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Interview: Eduardo Salles de O. Barra¹



Born in Juiz de Fora, MG (Brazil) in 1964, Eduardo Salles de O. Barra is a philosopher of science, and a professor at the Federal University of Paraná (UFPR), where he was a former Dean of Undergraduate and Professional Education and Director of the Human Sciences Sector. He graduated from the Federal University of Juiz de Fora, MG and received his MSc degree and his doctorate in philosophy from the University of São Paulo (USP). He is also the coordinator and one of the primary founders of the *Paraná School of History and Philosophy of Science and Technology*. Eduardo Salles de O. Barra's interests and research focus on history and philosophy of science, education, and

teaching of philosophy. His principal works are on the philosophy of sciences as well as authors, such as Newton, Kant, and Kuhn.

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Interviewed by:

Veronica Ferreira Bahr Calazans² and Mauro L. Condé³ in April 2021

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Veronica Ferreira Bahr Calazans (VFBC) and Mauro L. Condé (MLC): You graduated in philosophy. Likewise, your PhD and teaching career are in philosophy, emphasizing the philosophy of science. Tell us a little about this path in which philosophy was present since at the beginning. How did your interest in philosophy come about? Specifically, how did you become interested in the history and philosophy of science? How were your choices made?

Eduardo Salles de O. Barra: My choice for philosophy was a somewhat unexpected result. I did not have the privilege of taking a philosophy course during high school. During the last years of the military regime (1979-1981), I went to high school, which was still far away from the educational reforms that brought philosophy and sociology to high school. My high school education was in an extraordinary technical school called *Instituto de Laticínios Cândido Tostes*, in Juiz de Fora, MG. This school allowed me

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to have contact with several natural sciences courses at a very advanced level. We had, for example, regular classes in laboratories, where our teachers also conducted research in close connection with the dairy and food industries' productive chain. Parallel to this excellent scientific education, we had intense artistic and cultural activities with lots of music, dance, and theater. This activity invariably had to unfold in politics, reflecting the opening movement initiated during the last military government of General João Batista Figueiredo. It was the fascination for this authentic parallel curriculum that made me, after the first professional internships in the last year of the course, renounce my career as a dairy products technician and continue my academic education at the university, but in an area totally different from the natural sciences and technology. I was absolutely fascinated by the human sciences, which I had discovered through random readings and, above all, long conversations with many of my classmates who had similar interests. I had no idea whether I would go into history, sociology, or philosophy. But I knew that I would be much more fulfilled in any of them than in the dairy industry's everyday life.

My choice fell on philosophy because of my education's second characteristic, which was perhaps even more decisive than my formal schooling years. I was born in a Catholic family, and from a noticeably young age, religious life was immensely fascinating for me. At the end of the 1970s, the emergence of liberation theology and the social movements inspired by it were an epiphany for me. At that time, I met the Dominican friars and was fascinated by the idea of becoming one of them. Despite my immense admiration for the Dominicans – especially the legendary Friar Mateus Rocha, who was rector of the University of Brasilia (UnB) for a short period before the military coup of 1964 – my religious vocation didn't resist the charms of the first months at the university. It was love at first sight, for I didn't really know what the course I had chosen was all about. I had chosen philosophy because I was considering joining the Dominican Order as soon as I could transfer to São Paulo. However, when I found out that I didn't have enough vocation for that, I was totally in love with the university. I kept on studying philosophy, attracted not by what I had learned in classes but by the great cultural and political agitation that the university was going through at that moment, during the first half of the 1980s.

I did my undergraduate studies at the Federal University of Juiz de Fora (UFJF). The Philosophy Department at UFJF was basically made up of professors who were priests or had trained in religious institutions. Professors with doctorates were exceedingly rare. Most of them had received their degrees at Gama Filho University in Rio de Janeiro. The department maintained an intense exchange with that university, so much so that, in those years, I was able to follow the public examination in which Ricardo Velez Rodrigues⁴ was approved. As I said before, UFJF was experiencing intense cultural and political agitation, and I wasn't immune to it. I soon became involved with the student movement and other social movements with political ramifications in the university, aligning myself with the Workers' Party (PT) militants and the so-called Catholic left. For me, therefore, it was a paradox to exercise left-wing militancy and attend the classes of certain professors considered and thought to be conservative and reactionary.

