

Transversal: International Journal for the Historiography of Science, 1 (2016) 116-119  
ISSN 2526-2270

[www.historiographyofscience.org](http://www.historiographyofscience.org)

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## Interview: Joseph Agassi<sup>1</sup>



Joseph Agassi is an Israeli scholar born in Jerusalem on May 7, 1927. He has many books and articles published contributing to the fields of logic, scientific method, foundations of sciences, epistemology and, most importantly for this Journal, in the historiography of science. He studied with Karl Popper, who was definitely his biggest influence. He taught around the world in different universities. He currently lives in Herzliya, Israel. For his important contribution to the historiography of science, we chose to open the first issue of this journal with this interview recognizing his importance for the field, as well as paying our homage to him.<sup>2</sup>

Prof. Joseph Agassi at Lille (France) in July 2015

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**Interviewed by** Mauro L. Condé<sup>3</sup>, Raffaele Pisano<sup>4</sup> and Michael Segre<sup>5</sup> in September 2016.

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Mauro Condé (M.C.), Raffaele Pisano (R.P.) e Michael Segre (M.S): *Transversal: International Journal for the Historiography of Science* promotes scholarly research in the historiography of science and chronicles its history and criticism. You were one of the first scholars to give a systematic attention for the historiography of science. Many years after your classic *Towards an Historiography of Science* of 1963: where is the current historiography of science heading towards?

Joseph Agassi: There are healthy interests in the positive role of criticism in the history of mathematics (beginning with the studies of John Oulton Wisdom and of Imre Lakatos), and of science (beginning with Koyré and Cohen). There is also a healthy interest in external and internal histories and their interrelations, and also in the mutual influences of personal and intellectual traits of researchers (as in my *Faraday as a Natural Philosopher*). There is an increasing interest in the

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<sup>2</sup>For a general approach of Agassi's ideas and interpretations on science, philosophy, and society, see: (Agassi, 2000, 2005, 2008, 2017), (Segre, 2004). <http://www.tau.ac.il/~agass/pub.html>

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accord and discord of researchers' views about science and their research activities. Science is a part of the general culture and it should be presented this way. The canons of social and of political history should help writing better histories of science. Finally, it is time to get freed of the exaggerated view of the impact of the Manhattan Project on science in general—as viewed by Derek Price and Thomas Kuhn.

M.C., R.P., M.S.: You have a long and successful career, could you tell us a little bit about the most important moments in your trajectory?

Joseph Agassi: My first meeting with Popper was a great joy. (See my *A Philosopher's Apprentice: In Karl Popper's Workshop*.) The early publication of my view of institutional individualism achieved great success. My works on it are till cited. The publication of my *Historiography of Science* put me in position that surprised me. Almost all of my publications were well received even though not well sold. (The only exception are the successful sales of the Japanese translation of my *The Continuing Revolution: a History of Physics from the Greeks to Einstein* and the almost total oversight of my papers on economics, which I am proud of nonetheless: I am the first to have offered a comprehensive proof of the quantity equation of money or better quantity theory of money.) I am proud of my improvement of the wording of the theory of the social contract and thus of liberalism, as well as of my advocacy of liberal nationalism, which is a defence of the modern liberal nation-state (*Liberal Nationalism for Israel*). My only paper in physics, on the Kirchhoff-Planck radiation law, has still been cited in the research literature after half-a-century!

M.C., R.P., M.S.: You are one of the most important former students of Karl Popper. How important was Popper's philosophy for your work? How important is the philosophy of Karl Popper for nowadays?

Joseph Agassi: Meeting with Popper was the best thing that could have happened to me. My studies were all done under his shadow; my contributions were streamlining his philosophy. (This is what both Berkeley and Hume said about Locke.) Einstein, Russell, Popper and Polanyi are the philosophers of the future. The next generation will be that of Wisdom, Gellner, Jarvie, Miller, and Hacothen, all of whom advocated democracy Popper-style.

