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Well, and Pragmatism?
Comment on Michael Heidelberger's Paper

Michael Heidelberger suggests that "we are witness today of a renewed interest in the history of philosophy of science, especially of the 19th century". This statement involves a broad historical perspective and asks not only that we take a deeper look into the philosophy of science of the age of Helmholtz and Mach, of Poincaré and Hertz, but also that we consider them and other leading figures of the time in the context – as Heidelberger correctly says – of national traditions (such as that of France or even Italy) and within a more articulated historical background.[1] I agree in particular with the proposal for "comparative studies in the history of philosophy of science". The transfer of ideas from one country to another during the 19th century represents a crucial historical issue for our research and may contribute to a new interpretation of the history of philosophy of science, not only during the "long century", but also in regard to the "short" one, i.d. looking forward – broadly speaking – to our present debates and our philosophical agendas.

Heidelberger offers very stimulating considerations about the "nostalgic return" to Kant that can be noted today and suggests that philosophers such Friedrich Albert Lange can be read in a different perspective. His great work on the *History of Materialism* was actually a *Standardwerk* for almost two generations of philosophers of science; and as Wilhelm Dilthey wrote in 1877, Lange's *opus magnum* was destined to remain a book marking a turn point in the philosophical debate of late 19th century.[2] But the *History of Materialism* was a very important reference for Carnap, Reichenbach and Schlick still in the age of early Logical Empiricism. Though it may seem strange, we can read in the third issue of *Erkenntnis* an enthusiastic portrait of Lange, one of the few philosophers who was able – according to the editors of his correspondence with Anton Dorn – to engage in a dialogue with the natural sciences and to acquire in this sense the great «merit» (quite similar to the Marburg School of Neo-Kantianism) to have rediscovered "Kant as a natural scientist", in opposition to the metaphysical interpretation of

1 Among recent publications on this issue I would like to mention the stimulating collections of essays Jean-Claude Pont / Laurent Freland / Flavia Padovani / Lilia Slavinskaia (Eds.), *Pour comprendre le XIXe. Histoire et philosophie des sciences à la fin du siècle*. Firenze: Olschki 2007 and Michael Heidelberger / Friedrich Stadler (Eds.), *History of Philosophy of Science. New Trends and Perspectives*, Dordrecht–Boston–London: Kluwer 2002.

2 Wilhelm Dilthey, *Gesammelte Schriften*, vol. XVII, *Zur Geistesgeschichte des 19. Jahrhunderts*, ed. by U. Hermann, Göttingen: Vandenhoeck & Ruprecht 1974, p. 101.

F. Stadler (ed.), *The Present Situation in the Philosophy of Science*,
The Philosophy of Science in a European Perspective, DOI 10.1007/978-90-481-9115-4_6,

Kant's philosophy endorsed by "professional philophers". It will be useful to remember, that such a praise of Lange was drawn from no less than Rudolf Carnap and Hans Reichenbach.[3]

Otherwise it is well known that Neokantianism, first of all the Marburg Neokantianism of Cohen, Natorp and Cassirer, but also the Neokantianism of Alois Riehl or, to some extent, of Hans Vaihinger, had a great influence on the philosophy of science which starts its journey at the Vienna Station. Historical and systematic reconstructions – in the case of Carnap it will be enough to remind you of the contributions of Alan Richardson and Andre W. Carus – show in a very exciting way how the received view and the current geneaologies of Logical Empiricism must be corrected within the framework of another story.[4] That story starts from scientific Neokantianism and reformulates some crucial aspects of this tradition in a really revolutionary new perspective. But the breakdown of the older world in every revolution is more complicated than a mere farewell to the previous age or, in this case, to previous conceptual tools. In my opinion, Neokantianism was in this context not only a philosophical stream, but a branch of late 19th century philosophy of science that, first of all in the German speaking world, was very influential on, and at some length was elaborated from, the leading scientists in their own work.[5] There was a time, to put it differently, in which a great physicist as Heinrich Hertz was able to read *Kant's Critique of Pure Reason* or his *First Metaphysical Principles of Natural Science* after long hours of hard laboratory work, obviously not as a "moral holiday" from his scientific engagement.[6] If our historical and philosophical task is the contextualization of philosophy of science as well as of epistemological frameworks elaborated in the late 19th century, it seems unavoidable to elucidate the assimilitation within philosophy of science of the Kantian and Neo-Kantian heritage, or – to quote Michael Friedman's statement – to describe

3 I refer to „Dokumente über Naturwissenschaft und Philosophie. Briefwechsel zwischen Friedrich Albert Lange und Anton Dohrn", in: *Erkenntnis* 3, 1932/33, pp. 262-300 (quotation from pp. 262-263).