Even more paradoxical, however, was the path that finally led me to the philosophy of science. When I was in the penultimate period of my degree, I received an invitation

⁴Ricardo Velez Rodrigues was one of three ministers of education under the president Jair Bolsonaro's government.

from a didactics professor to give a seminar on the philosophy of science to a group of researchers in science education (predominantly physics). The subject they wanted to discuss was interdisciplinarity. There was no one at UFJF at that time who dominated this subject. It was also widespread for students to conduct the few research seminars held there because, as I had said, most of the faculty had no degrees other than undergraduate; masters and doctors were rare. After much hesitation, I accepted the professor's invitation, mainly because I could count on the help of a former student of UFJF, who at the time was doing his master's degree at the Federal University of Minas Gerais (UFMG). The former student in question was Alfredo Pereira Júnior, now a professor at the State Paulista University, Botucatu (UNESP-Botucatu). Alfredo was in charge of the denser part of the seminar's central theme, while it fell to me to make a more general presentation on the philosophy of science. The authors we chose for this seminar were Gaston Bachelard and Thomas Kuhn. I had never heard of the latter, nor did I know where to begin to study his ideas. In his first course at UFJF, in the subject Cosmology, Ricardo Velez Rodrigues included *The Structure of Scientific Revolutions* in his bibliography. As we were only three students enrolled in his course, he was willing to lend us the books from the reading list.

The reading of *The Structure of Scientific Revolutions* was what made me stay in philosophy and project the continuation of my academic training in the philosophy of science. It was a first reading that I had ever done or would ever do. Amidst the countless examples used by Kuhn – the same examples that today I see scaring most of my students away from the philosophy of science – I could find several points of contact with my natural sciences background during the technical course. The references to experiments, measuring instruments, data collection, etc., were nothing foreign to me and provided me with a key to the speculative universe of the philosophy of science, for which I immediately fell in love with. Three years after this first contact with Thomas Kuhn's ideas, I left for São Paulo to position as a philosophy teacher in the state public school system. I had the conviction that, parallel to my duties at school, I would enroll in a master's program in the philosophy of science. The master's program only took place three years after my first visit to São Paulo. Although it was not precisely a Kuhnian question, my research's theme had only become relevant in the post-Kuhnian context in which we were then living in the philosophy of science of the early 1990s.

VFBC and MLC: How do you understand the interactions between history and the philosophy of science?

Eduardo Salles de O. Barra: Those who, like me, enter the philosophy of science through philosophy have a natural predisposition to welcome, without any difficulty, the Lakatosian motto of mutual dependence between history and the philosophy of science. Philosophical formation and, above all, the support of philosophical problems have an unavoidable reference to the past and tradition, in such a way that the history of philosophy – even for those who distrust Hegelian and structuralist attempts to promote it to the condition of “first philosophy” – is permanently present on the horizon of any incursion into philosophy. It's no different in the philosophy of science. Thus, it didn't require any *tour de force* to accommodate the history of science to the investigative and speculative practices of the philosophy of science. However, I don't consider that the mutual dependence between history and philosophy of science is absolutely symmetrical. By its very nature, philosophy must be more imperative to the historian of science than history would be to the philosopher of science. This is by no means a defense of an aprioristic philosophy of science as practiced by the analytic

philosophy tradition of the 1950s, but rather that the “naturalization” requirement of the philosophy of science – with which I fully agree – can be met by other empirical disciplines distinct from the history of science, such as cognitive psychology, the sociology of knowledge, etc. As for the historian of science not being able to practice his craft without a minimal foray into the problems of the philosophy of science, I think no one has defined it better than Larry Laudan, in his *Progress and its Problems*,

“Scientists rarely leave a full account of how they came to make their discoveries; even when they do, such accounts are often unreliable, because constructed long after the fact. The task confronting the historian is often that of conjecturally recreating lines of argument and influence which lay behind the conclusions which a scientist explicitly propounds. This task of reconstruction is utterly impossible unless the historian has a very subtle sense of what kinds of arguments would be plausible in a given situation. Thus here, as with narration and explanation, the historian’s task requires that he possesses a theory (implicitly or explicitly) about rational belief and rational action.” (Laudan 1977, 167)

VFBC and MLC: In your doctoral dissertation, you studied Newton and Kant. How did you come to this study topic, and what were the main “lessons” gained from the investigation?

