Introduction

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Few contemporary philosophers, if any, have had such leading roles in such diverging institutions as the so-called Stanford School of Philosophy of Science (also home to Patrick Suppes and Nancy Cartwright, among others) and the Collège de France (*Chaire de philosophie et histoire des concepts scientifiques*, 2001-2006) – the latter recalling the Chair held by Michel Foucault in the same institution (*Histoire des systèmes de pensée*, 1970-1984). Few others, like Ian Hacking, have successfully undermined the Analytic/Continental divide, by working on the "trading zones" between these two strands, and forged their conceptual instruments by drawing these latter from different sources and applying them to widely diverse philosophical debates, across natural, social and medical sciences: debates ranging from the problem of induction and proofs and deduction in mathematics to the theories of meaning and truth as well as to the controversy between realism and constructivism in natural and social sciences. It would be difficult to find a debate of the main philosophical schools in the last fifty years that Hacking has not tried to assimilate or to contribute to.

Hacking dedicated four books to probability and statistical reasoning, and they are among his most famous works: *The Emergence of Probability* (1975) decisively contributed to introduce probability as a topic into the history and philosophy of science; *The Taming of Chance* (1990) was included by the Modern Library among the 100 most important 20th century non-fiction works, along with the books of a few other philosophers, such as E.G. Moore, Karl Popper, John Rawls and Thomas Kuhn. *Representing and Intervening* (1983) has become a classic of Hacking's production and it focuses on the philosophy of natural and experimental sciences. *Rewriting the Soul* (1995) and *The Mad Travelers* (1998) are Hacking's main contributions to the history and philosophy of psychology and dissociative disorders. He also wrote a great number of papers and essays on widely diverse topics and problems, ranging from ultracold atoms to child abuse and the poverty threshold.

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In one of his most recent interviews, Hacking remarked that Ludwig Wittgenstein and Michel Foucault – two of the philosophers who had most inspired his own philosophy – were "classicized" in a short span of time (Hacking 2014). Hacking intended to highlight how easily philosophers' lively and multifaceted research can be transformed into "history" by their interpreters and commentators. Eventually, Hacking will also be historicized by his interpreters, although perhaps to a lesser degree. Indeed, Hacking's work, like that of his great predecessors mentioned above, has been able to be of interest to a wide range of audiences. Hacking's case studies and, even more, the methodological approach on which they are based, have affected not only philosophy but also psychology, sociology and anthropology, among others. Such a variety is due not only to his insatiable curiosity, but even more to the fact that, according to Hacking, the object of philosophy should be found outside the field proper to philosophical traditions. As Georges Canguilhem would argue, "philosophy is a reflection for which all unknown material is good, and we would gladly say, for which all good material must be unknown" (*Le normal et le pathologique*, 1966). Sciences are *par excellence* the raw material of philosophy, because they allow us to study human reason not in the abstract, but at work, that is, through its most refined productions.

Hacking's production is so rich and varied that it would be fruitless to search for a single overarching theme. And still, most of his projects seem to arise from a same concern, which could be well resumed by the following, apparently naïve, question: how can reason have a history? Or better: how can reason have a history and still aim at being objective? In other terms, how can the objective and scientific status of our claims be, if not weakened, at least redefined by the acknowledgement of their historical and therefore provisional nature? Since the 1990s, Hacking has presented his overall philosophical project as in conformity with Kant's aim to make explicit the conditions of the possibility of objectivity. The defining trait of Hacking's inquiries is that they show how these conditions develop historically. And this should not be considered as a simple *addendum* to Kant. It is rather a challenging task to keep the validity of rational claims together with their historically contingent nature. In this respect, it is in Bourdieu's *Pascalian Meditations* that Hacking finds a particularly appropriate way to explicate this fundamental question:

> We have to acknowledge that reason did not fall as a mysterious and forever inexplicable gift, and that it is therefore historical through and through; but we are not forced to conclude, as is often supposed, that it is reducible to history. It is in history, and in history alone, that we must seek the principle of the relative independence of reason from the history of which it is the product (Bourdieu 2008: 25).