4 Alan W. Richardson, *Carnap's Construction of the World. The "Aufbau" and the Emergence of Logical Empiricism*, Cambridge: Cambridge University Press 1998 and Andre W. Carus, *Carnap and Twentieth-Century Thought. Explication as Enlightenment*, Cambridge: Cambridge University Press 2007.

5 For an excellent overview on this topics see Michael Friedman/Alfred Nordmann (Eds.), *The Kantian Legacy in Nineteenth-Century Science*, Cambridge (Massachusetts)–London: The MIT Press 2006. See also Massimo Ferrari, "Il Kant degli scienziati: immagini della filosofia kantiana nel tardo Ottocento tedesco", in: Giusppe Micheli (Ed.), *Momenti della ricezione di Kant nell'Ottocento*, Milano: Franco Angeli 2006, pp. 183-201. For the philosophy elaborated by scientists more generally, see the noteworthy book by Erhard Scheibe, *Die Philosophie der Physiker*, München: Beck 2007.

6 Heinrich Hertz, *Erinnerungen, Briefe, Tagebücher*, ed. by Mathilde Hertz and Charles Susskind, San Francisco: Physik Verlag 1977, p. 190.

"how the original Kantian position was successively transformed by a long tradition of scientific thinkers leading all the way up to the present day"[7].

Michael Heidelberger reminds us that we are now also witness "of a revival of American pragmatism", although "less homogeneous than the neo-Kantian camp". This is a very interesting point and I would like to develop some reflections about the transfer of American Pragmatism from Harvard to Europe and, particularly, to Italy on the one side and to Vienna on the other. I think that the list of scientist-philosophers or philosophers of the late 19th century that Heidelberg cites as fruitful teaching material (Mach, Helmholtz, Poincaré, Duhem, Lange or even Bergson) can be enriched by the name of a leading figure of Pragmatism: William James.

The standard view of the topic "Pragmatism and European Philosophy of Science" is well known. According to it, the emigration of Logical Empiricism from Germany, Austria and Central Europe between the wars and the intricate process of its alteration in the "new world" created a context in which European philosophy of science was contaminated by North American ways of thinking, especially the tradition of pragmatism. This standard view has indeed overlooked two aspects. On the one side, recent scholarship has showed that the transfer of Logical Empiricism in the U.S.A involved an increasing professionalization of philosophy of science and, at the same time, the lost of the typical political and cultural engagement of its heyday in Vienna.[8] On the other side, and this is much more important for our present perspective, a relationship between European philosophy of science and Pragmatism was established long *before* the intellectual emigration from Europe between the World Wars. Especially James' pragmatistic insights – certainly more James' version of Pragmatism than Peirce's – travelled from America to Europe at the very beginning of 20th century in precisely the opposite direction of the later, more well-known journey from Weimar Germany and 'red' Vienna to American departments of philosophy.

In other words, there is another version of the story of the relationship between Pragmatism and Logical Empiricism which starts at the end of 19th century and whose direction is – paraphrasing the title of Gerald Holton's contribution on "the Americanization of the *Wissenschaftliche Weltauffassung*" – from Harvard Square to the Vienna Circle.[9] A brief account, particularly, of the reception of William James' pragmatism within European philosophy of science would un-

7 Michael Friedman, "History and Philosophy of Science in a New Key", in: *Isis* 99, 2008, p. 133.

8 See the illuminating reconstruction offered by George A. Reisch, *How the Cold War Transformed Philosophy of Science. To the Icy Slopes of Logic*, New York: Cambridge University Press 2005. Important contributions on this topic can be found also in Gary L. Hardcastle/Alan W. Richardson (Eds.), *Logical Empiricism in North America*, Minneapolis-London: University of Minnesota Press 2003