Eduardo Salles de O. Barra: This dissertation’s inspiration came to me from reading one of the essays collected in Karl Popper’s *Conjectures and Refutations* (1962). He speculates on the scientific motivations of Kantian transcendental philosophy. When I read this study, I was still very much impacted by reading Kuhn and his attempt to bring together the history and philosophy of science. The problem addressed by Popper seemed to me ideal for carrying out an investigation methodologically inspired by Kuhn. At the time I formulated this project, I was already an assistant professor at the State University of Londrina (UEL). I attended a *latu sensu*⁵ graduation course at the Pontifical Catholic University of Minas Gerais (PUC-Minas) where I was a student of Ivã Domingues, whose *O Grau Zero do Conhecimento* (1991) also greatly influenced my preliminary studies admission to a *stricto sensu* graduation program. This admission finally occurred in 1990, with a project about Newton and Kant’s nexus, as I had initially conceived it. It was a subject that fits very well with the tradition of the history of philosophy studies at the Philosophy Department of the University of São Paulo (USP). Even more, with the research of my master’s advisor, Pablo Mariconda, who had recently published a translation of Galieu’s *Discorsi e Dimostrazioni Matematiche, intorno à Due Nuove Scienze* and had gathered around him a very expressive and talented group of young researchers in the field of history of science. I am very grateful to Pablo for many reasons. One of them was precisely because he made me see that my project was not feasible in the master’s program – even though at that time, master’s degrees were much longer than they are today. I should postpone my project’s full realization by initially dedicating myself only to Newton’s study since no work in Brazil could guide me in selecting themes, sources, and historiographical traditions relevant to Newtonian studies. So I did it. At the end of 1994, I defended my master’s thesis on the origins of the Newtonian theory of gravitation presented in the *Principia* (1687). At the end of my master’s degree, I returned to my classes at UEL. There, I collaborated to create a graduate course in history and philosophy of science, in partnership with my colleague Marcos Rodrigues da Silva, and a research group on

⁵ In Brazil, graduate studies are divided into two types of postgraduate studies – *latu sensu* (a short period course of specialization) and *stricto sensu* (PhD and master’s degree).

science teaching, invited by Sérgio Arruda and Carlos Eduardo Laburu, both from the Physics Department.

I entered the doctoral program only three years after completing my master's degree. Although much more mature, my research theme had remained practically unchanged: the nexus between Newton and Kant. With the Newtonian strand already quite advanced, it was then up to me to go through the readings and develop the Kantian strand analyses. Between Newton and Kant, other philosophers were as or more decisive than Newton for Kantian philosophy's critical and doctrinal outlines. I then dedicated myself to Leibniz and Hume's readings, leaving aside German-speaking philosophers' tradition (Wolff, Lambert, Baumgarten). Under the guidance of Caetano Plastino, my doctoral dissertation was defended in 2001 under the title: *From Newton to Kant – the method and metaphysics of natural science*.

Among the “lessons” that one could point to from this work, I highlight the attempt to bring together the history of philosophy and the history of science, which practically drove my entire education throughout the 1990s. This connection was still rare among us at that time. There were not many people doing systematic and professional studies on this interface between philosophy and science from a historical perspective. The reception of Daniel Garber's works among Descartes researchers was still very nascent. The same was true of Michel Friedman's works among Kant scholars. These authors were my main inspirations for what I had accomplished in those years, besides Larry Laudan and his proposal for a history of the philosophy of science. I am very excited to see today a growing interest in historical studies exploring the many real and virtual dialogues between science and philosophy, which help to enrich our view of the past of these fields and revise their respective identities.

VFBC and MLC: In terms of history and philosophy of science, your interest, among other topics and authors, turned to Kuhn. Professor Cupani pointed out that Kuhn has become a new kind of classic. Could we still expect a renewal of epistemology from Kuhn's works or has the interest in his philosophy become merely historical?

Eduardo Salles de O. Barra: My research is testimony that Cupani's diagnosis is correct. I believe that interest in the history of science would be much weaker without the surprising results that Kuhn was able to derive from his historical studies. He has often renewed and expanded the possibilities of the history of science as an interpretive discipline of past and current scientific practices. And, in my view, he only did so because he applied Laudan's lesson exemplarily: “the historian's task requires that he possesses a theory (implicitly or explicitly) about rational belief and rational action” (Laudan 1977, 167). But in any case, I don't think that the Kuhnian heritage has been exhausted. It's surprising that his essays collected in *The Road since Structure* (2000), more than twenty years after its first publication, have hardly attracted philosophers and historians of science. Compared to the enormous, almost instantaneous resonance of *The Structure of Scientific Revolutions* (1962), these essays remain virtually unknown. Unlike *The Structure of Scientific Revolutions*, Kuhn's later writings opposed contemporary mainstream philosophy of science and language represented by Kripke and Putnam. For my part, I think that also the post-*Structure* essays deserve to be better used in confronting recurrent problems in the historiography of science. I am thinking about things such as the myth of universal understanding, naive anti-anachronism, and the preeminence of formalism in scientific theories, among others. Therefore, I believe that Kuhn's ideas still constitute an essential part of what can be conceived as good training in history and philosophy of science.

