candid; and if he becomes convinced of a conclusion, to admit it. There is nothing to prevent a man's perceiving the force of certain special arguments, although he does not yet know that a certain general law of arguments holds good; for the general rule may hold good in some cases and not in others. A man may reason well without understanding the principles of reasoning, just as he may play billiards well without understanding analytical mechanics. If you, the reader, actually find that my arguments have a convincing force with you, it is a mere pretense to call them illogical. (PEIRCE, 1869, p. 193).

Peirce's argument presupposes that we already use those principles of reasoning and, thus, that we do have an extra-systematic concept of validity, even though it is possible that we are not entirely conscious of the laws that govern this concept. Therefore, the principles of logic are not "trivial", in the sense that anyone recognizes them immediately as true. They are also not "merely verbal", in the sense that disputes about these principles are not truly meaningful.

Finally, the second text opens with a very clear summary of Peirce's conception of logic:

> Logic, in its general sense, is, as I believe I have shown, only another name for *semiotic* ({sémeiötiké}), the quasi-necessary, or formal, doctrine of signs. By describing the doctrine as "quasi-necessary," or formal, I mean that we observe the characters of such signs as we know, and from such an observation, by a process which I will not object to naming Abstraction, we are led to statements, eminently fallible, and therefore in one sense by no means necessary, as to what *must be* the characters of all signs used by a "scientific" intelligence, that is to say, by an intelligence capable of learning by experience. (CP 2.227).

The identity Peirce establishes between logic and semiotic is well-known, and I will not touch on this subject here, nor do I think it is relevant for the question I am trying to answer, namely, Peirce's influence on Haack's reflection on the nature of logic.[5] What is important in the passage above is the idea of a "quasi-necessary" doctrine". This idea is, I think, the key to understand Haack's insistence on separating two views amalgamated by what she described in *Deviant Logic* as an "absolutist" view of logic, namely, that logical laws are (i) necessary and (ii) immune to revision.

Peirce explain this idea as follows. First, he remarks that the process by means of which we are led to statements from the observation of the characters of signs is "eminently *fallible*", and thus these statements are "*in one sense* by no means necessary". This suggests in turn that the principles of logic are also fallible and subject to revision. However, *in another sense*, they are necessary, namely, in the sense that they are statements as to what *must be* the characters of all signs used by a "scientific" intelligence. This, in turn, coheres well with Haack's insistence in separating the ideas of (i) the necessity of logic and (ii) its being immune to revision. Haack's suggestion is that we can keep (i) while rejecting (ii). So, under this account, the truths of logic, while prone to revision, are about structures which, as Haack says, are essential to representation *simpliciter* (there is no representation that does not obey such principles). This makes clear, I think, Peirce's contribution to Haack's change of view with regard to the nature of logic.

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5   Haack even acknowledges not being an expert on Peirce's semiotics, cf. Haack (2014, p. 89).

List of Abbreviations*

The works of Charles S. Peirce are cited as follows:

Collected Papers of Charles Sanders Peirce: volume (v) and paragraph (p) (CP v.p).

The New Elements of Mathematics: volume (v), page (p) (NEM v:p).