9 Gerald Holton, "From the Vienna Circle to Harvard Square: The Americanization of a European World Conception", in: Friedrich Stadler (Ed.), *Scientific Philosophy: Origins and Developments*, Dordrecht–Boston–London: Kluwer 1993, pp. 47-73.

doubtedly deal with Mach and his entourage in Vienna. As Holton points out, James' "philosophy of Pragmatism, developed in the first instance as a way out of a personal struggle that has been called James' 'Kant crisis', overlapped with Machian empiricist position in many ways, for example, in finding the meaning of ideas in the sensations that may be expected from their realization".[10] To be sure, James was well acquainted with Mach's works which he had read carefully, making annotations, marginalia, queries and so on; and, particularly, James was deeply interested not only in Mach's *Analyse der Empfindungen*, but also in his book on *Mechanik*, especially Mach's famous discussion of Newton's views on time, space and causality[11]. For his part, Mach was indeed a convinced supporter of James' work on *The Principles of Psychology*, but on the other hand his disagreement with Pragmatism as philosophical orientation was quite clear: an interesting proof of his critical evaluation may be found in a letter to Anton Thomsen from January 1911.[12]

Nevertheless, the connection James-Mach suggests first of all another connection which has to do with both the American thinker and the Viennese scientist. We mean the Italian philosopher of science and language Giovanni Vailati, a former collaborator of Giuseppe Peano's *Formulario mathematico* and a convinced supporter of Mach's historical and epistemological work, who was also engaged, at the very beginning of the century, to endorse a "logical pragmatism" quite different from the "magic pragmatism" of his friend Giovanni Papini. Vailati had a great admiration for Peirce and his pragmatic rule of meaning (i.e. the rule formulated by Peirce in his seminal essay "How to Make Our Ideas Clear"), but he also was aware immediately of the *epistemological* relevance of the *Jamesian* pragmatism. In his reviews both of *The Will to Believe* and some years later of James' famous *Pragmatism*, Vailati emphazises James' great merit of having offered a certain rehabilitation of «the *constructive* and *anticipating* activities of human understanding». According to Vailati, James was right to criticise as the common understanding scientific and philosophical truth has underestimated this aspect and consequently has endorsed an image of mental activity which is limited to a mere classification and, so to speak, a recording of empirical data. In Vailati's opinion, James is in this respect perfectly in agreement with the recent "logic of science", namely with the analyses developed by Mach, Clifford and others of the methods, history and principles of modern science. On the other hand, Vailati underlines the epistemological importance of James' critical assessment of positivism as well as of the sometimes «narrow-minded» philosophy nourished by the

10 Holton, "From the Vienna Circle to Harvard Square", loc. cit., p. 50.

11 Holton, "From the Vienna Circle to Harvard Square", loc. cit., p. 51.

12 *Ernst Mach als Außenseiter. Machs Briefwechsel über Philosophie und Relativitätstheorie mit Persönlichkeiten seiner Zeit*, ed. by J. Blackmore and K. Hentschel, Wien: Braumüller 1985, p. 86 („Der Schwerpunkt seiner Arbeit liegt gewiß in seiner ausgezeichneten Psychologie. Mit seinem Pragmatismus kann ich mich nicht ganz befreunden").

scientists. According to Vailati, James is perfectly right in emphasizing the crucial role in the scientific inquiry of audacious formulations of hypotheses;[13] similarly, he points out that James has recognized better than any other philosopher of science the function of belief for the scientific method.[14] Broadly speaking, Vailati appreciates the pragmatic view according to which scientific knowledge is always the result of a *mental construction*, whereas the empirical, factual basis seems to be not as foundational and unavoidable as the (positivistic) standard view tends to suggest.[15]

The great merit of Vailati seems to have been to have understood, quite unlike his contemporaries, that James was elaborating a version of Pragmatism that was in no way to be thought of as a mere voluntaristic or even "irrationalistic" philosophy. And we may recognize that Vailati's suggestions are correct. In his book on *Pragmatism*, indeed, James offers a short but very illuminating account of contemporary philosophy of science. Mach, Duhem and Poincaré – says James – are "teachers", according to which "no hypothesis is truer than any other in the sense of being a more literal copy of reality. They are all but ways of talking on our part, to be compared solely from the point of view of their *use*."[16] Moreover, James gives an holistic account of what means the acquisition and growth of truth within the historical process of knowledge which seems undoubtedly 'up to date' to a reader well acquainted with the following philosophy of science from Neurath to Quine[17]. James says, for instance:

> [A] new idea is […] adopted as the true one. It preserves the older stock of truths with a minimum of modification, stretching them just enough to make them admit the novelty, but conceiving that in ways as familiar as the case leaves possible […] New truth is always a go-between, a smoother-over of transitions. It marries old opinion to new fact so as ever to show a minimum of jolt, a maximum of continuity. We hold a theory true just in proportion to its success in solving this "problem of maxima and minima"[18].

James is fully convinced that an anti-foundationalist account of knowledge is required when we want to take into account that our thinking develops in quite a different way from that offered by traditional philosophy since Descartes:

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13 Giovanni Vailati, *Scritti*, Firenze: Seeber & Barth 1911, p. 270.

14 Regarding Vailati's position within European philosophy of science between 19th and 20th century I would like to refer to my book *Non solo idealismo. Filosofi e filosofie in Italia tra Ottocento e Novecento*, Firenze: Le Lettere 2006, pp. 141-164.

15 Vailati, *Scritti*, op. cit., p. 283.

16 William James, *Pragmatism. A New Name for Some Old Ways of Thinking*, Cleveland and New York: Meridians Books 1963, p. 125.

17 On James and Quine see I. Nevo, "James, Quine, and Analytic Pragmatism", in: R. Hollinger / D. Depew (Eds.), *Pragmatism. From Progressivism to Postmodernism*, Westport (Connecticut)–London: Prager 1995, pp. 153-161

18 James, *Pragmatism*, op. cit., pp. 50-51.

To begin with, our knowledge grows in *spots*. The spots may be large or small, but the knowledge never grows all over: some knowledge always remains what it was […] Our minds thus grow in spots; and like grease-spots, the spots spread. But we let them spread as little as possible: we keep unaltered as much of our old knowledge, as many of our old prejudices and beliefs, as we can. We patch and tinker more than we renew. The novelty soaks in; it stains the ancient mass; but it is also tinged by what absorbs it. Our past apperceives and co-operates; and in the new equilibrium in which each step forward in the process of learning terminates, it happens relatively seldom that the new fact is added *raw*. More usually it is embedded cooked, as one might say, or stewed down in the sauce of the old. New truths thus are resultants of new experiences and of old truths combined and mutually modifying one another[19].

We may consequently affirm that Vailati was right in emphazising the epistemological core of James' Pragmatism: this makes him an excellent exception in the philosophical landscape at the beginning of 20th century in Europe. But there is another meaningful historical circumstance that supports the relevance of Vailati in this context. In September 1908 Vailati was in Heidelberg in occasion of the Third International Congress of Philosophy. The European quarrel about pragmatism started just there, in the section of the Congress devoted to the discussion of Ferdinand Schiller's talk about the pragmatic theory of truth. The critical reaction of the German philosophical establishment towards the "yankee" philosophy just arrived in Europe was extremely unfavourable and the debate following Schiller's lecture was, according to the congress report, very lively.[20] It is noteworthy, however, that the only participants to the Congress being in agreement with the pragmatic method in philosophy were Vailati and a philosophical outsider from Vienna, Wilhelm Jerusalem. In the same year as the Congress in Heidelberg Jerusalem published a very good German translation of James' *Pragmatism* and wrote a highly interesting preface to it. First of all Jerusalem expressed the hope that James' contribution could be welcome in Germany and be able to renew its philosophic spirit. In the second place he underlined that Pragmatism was not a system, but a method, which finds its centre of gravity in the refusal of a priori, a sacred place for German philosophers. Finally, Jerusalem claimed that the pragmatist view of truth – which is here by no means associated with the "yankee" spirit of dollar pursuit – ought to be integrated into the historical investigations of the growth of knowledge and into his "sociology of knowledge" – which studies truth as a "social condensation" – thus achieving a convergence of Pragmatism and sociology.[21] In the same year of

19 James, *Pragmatism*, op. cit., pp. 112-113.

20 Theodor Elsenhans (Ed.), *Bericht über den III. Internationalen Kongress für Philosophie zu Heidelberg*, Heidelberg: Winter 1909, pp. 711-740.