VFBC and MLC: During your academic training, you were part of Brazil's significant expansion and consolidation of the studies of the history of science from an epistemological viewpoint. – especially in the modern period. How do you evaluate the current scenario in the country regarding these studies? What are the perspectives for young researchers interested in entering this area and, more specifically, in Newtonian studies?

Eduardo Salles de O. Barra: In fact, looking back, I feel privileged to have my education marked by two significant moments in the history of science in Brazil at the end of the 20th century. First, I could attend the legendary *History of Science Colloquiums*, promoted by the *Center for Logic, Epistemology and History of Science* of the University of Campinas (CLE/Unicamp), in the late 1980s. Very few people were professionally dedicated to the history of science in Brazil, and the CLE colloquiums allowed everyone to communicate with everyone broadly and collaboratively. A single round table, for example, could occupy the program for an entire afternoon. Those were other times. Unfortunately, I could not enjoy this environment as a researcher, but I was a diligent listener of two editions of the colloquiums, which contributed a lot to my education. Second, when I entered the USP to do my master's degree in 1990, I actively participated in the seminars led by Pablo Mariconda with his students and other interested scholars. There were as many as four simultaneous seminars, all with weekly editions. Among these seminars, the most outstanding were based on the complete reading of *The Mechanization of the World Picture* (1950), by the brilliant Eduard Jan Dijksterhuis, as well as the seminars based on the study of *The Elements* of Euclid, reconstructing each of the demonstrations in detail. The presentation and discussion of each chapter of Dijksterhuis's fascinating work were presented by each participant (undergraduate, master's, and doctoral students). He or she had in-depth knowledge of the subject examined there – more precisely, the works of a particular scientist from Pythagoras to Newton. In the *Elements* case, the group performed all the demonstrations of the 13 books that make up this monumental work one by one. This exercise was crucial for me to go through the long and complex demonstrations of Newton's *Principia* with a reasonable level of comprehension and understanding of his proof strategies and mathematical methods conceptually.

Although I had some excellent experiences with my students in the same sense with this “collective learning” through seminars, I couldn't offer them something with the same density and formative quality. However, on the other hand, they enjoyed a greater variety of international exchanges from an early age that was very sporadic or did not even exist for my generation. These exchanges allowed them to be more in tune with the debates going on in other countries and gave international visibility to the quality work that, even if isolated, we were doing here in Brazil. Moreover, as I said before, the works of this new generation of historians of science with a philosophical nature and (or) background – or epistemological, as you prefer – started to be better received in institutional circles of philosophy, such as departments, graduate programs, academic associations, and journals. This greater receptivity is due, in large part, to the clever work of cooperation carried out by researchers, mostly graduates of the graduate program in philosophy at CLE/Unicamp, linked to the philosophy departments of USP, Unicamp, the Federal University of Santa Catarina (UFSC), and the State University of Rio de Janeiro (UERJ). In Paraná, although we didn't have a significant event, this collaborative work occurred on a smaller scale in most public universities. Between the years 2002 and 2005, the *Paraná Network of Research in History and Philosophy of Science* united and provided cooperation among researchers and students from some of the central universities in the state, the State University of

Londrina (UEL), the State University of Maringá (UEM), the State University of West Paraná (UNIOESTE), and the Federal University of Paraná (UFPR), with a branch that became increasingly relevant to issues of science teaching in primary education.

VFBC and MLC: In 2010, you were one of the founders and the *Paraná School of History and Philosophy of Science's* primary coordinator. Tell us a little about how this pioneering project was born, how it has developed, and its prospects.