M.C., R.P., M.S.: Can you summarize in a few words your contribution to philosophy?

Joseph Agassi: I do not know if I have one. I criticized Popper's view that science is unanimous and asserted that there are schools of thought that propose that metaphysical ideas had scientific research programs that rest on them, as Einstein saw it and as Gerald Holton suggested. Classical epistemology required a choice between the a priori and the a posteriori options but not both, as they would lead to clashes; Popper's view welcomes such clashes as they may lead to crucial experiments. I added that corroborations Popper-style are legally required, not scientifically required, even though the value of a theory is enhanced by corroboration as it becomes a greater unifier and makes the search for an alternative more difficult.

M.C., R.P., M.S.: What are the main open philosophical questions today?

Joseph Agassi: What exactly is the approximation to the truth that Einstein, Russell and Popper postulated? Are there competing series of approximations?

M.C., R.P., M.S.: And what about science and technology? What are the main open philosophical questions concerning science and technology, today?

Joseph Agassi: How does a new theory increase technological options? We have many examples but no theory for it. Will such a theory improve technology? How? What are the best democratic controls of the side-effects of technology?

M.C., R.P., M.S.: With respect to the past and the current century, did your key of investigation in History and Philosophy of Science change?

Joseph Agassi: Decidedly. The revolution in physics got most philosophers who study science on the problem of induction.<sup>6</sup> Their contribution is nil. The future will comprise critical examinations of Popper's solution to this problem.

M.C., R.P., M.S.: Generally speaking, the exact sciences (precisely physics and mathematics) have been organized and well known, have been located in strongly competing historico-philosophical research programs, for example those of Mach, Koyré, Kuhn, Popper-Lakatos, and yours. These have all stressed the importance of the use of historical/epistemological/logical categories for inquiry about, and interpretation of, the history and philosophy of the exact sciences. A question arises: what does the history of these attempts, and the history and philosophy of the wider historiography of the sciences, suggest about overcoming the clash of these programs and the merely piecemeal accretion of individual studies of the exact sciences?

Joseph Agassi: The most important contribution of historians of science was to purge the view that mistakes are to be ignored. Inductivist historians cannot say that Copernicus considered the sun the center of the world system; they ascribed to him the view that the sun is the center of the solar system, which system could not appear before Bruno. They also cannot say that the center of Newton's solar system is not the center of the sun. Taking seriously the idea of science as series of approximations to the truth, renders all this obvious. When I wrote my *Historiography*, I deemed it trivial and was surprised by its success. It amuses me that historians of science who acknowledge the value of philosophy for their research call me "Kuhn".

M.C., R.P., M.S.: Since classical antiquity, the relationship between science and religion has been a subject of study, mainly addressed by philosophers, epistemologists, theologians and scientists. The understanding of this relationship has depended on different factors, such as cultures, historical epochs and geographical localities, and it is also motivated by different ideas (reason, empiricism, evidence, and revelation, faith, purity, etc.). Do you think that history of science had been/could be (universally) of help in this debate, and without producing contrast among personal beliefs? Therefore, is really philosophy an adequate language between *sciences* and *religions*, and *reasons* and *faiths*?

Joseph Agassi: Fallibilism renders conflicts between science and faith quite unnecessary. Traditional Judaism precludes such a conflict, and traditional—pre-Trento or pre-Bellarmino—Catholicism held a similar position. This was the view of Galileo, and it is now official. Finally, historians of science should attend very critically to the marvellous but vague theory of the siblinghood of humanity and the humane but questionable claim that faith in it is the foundation of science.

M.C., R.P., M.S.: Thank you very much!

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<sup>6</sup> Inductive process of reasoning (within Popper's epistemology and Agassi's time) were a manner to proceed to investigate the science in the history of science (especially of physics). For example, where no *ad absurdum* proof was in a theory, then only deductive theorems (especially for axiomatic science) were considered.

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