This Focus aims to discuss precisely the problems raised by Hacking's version of Bourdieu's "rationalist historicism". In particular, the first two papers by David Hyder and Manolis Simos-Theodore Arabatzis directly approach the question of the *historical* nature of Hacking's philosophy. Hyder's paper frames Hacking's philosophy within what he calls "analytical historical epistemology", of which he provides a conceptual, albeit critical, genealogy. According to Hyder, Hacking would belong to those philosophers and historians of science who, like Nelson Goodman and Thomas Kuhn, embarked on the daunting task of historicizing and naturalizing Kant, opening up to a set of philosophical positions which are, by the same token, empiricist, nominalist and pragmatist. Hyder's insightful reconstruction assigns a central role to Goodman's riddle of induction and his notion of "entrenchment", which are both central references for Hacking who, however, did not articulate the link between such a twofold interest and his *historicized* philosophy of science. When he claims that concepts "have a memory" and that their meaning lies not in their extension but in the trajectory of their past uses, Hacking indirectly confirms Hyder's understanding of analytic historical epistemology as a form of historical inductivism of concepts (Hacking 2004: 8, 37). It should be noted that Hacking never endorsed a self-description as historical epistemologist, and, perhaps more importantly, he explicitly distanced himself from pragmatism (Hacking 2007). He also does not seem to neatly fit into the nominalist box, because there are also realist elements at work in his philosophy. However, the aim of Hyder's paper is to create a large frame in which Anglo-American philosophical debates come in touch with the discussions of the history of science and "Continental" historical epistemology. By showing that Continental historical epistemology preserves normativity, but cannot convincingly account for its ontology, and that the Anglo-American version is provided with an ontology, but cannot convincingly account for its normativity, the dilemma brings to light a tension that has remained too often unnoticed.

In their paper, Simos-Arabatzis argue that Hacking's works instantiate an historical philosophy of science. Their perspective is based on Hacking's reflections on styles of scientific reasoning, a project that constitutes the backbone of his methodology and which, since its first implementation in the 1980s, has catalyzed theoretical discussions and inspired the research of several historians of science. The authors frame Hacking's considerations on scientific styles within the long-standing debate over the "marriage" between history and philosophy of science, animated in particular by Anglo-American scholars such as Roland Giere, Ernan McMullin and Larry Laudan and others, at least since the publication of Kuhn's *Structure of the Scientific Revolutions*. They convincingly show that Hacking's writings constitute an example of in-

ternal combination of history and philosophy of science, in which the historical and philosophical perspectives fully complement each other and are not merely assembled as pre-given building blocks, as in the main "confrontation model" dominating Anglophone HPS. Contrary to Hyder, they see Hacking as eschewing the prevalent naturalizing trend of HPS and rather opting for a hermeneutic approach in which philosophy provides "a coherent and enlightening ordering of the [historical] record" whose aim is to address those philosophical concerns that may be particularly relevant for our present. The authors engage in a detailed discussion of which conditions may ensure scientific stability and criticize Hacking for not being able to reach a middle ground between complete contingency or randomness and inevitabilism in explaining the stability of scientific styles. In their view, the ahistorical, realist and inevitabilist aspects of Hacking's historiography are connected with the metaphysical quadruple relation of truth, language, meaning and belief, which they consider as a trait of the last phase of his project on styles. In this regard, perhaps, Simos-Arabatzis agree with Hyder, who recalled styles of reasoning and Kuhn's paradigms or disciplinary matrixes as inevitable transcendental reminders of differently naturalized frameworks.