Eduardo Salles de O. Barra: My answer to this question will be almost a corollary of what I have narrated above. At the beginning of this century, we had achieved a very significant institutional presence in philosophy departments and graduate programs. However, it was imperative that this academic production reach a wider audience, even if this was not much more than just recruiting new researchers to the field. From my experience as a professor and advisor, I can see the best talents for the history and philosophy of science usually emerging among those who, to some extent, have had previous training, even if rudimentary, in some scientific area, before a specialized training in philosophy. Usually, these are young people who are somewhat intellectually “bothered” or “misfits” in undergraduate or graduate courses in a particular scientific or technological career. I was a great believer in the old CLE History of Science Colloquium model, particularly its side effects, for recruiting and initiating young people with this profile or related interests in our field. With this in mind, I talked to a group of my students at the time, among them Veronica Calazans, Alex Calazans, Daniel Tozzini, and my colleague in the Philosophy Department, Ronei Mocelin. So, inspired by the experience of the former *Paraná Network of Research in History and Philosophy of Science*, we'd organize a periodic event aimed at training – something that would be a genuine summer school. Thus, we created this event and named it the *Paraná School of History and Philosophy of Science*. Today, it's known as the *Paraná School of History and Philosophy of Science and Technology*, in short, the HFC&T School. Offering a space for the dissemination of original research wasn't the primary goal of the HFC&T School. The goal was to explore the formative potential of this initial research to engage new audiences and new researchers in appropriating our scholarly production. Among these new audiences, our attention turned to primary education teachers, especially in natural sciences. The reason for that was that our proposal was immediately very well received by colleagues in the area of science teaching, both at UFPR and the Federal University of Technology – Paraná (UTFPR), with the participation of Joanez Aires, Nestor Saavedra, Marcelo Lambach, and Awdry Miquelin. In the first editions, the partnership with Paraná's Education Department was also decisive, with the participation of Otoniel Álvaro da Silva and Edson Pegoraro highlighting this engagement.

It all started in 2011. Thereafter, a new edition of the seminar has been held regularly every two years. In 2021, concluding a decade of activities, we continued – albeit remotely – the sixth edition of the event. The formula is quite simple, combining a main course (to which a renowned researcher is invited) and thematic workshops (proposed by university researchers and selected through a public call). The event lasts four days. The main course takes place in the morning on all four days, while the workshops last for two days (eight hours) and take place in the afternoon. On average, 20 workshops are offered. Attendance has ranged from 400 (2013) to 100 (2017) participants. Currently, the HFC&T School is part of a network of similar events proposed by colleagues Mauro L. Condé (UFMG) and Ivã Gurgel (USP). They have organized at their universities events that were inspired by the Paraná experience. The proposal of taking the discussions in this field to a broader public have also resulted in the invitation from

the UFPR's Dean of Graduate Studies (Pró-Reitoria de Pós-Graduação) to offer a course on Philosophy of Science and Technology directed to the most diverse graduate courses at UFPR and other universities consortium members of the program of transversal disciplines (<http://www.prppg.ufpr.br/site/transversais/>), under the auspices of the Superintendence of Science, Technology and Higher Education of Paraná (SETI). In the last edition of the discipline, in 2020, more than 300 graduate students enrolled, coming from the most diverse areas of knowledge and linked to programs based at UFPR, UTFPR, UEM, UNIOESTE, the State University of Ponta Grossa (UEPG), and the Federal Institute of Paraná (IFPR).

VFBC and MLC: Your trajectory as a teacher began in high school. How would you describe the impact of this activity on your higher education experience? Considering your direct involvement in PIBID,⁶ ANPOF⁷/high school, and PROF-FILO⁸ over the last years, how do you think about the insertion of philosophy in high school in Brazil? What are the crucial steps that still need to be taken?

Eduardo Salles de O. Barra: In 1984, I started my teaching career teaching religious education in the Minas Gerais State public school system and philosophy in the private school system. In 1986, one year after graduating, I was approved in a competitive examination for the São Paulo State public school system. The following year, I moved to capital of São Paulo to teach at the Angelo Bortolo Primary and High School. I didn't stay in São Paulo for more than that year. I took a new exam for UEL, in the north of Paraná, and moved there at the end of that year. At UEL, I joined as an assistant professor, the beginning level of the career, since I didn't even have a master's degree at that time. As I said, I entered the master's program at USP only in 1990.