21 Wilhelm Jerusalem, „Vorwort des Übersetzers", in: William James, *Der Pragmatismus. Ein neuer Name für alte Denkmethoden*, übersetzt von W. Jerusalem, Leipzig: Klinkhardt 1908 pp. V, VIII-IX . We must also remember his paper „Soziologie des Erkennens" published in May 1909 in *Die Zukunft* (and available also in Wilhelm Jerusalem, *Gedanken und Denker. Gesammelte Aufsätze. Neue Folge*, Wien und Leipzig: Braumüller 1925, pp. 140-153).

1908, Jerusalem took up such an alternative view of Pragmatism supporting it in a paper, which represents, so to speak, the missed road of German reception of Pragmatism. He confirmed his struggle against apriorism and presented Jamesian Pragmatism as the irreplaceable ally in order to offer an alternative solution to Kant's theory of knowledge. Furthermore, he strongly insisted - on the basis of their common view of biologic roots of human mind - on James' and Mach's affinities, thus drawing an ideal axis between Vienna and United States, a move which appeared to aim at avoiding the encumbering defensive wall of German *Geist* [22].

A closer account of Jerusalem's contribution to the discussion about the philosophy of pragmatism as well as about its theory of truth and knowledge in the German speaking culture at the beginning ot 20th century goes beyond the limits of the present comment. It must nevertheless be emphazised that Jerusalem represented the essential connection between American Pragmatism and the future Viennese Logical Empiricism, not only due to his mediation between James and German speaking culture, but more specifically due to his relationship with Otto Neurath, a crucial figure in the history of the Vienna Circle. If their personal connections are still to be documented in detail, it is not hard to suppose that Jerusalem – who was active in Vienna not only in the strictly academic environment, but also in wider intellectual circles, in the press and in cultural associations well represented in the Austrian capital during Neurath's early years – was well-known also to the future promoter of the "left Vienna Circle".[23] It was not by accident that Neurath mentions Jerusalem not only in a late work of 1935, *Le développement du Cercle de Vienne et l'avenir de l'empirisme logique*, where he placed him in the main stream of anti-Kantianism typical of both Austrian philosophy and the Vienna Circle, but particularly in a brief text that followed shortly afterwards. There he depicts Jerusalem as the "pioneer (*Vorkämpfer*) of a pragmatist conception", underlying his membership of the characteristic stream of Habsburg thought and especially of Vienna University tradition.[24] Thanks to Jerusalem's mediation, therefore, a connection seems to have taken place between Pragmatism and Logical Empiricism. While well-known in its general outlines, it would be better described in Neurath's case by the light of a certain ideal filiation James-Jerusalem-Neurath, as

22 See Wilhelm Jerusalem, „Der Pragmatismus. Eine neue philosophische Methode", in: *Deutsche Literaturzeitung*, 29, 25. Januar 1908, coll. 197-206 (republished in: *Gedanken und Denker*, op. cit., pp. 130-139). On Jerusalem and Pragmatism see Ludwig Nagl, „Wilhelm Jerusalems Rezeption des Pragmatismus", in: Michael Benedikt / Reinhold Knoll / Cornelius Zehetner (Eds.), *Verdrängter Humanismus – verzögerte Aufklärung*, vol. V, *Im Schatten der Totalitarismen*, Wien: Fakultas Verlags-und Buchhandels AG 2005, pp. 344-353.

23 See the documentation available in Thomas Uebel, *Vernunftkritik und Wissenschaft: Otto Neurath und der erste Wiener Kreis*, Wien–New York: Springer 2000, esp. pp. 164-167, 292-295.

24 Otto Neurath, *Der Logische Empirismus und der Wiener Kreis*, in: Otto Neurath, *Gesammelte philosophische und methodologische Schriften*, ed. by R. Haller and H. Rutte, Wien: Hölder-Pichler-Tempsky 1981, vol. II, p. 742.

long as the convergence of his anti-fondationalist epistemology and the outcomes of American Pragmatism from Peirce to Dewey is recognised.[25] It short, it would not be implausible to claim that many issues characterising Neurath's philosophy (mainly in the 1930s) are at least in agreement with both James' Pragmatism and its "enlargements" proposed by Jerusalem *sub specie* the sociology of knowledge. There was a place also for James and for the one who has brought him to light in the German-speaking philosophical culture at the beginning of twentieth century on Neurath's famous boat, to use his metaphor for inquiry and knowledge as always travelling through the sea of history unable to assume a *tabula rasa* or build on a certain foundation once and for all.[26]

All this has obviously to do with an "image" of James quite different from the image that was widely dominant in early 20th century. He was in no way the philosopher supporting the *yankee* way of thinking deplored by his most prominent German colleagues at the time of the International Congress of Heidelberg. James was rather a philosopher of late 19th century who was perfectly aware of his commitment to recent philosophy of science. In his essay *Humanism and Truth* (1904) James pointed out how deeply the pragmatistic way of thinking was connected with the increasing transormations in exact and natural science during the last decades.

> As I understand the pragmatist way of seeing things, it owes its being to the break-down which the last fifty years have brought about in the older notions of scientific truth. "God geometrizes", is used to be said; and it was believed that Euclid's elements literally reproduced his geometrizing. There is an eternal and unchangeable 'reason'; and its voice was supposed to reverbeate in *Barbara* and *Celarent*. So also of the "laws of nature", physical and chemical, so of natural history classification – all were supposed to be exact and exclusive duplicates of pre-human archetypes buried in the structure of things, to which the spark of divinity hidden in our intellect enables us to penetrate. The anatomy of the world is logical, and its logic is that of a university professor, it was thought. Up to about 1850 almost everyone believed that sciences expressed truths that were exact copies of a definite code of non-human realities. But the enormously rapid multiplication of theories in these latter days has well-night upset the notion of any one of them being a more literally objective kind of things than another. There are so many geometries, so many logics, so many

25 On Neurath and Pragmatism see Thomas Mormann, „Neuraths anticartesische Konzeption von Sprache und Wissenschaft", in: Elisabeth Nemeth / Richard Heinrich (Eds.), *Otto Neurath: Rationalität, Planung, Vielfalt*, Wien–Berlin: Oldenbourg Verlag-Akademie Verlag, 1999, pp. 32-61 (Mormann however ignores James' influence on Neurath). For a brief mention of the connection Jerusalem-James see Nancy Cartwright, Jordi Cat, Lola Fleck, Thomas Uebel, *Otto Neurath: Philosophy between Science and Politics*, Cambridge: Cambridge University Press 1996, p. 94 n. 10.

26 Otto Neurath, "Protokollsätze", in: *Erkenntnis*, III, 1932, p. 206. Regarding Neurath's "anti-fondationalistic Pragmatism" see Thomas Uebel, *Vernunftkritik und Wissenschaft*, op. cit., pp. 88, 101 as well as Thomas Uebel, "Otto Neurath, the Vienna Circle and the Austrian Tradition", in: A. O'Hear (Ed.), *German Philosophy since Kant*, Cambridge: Cambridge University Press 1999, pp. 257, 267.

physical and chemical hypotheses, so many classifications, each one of them good for so much and yet not good for everything, that the notion that even the truest formula may be a human device and not a literal transcript has dawned upon us. We hear scientific laws now treated as so much 'conceptual shorthand', true so far as they are useful but not farther. Our mind has become tolerant of symbol instead of reproduction, of approximation instead of exactness, of plasticity instead of rigor[27].

We may well ask if this and similar statements can be read as providing another reason for looking at 19th century philosophy of science in the nostalgic, but also fruitful way proposed by Michael Heidelberger. I would like to suggest that James and some of its supporters such as Vailati or Jerusalem provide the occasion for a stimulating case study that offers to us a good opportunity to achieve new insights into the past and, starting from a reconsideration of this neglected interaction, into the future of the history of philosophy of science.

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27 William James, "Humanism and Truth", in: *The Meaning of Truth. A Sequel to Pragmatism*, Cambridge-Massachusetts: Harvard University Press 1975, p. 206