The third and fourth papers examine in more depth the topic of stability as a feature that characterises some sciences more than others, despite (or thanks to) their being historical. Both papers link this specific feature to experimentation and to the "self-vindicating" aspects proper to laboratory science, especially referring to its ability to induce the creation of new phenomena. Massimiliano Simons and Matteo Vagelli discuss Hacking's claim to have fostered a "Back-to-Bacon movement" by introducing experiments as a philosophical subject in the 1980s. They show that Hacking's claim was not isolated and that many other philosophers, historians of science and sociologists expressed similar considerations in the same years. The claimed novelty of the philosophy of experiment is usually taken for granted and rarely discussed with a deeper examination of the larger philosophical aims of its upholders. Although in their analysis the authors question the accuracy of this "invention narrative", they do not conclude that Hacking would have therefore not relevantly contributed to the philosophy of experiment nor that the increased interest in experiments in the 1980s should be dismissed as historically uninformed. They rather encourage a reevaluation of the way we assess the history of the philosophy of experiment and Hacking's position in it. The authors devote particular attention to Hacking's realist argument in favor of the existence of experimental entities and show the function that this argument plays with respect to the different debates into which it enters. The "contextualist narrative" which they propose shows, among other things, that in science there is a kind of stability that can

be reached through the accumulation of experimental results and techniques, which, precisely like the styles of reasoning, cut across different theoretical frameworks. This kind of stability, which is not achieved "in spite of" but rather thanks to historicity, is more apt than the idea of linear progress and that of revolutionary breaks to account for the relative steadiness of natural sciences, at least since the last revolutions of the first half of the 20th century. Hacking finds reasons to believe that Gaston Bachelard's philosophy of experiment and his notion of *phénoménotechnique* at least partially inspired this idea, thus showing that experimental themes run across historical epistemology, broadly understood.[1]

In her paper, Jacqueline Sullivan applies Hacking's ideas on stability to the cognitive sciences, which Hacking himself has relatively neglected, except for rare references, in which he points out that cognitive sciences are mainly sciences that "represent" and do not "intervene". On the contrary, Sullivan shows the plethora of experimental activities through which cognitive neuroscience attempts to draw from rodents' behavior useful insights into human cognitive functions as well as into neuropsychiatric and neurodegenerative impairments. Sullivan's paper provides further evidence to Hacking's claim, also discussed by Simons and Vagelli, that "experiments have a life of their own" and that stability can be reached rather at a level of intervention than at a level of theory and auxiliary hypotheses, as occurred in Duhem's coherentist thesis. Sullivan provides considerable evidence to support the idea that cognitive sciences can reach stability not "despite" but precisely because of their disunited and dispersed character. Such a stability can be reached locally through a "mutual maturing of types of apparatus, phenomena and theories", despite the general lack of conceptual, methodological and explanatory unity that still characterizes cognitive sciences. The study of the same cognitive function can benefit from the diversity of epistemic standards (including background assumptions, methods, vocabularies and materials) applied to it. It is argued that together with the idea of intertheoretical reduction we should also abandon the idea of unity as the search of a single system of scientific classification of natural kinds. "Cognitive kinds", i.e. the cognitive functions under experimental investigation, are phenomena which are created in laboratory settings and whose existence is as fleeting as that of the electron in the cloud chamber. Sullivan does not question the fact that they are real, but interestingly shows that for them, too, stability is given by disunity, that is, by letting fundamentally different practices and methods successfully develop.

[1] See Bachelard's "The dialogical philosophy", presented for the first time in English translation in the Past Present section of this issue of *Philosophical Inquiries*: 231-240.

Albeit well-known and widely inspiring, Hacking is still rarely studied, and his wide-ranging production has not yet received an accurate and comprehensive analysis. This Focus aims to precisely fill this gap, by providing one of the first extensive studies dedicated to Hacking's philosophy. It does not wish, however, to cover all the philosophical areas to which he has possibly contributed, neither does it aim, more generally, to provide a commentary nor an exegesis of his works. By collecting papers by both established and young scholars, this Focus rather intends to explore why Hacking has so largely influenced the field of history and philosophy of science. Analysing Hacking's contribution to 20th century attempts to bring together history and philosophy of science as well as discussing his arguments on scientific stability, the Focus tackles, from different perspectives, the question of the historicity of reason. Without aspiring to definitive answers, this Focus wishes to open up lines of further research *on* Hacking's works as well as *along* their path.

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