Years later, when I was already at UFPR (to which I transferred in 2002), I resumed contact with high school soon after taking over the undergraduate course coordination in 2009. At that time, I realized that my main task would be to contribute to engaging the philosophy course at UFPR in the great effort that the country was beginning to make to value undergraduate studies. The undergraduate studies hadn't been prioritized until then by the investment expansion policies that universities had increasingly experienced since the mid-1990s. My experience in São Paulo, although short, had made a deep impression. I had the opportunity to participate in pedagogical meetings promoted by the *Coordenadoria de Estudos e Normas Pedagógicas – CENP (Coordination of Studies and Pedagogical Norms)*. There the curriculum of philosophy in high school was discussed with several professors from universities, mainly from USP. My experience in the science teaching group at UEL between 1987 and 2002 had also sharpened my perception of the responsibilities and possibilities of universities' engagement in supporting policies of improvement and expansion of primary education, particularly in the training of teachers and production didactic material.

Therefore, when I took over the coordination of the philosophy course at UFPR in 2009, I had a specific repertoire of interests and projects to be carried out to support the teaching of philosophy in schools. At that time, Paraná had already resumed the teaching of philosophy in high school for at least a decade. Since 2006, through the

⁶ Institutional Teaching Initiation Scholarship Program (PIBID). It is a program of the Ministry of Education of Brazilian Government.

⁷ The National Association of Graduate Studies in Philosophy (ANPOF) is a Brazilian academic organization that brings together graduate courses in philosophy at a master's and doctoral level.

⁸ Professional master's degree in philosophy.

enforcement of state law, philosophy had become compulsory throughout the state. There was an exceptional technical team in the Paraná Department of Education at that time, led by Juliano Orlandi, Bernardo Kestring, and Jairo Marçal. They had conceived, edited, and published an extraordinary work in the field of didactic publications, which was the *Anthology of Philosophical Texts* (2009). With the active participation of other colleagues and nearby state schoolteachers, particularly Luiz Henrique Vieira, Andrea Cachel, Rejane Giacomazzi, and Lucio Lobo, we have started the Translation Workshops. These workshops were aimed at continuing the production of didactic material for the teaching of philosophy in schools, and contributing to expanding the collection of philosophical texts that the *Anthology* has made available to teachers and students. This project was soon incorporated into the philosophy subproject that we submitted to PIBID and received funding through scholarships and grants for the next four years. This funding allowed us to produce and publish the translation with commentaries and didactic orientations of four philosophical booklets by Montaigne, Malebranche, Berkeley, Kuhn, and the Evelyne Rogue's book, *Philosophical Text Commentary*.

This experience with PIBID was the basis for the formulation of the ANPOF-High School proposal, which was requested by Vinícius Figueiredo, the president of ANPOF at the time. Intended to welcome and encourage the participation of philosophy teachers from primary education in the XV National Meeting of Philosophy, which took place in Curitiba in 2012, the ANPOF-High School was conceived as a segment of the event's program. This segment consisted of experience sharing sessions that were reported by primary education teachers, in addition to a plenary session, whose theme was precisely the role of graduate studies in supporting and promoting the teaching of philosophy in primary education. Danilo Marcondes, Felipe Ceppas, and Patrícia Velasco also participated in this plenary session. Felipe and Patrícia are members of the *Philosophize and teach the philosophy* workgroup that, more than a decade ago, brought the agenda of philosophy teaching to the ANPOF meetings and, in a certain way, prepared the path for ANPOF-High School. The symposium's audience was composed of a significant number of members of the *Philosophize* workgroup, joined by an even more notable number of other professors and students linked to graduate programs associated with ANPOF and a significant contingent of primary school teachers. It was a memorable evening. The theater was packed to capacity. The discussions that followed the initial interventions were very heated and propositional. This agitation led to the proposal to create the PROF-FILO – a professional master's in philosophy program in the following 2014 edition of the National Meeting of Philosophy in Campos do Jordão, SP, when the second edition of the ANPOF-High School also took place. In 2017, the PROF-FILO began its activities in 15 public universities in various parts of Brazil with about 200 students.

Today, after the high school reform and the BNCC (Common National Curricular Base), not to mention the recent advent of civic-military schools, it isn't easy to predict the future of teaching philosophy in schools. Here in the Paraná state system, the weekly workload for teaching philosophy has already been reduced by half. I foresee that to contain the advance of this suppression of critical and reflective components within the high school curriculum will be necessary to carry out a mobilization similar to those done between 1980 and 2000. I mean something as was initially led by the former SEAF (*Society of Studies and Philosophical Activities*), culminating with the inclusion of philosophy and sociology in the high school curriculum in 2008. The conservative and reactionary wave attacking Brazilian education gives no signs that it will retreat on its own. It will take a strong reaction and resistance movement to preserve the main

achievements in academic qualification and social inclusion in Brazil's school educational system.

In philosophy teaching, I believe that ANPOF can do and has done a lot in this direction. But in my modest evaluation, we need an entity that will lead this resistance in consortium with ANPOF and, above all, will start to build a positive agenda so that it will be possible to remove all of this accursed inheritance from this conservative and reactionary period. I believe that we already have critical mass for the foundation of a Brazilian society for the teaching of philosophy. Its mission would be precisely to give continuity to the tradition of defense of teaching philosophy initiated by SEAF. What was inherited by the *Philosophize and to teach philosophy* workgroup of ANPOF, expanded with ANPOF-High School and, more recently, institutionalized in graduate studies by PROF-FILO. In this new context, the sense of "defense" needs to go beyond that of resistance and encompass the positive agenda I referred to above: what will become of the teaching of philosophy when all this (or part of it) passes? What should we do now to expedite this future?

VFBC and MLC: Bringing together your two areas of interest (education and epistemology), what is the importance of the philosophy of science in the educational process? In your recent research work regarding didactic publications in philosophy, do you think that the philosophy of science occupies a place that matches its importance?

Eduardo Salles de O. Barra: As someone who did his first studies in philosophy at a time when philosophy was more available on the newsstands – with the incredible editorial success of the magnificent collection *The Thinkers (Os Pensadores)* – than in the universities and schools, I must recognize that we are much better off today than we were in the 1980s. There have been incredibly significant advances, which only became possible with advancing the country's re-democratization process. Since then, philosophy has come to occupy a more prominent space in universities, contributing decisively to the leap in quality that public universities has taken in the last 30 years. During this time, our graduate school system became a world reference, and our undergraduate education expansion policies raised our efforts towards social inclusion to a new level. In schools, I also believe that philosophy has come to occupy prominence and leadership when education for citizenship has become the impetus of educational policies. Evidence of this, in my opinion, is the participation of philosophy in the *National Program of Textbooks (PNLD)* with works signed by some of the most distinguished intellectual leaders in the area, such as Marilena Chaui, Silvio Gallo, Vinícius de Figueiredo, and Juvenal Savian Filho, besides the work of Maria Helena Pires Martins and Maria Lúcia de Arruda Aranha, with their already legendary book, *Philosophizing (Filosofando)*.

In the specific case of the philosophy of science, I believe that its space has also expanded significantly. Previously, I reported the positive repercussions achieved by our HFC&T School also in graduate studies, to the point of becoming a transversal discipline that, in the two semesters that it was offered, it had reached more than 500 graduate students from the most diverse areas of knowledge in the universities of Paraná. At the interface between university and school, I also highlight the place where issues and themes derived from the history and philosophy of science have occupied the curricula components in the area of natural sciences (physics, chemistry, and biology).

However, in didactic publications specific to philosophy, philosophy of science still occupies a subordinate place, usually attached to the unit dedicated to the theory of knowledge or interspersed with discussions on the sociology of science and technology. When it comes to philosophy *tout court*, whether in the school context or some other academic contexts, we all know that the prominent place is always reserved for ethics and political philosophy – the BNCC even repeats this pattern. And the philosophy of science is not the only one to be eclipsed by the school expression of the infamous “return to ethics”. Aesthetics, philosophy of language, philosophy of mathematics, and philosophy of mind are also omitted, among many other philosophical themes with potential citizenship in the school context, due to their affinities with other curriculum components.

All in all, however, I think we have come a long way in bringing the philosophy of science within reach of a wider public. I am very encouraged that factors outside those that are strictly in philosophical circles have been the most decisive for this slow and gradual expansion. These factors greatly favor the task of bringing our internal discussions to the general public. Here, the Deweyan motto for education applies, i.e., the culture as a goal. To the extent that a genuine “scientific culture” is disseminated among us, so the chances are increasing that the expansion of the philosophy of science will be on the academic and school agendas. The current moment, arising from the reactions to the pandemic, of confronting denialism through an emphatic defense of science and its results may, in the future, represent an essential step in this direction.

VFBC and MLC: You have sequentially held, since 2009, three crucial positions in university management: institutional coordinator of PIBID, director of the Human Sciences Sector, and Dean of Undergraduate and Professional Education at the Federal University of Paraná. How does your background in philosophy and, more specifically, in the philosophy of science contribute to the university’s vision that you have led in carrying out these positions?

Eduardo Salles de O. Barra: First of all, after so many years of academic practice in philosophy, I have learned to convert specific professional values into attitudes: suspension of judgment, discursive moderation, and intellectual emancipation. All of these have helped me transition from the academic universe to the management universe without any great upsets. But, as Sartre said, hell is not us; it is the others. Otherness is a constant challenge for every manager: How do my interlocutors think? How should I understand what they say to me? How should I proceed to make myself understood by them? In this respect, to build a language of negotiation with my audience, my expertise in philosophy was also of some relevance. In PIBID, I was greatly favored by my specialization in the history and philosophy of science. Unlike many colleagues in the humanities, I never had any distaste for the teaching and research subject matter nor my colleagues’ methods in the natural sciences and mathematics. Most of the time, I was genuinely intellectually interested in the interlocations with these colleagues. They allowed me to give materiality to ideas that I had collected from my readings in my field of specialization – such as, for example, the Kuhnian thesis of the functional character of “normal” education for the practice of mature science. During my time at the head of the Dean’s Office of Undergraduate Studies, when I also interacted with colleagues from the applied sciences (engineering, health, business, etc.), I could expand this scheme. It greatly facilitated the processes of understanding differences, building consensus, and negotiating.

From a less pragmatic point of view, I think my training has also favored me to always look at problems to their fullest extent. I perhaps brought this ability more from my

historiographical practice than from my philosophical approach. First, I always maintained great respect for the history of the institutions whose management I was responsible for. I was, for example, lucky enough to be at the head of the Human Sciences Sector of UFPR when preparations were made for the celebration of its 80th anniversary. I dedicated myself to reading and studying everything produced about this unit's history, founded under the Faculty of Philosophy, Sciences, and Letters of Paraná (Faculdade de Filosofia, Ciências e Letras do Paraná). The knowledge of this history gave me more security to conduct, among others, the planning processes of its future. Second, the historiographical practice also educated my gaze in the direction of the broadest possible syntheses. So it is this avoidance of a particularized, detailed look, guided by a limited portion of evidence and sources. This holistic gaze has also prepared me to identify, respect, and manage diverse professional and subjective perspectives when dealing with problems. Unfortunately, these principles are not self-applicable. They do not always translate immediately into pragmatic effectiveness. I believe they have lent themselves more to spare me from the misconceptions of dirigisme, partisanship, and dogmatism in the manner of a negative moral. And this, for a manager, should not be considered something negligible.

VFBC and MLC: Thank you very much!

References

- Cupani, Alberto. 2013. Por que ainda Thomas Kuhn? In Condé. Mauro L.; Penna-Forte (Org.), *Thomas Kuhn: A Estrutura das Revoluções Científicas [50 anos]*. Belo Horizonte: Fino Traço.
- Dijksterhuis, Eduard Jan. 1950 [1986]. *The Mechanization of the World Picture*. Princeton: Princeton University Press.
- Domingues, Ivã. 1991. *O grau Zero do Conhecimento*. Belo Horizonte: Loyola.
- Galillei, Galileu. 1634 [1638] *Discorsi e Dimostrazioni Matematiche intorno a Due Nuove Scienze Attenenti alla Meccanica e i Movimenti Locali*. In: Favaro, A. (Ed.) Edizione Nazionale dell' Opere di Galileo Galilei. Firenze: G. Barbera, v. 8. [Tradução brasileira: *Dois novas ciências*. Trad. de L. Mariconda and P. R. Mariconda. Rio de Janeiro/São Paulo: Mast/Nova Stella, 1988]
- Heath, Thomas (ed.) 1956. *The Thirteen Books of Euclid's Elements*. New York: Dover, 3 vols.
- Kuhn, Thomas. 1970. *The Structure of Scientific Revolution*. Chicago: University of Chicago Press.
- Kuhn, Thomas. 2010. *The Road since Structure*. Chicago: University of Chicago Press.
- Laudan, Larry. 1977. *Progress and its Problems*. Berkeley and Los Angeles: University of California Press.
- Newton, Isaac. 1687 [1999]. *The Principia: Mathematical Principles of Natural Philosophy*. Translated by, I. Bernard Cohen and Anne Whitman, assisted by, Julia Budenz. Berkeley: University of California Press.
- Popper, Karl. 1962. *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge.