

Paolo Mancosu

Allegro ma non troppo



Paolo Mancosu was born in Sassari (Italy) on August 22, 1960. As an undergraduate, he studied philosophy at the Catholic University of Milan. He earned his Ph.D. at Stanford University in 1989 with a dissertation entitled “Generalizing classical and effective model theory in theories of operations and classes” written under the guidance of Prof. S. Feferman. He then spent three years at Oxford where he was a Junior Research Fellow at Wolfson College, and a member of the Sub-Faculty of Philosophy. From 1992 to 1995, he worked as an Assistant Professor in the Philosophy Department at the University of Yale. In 1993–94 he spent the academic year at the Technische Universität in Berlin as Humboldt-Stipendiat. Since 1995, he has been at U.C. Berkeley, where he is an Associate Professor of Philosophy. He is the author of several articles and of two books: *Philosophy of Mathematics and Mathematical Practice in the Seventeenth Century* (OUP, 1996) and *From Brouwer to Hilbert. The Debate on the Foundations of Mathematics in the 1920s* (OUP, 1998). His main interests are in mathematical logic, the history of science, and the philosophy of mathematics. – Address: Department of Philosophy, U.C. Berkeley, Berkeley, CA 94720-2390, USA.
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My infatuation with Berlin dates back to the summers I spent here in 1991 and 1992. The infatuation led to a stormy relationship during my fifteen-months stay in 1993–94 as Humboldt-Stipendiat at the Technische Universität in Berlin. This year, it has settled into the comfortable doldrums of a secure marriage.

The real excitement of the year came from living in the Kolleg. I came to the Kolleg under optimal conditions. I had submitted my research project “Philosophy of Mathematics in the 1920s” in the early part of 1994. By the time of my arrival in the Kolleg, in October 1997, the project had been finished and published. This is the reason why, when people asked me whether I was making progress on my project, I would reply

with great confidence that I foresaw no problem in completing it by the end of the year. This made a number of colleagues rather nervous about their work; they were also annoyed by my iron discipline: ping pong in the afternoon and piano in the evening. In the morning I was rarely to be seen.

I will never again play so much ping pong as during this year. In addition to providing a welcome occasion for physical activity, this game brought a lot of Fellows together and gave me a different insight into their personalities. The matches with Ryosuke, Wolf, Tonio, Mushir, and others, have taught me as much about them as the weekly colloquium. They were very different players but had one thing in common: they all wanted to win. I was no exception.

With my tenure at Berkeley recently under my belt, I thought this was the year I could use to improve my piano playing. Most of my evenings from six to seven I spent playing the baby-grand piano generously put at our disposal by the Kolleg. When I decided to take piano lessons – last time I did so was 20 years ago – I was quite nervous. The first chat with my teacher, Klaus Flashar, had the intensity of a psychoanalytic session. He was able to make me overcome my fears and we spent the year playing Bach and Beethoven. Katharina Biegger, who was often there after hours, warmly congratulated me on my piano playing. She seemed sincere.

German lessons were also great fun. Under the expert guidance of Eva Hund, Perry Anderson, Chris Hann, and Ryosuke Ohashi created a formidable environment where everything could be discussed. Discussions ranged widely from general topics, such as Heidegger's involvement with Nazism, to linguistic details such as the meaning of the word "gebongt", the etymological origin of "nüchtern" (it comes from Latin "nox"), and Trapattoni's revolutionary "Ich habe fertig". Of course, there was also time for practicing all sorts of grammatical tricks and our mastery of the subjunctive improved dramatically (Hätten wir das nicht gemacht, wäre das kein echter Sprachkurs gewesen).

What about my role as a speaker for the Fellows? There were very few problems which required my diplomatic skills. Tonio, my co-speaker, took a lot of the work upon himself and he should get most of the credit for the successful *Abschiedsfest*. Nonetheless, I was treated by many to delicious dinners – as Aziz colorfully put it: "You have to suck up to those people". Altan, who coveted a second office and an exclusive penthouse, repeatedly tried to bribe me. He managed when he showed up with a basket of fresh oysters from Brittany. The location of the penthouse cannot be disclosed.

Social life in the Kolleg was intense and rewarding, intellectually and from the culinary point of view. The two things usually went hand in hand. Were I to give a list this would include at least a good 70% of the Fellows

and several members of the staff. I went through periods of pure exhaustion when I longed for an evening alone in front of the TV. Exact measurements of the intellectual satisfaction are not available but the culinary achievements were recorded by my scale. Shame prevents me from reporting the data, but it is available upon request.

Finally, just for the record, I would like to deny all the following allegations:

1. that I was paid double salary by the Kolleg for my activity as official paparazzo;
2. that I was responsible for suggesting “Brezeln” as munchies after the evening lectures;
3. that I used my influence as a speaker to shred the evidence accumulated by the administration against Murat and Huri;
4. that I intentionally lost a decisive game (in the Wiko-Tischtennis-Turnier) against Wolf Lepenies in the hope of getting a second year in the Kolleg;
5. that I provoked Eric into a fist fight by claiming that cockroaches did not share in the beauty of nature.

My academic work involved three different areas of scholarship which have kept me busy in the last ten years. Let me begin with history and philosophy of the exact sciences in the seventeenth century. I spent the first three months at the Kolleg finishing an article for the “Cambridge History of Science” entitled “Optics and Acoustics in the early modern period”. The article describes the developments of these two sciences by emphasizing, in addition to the standard topics, aspects which are usually ignored in standard histories of science. In particular, the acoustic section points out the importance of music theory for the emergence of the physical science of acoustics. Moreover, the optics section attempts to give proper relevance to geometrical optics and the problem of image location. During the same period I also wrote a review essay for *Metascience* entitled “New research in the history and philosophy of mathematics from the Renaissance to Berkeley”. This took the form of a review of seven books that have come out in the period from 1993 to 1998. In the essay I not only present the results contained in these books but I also argue for the relevance of these recent investigations into history and philosophy of mathematics of the early modern period for contemporary philosophy of mathematics. One of the great advantages of being in Berlin for my history of science work was the possibility of regularly seeing Eberhard Knobloch and Raine Daston.

A second area of interest is the philosophy and foundations of mathematics in the 1920s. This was originally the project I submitted to the

Kolleg in 1994. Although my book “From Brouwer to Hilbert. The debate on the foundations of mathematics in the 1920s” had come out in 1997, there were some aspects of the project that I wanted to explore further. Indeed, in my book the approach had been epistemological, with most of the emphasis on the published sources. However, I was also interested in studying more closely the historical development of the foundations of mathematics in the 1920s. For this reason I spent the summer of 1997 working at the Wissenschaftshistorisches Archiv of the ETH in Zürich. There I was able to study the *Nachlässe* of Paul Bernays and Hermann Weyl, two major figures for the development of mathematics in the 1920s. A visit to the Felix Kaufmann Archiv in Konstanz at the end of June 1997 revealed the existence of a rich collection of manuscript material relevant to my topic. I thus conceived of collecting most of the manuscript sources relevant to my topic. During my year at the Kolleg, I twice visited the Hilbert archive in Göttingen and ordered materials from the Carnap and Reichenbach archives (Konstanz), from the Gödel archives (Princeton), and from the Behmann archive in Erlangen. My work was greatly facilitated by the tremendous help I received from the librarians of the Kolleg. Although parsing the many kilograms of photocopies I ordered will still take a long time, I was able to write two papers by exploiting the above archival work. The first paper is entitled “From Russell to Hilbert: Behmann on the foundations of mathematics”. It aims at filling a gap in the literature on the foundations of mathematics in the 1920s by showing that Russell’s influence on Hilbert can be studied through an analysis of a long unpublished dissertation by Heinrich Behmann, written in 1918. I also argue for the relevance of Behmann’s work for an understanding of Hilbert’s programme. The dissertation is still preserved at the University Library of Göttingen, but I was able to work on it in the quiet of my office in Berlin. Another piece of evidence in the file for the canonization of Frau Bottomley and Frau Buck. A second paper, “A note on the early reception of Gödel’s theorem”, concerned the very immediate reaction to Gödel’s revolutionary incompleteness results in the wake of the announcement of the incompleteness of arithmetic Gödel made in Königsberg in late 1930. My note looks at how several philosophers of mathematics, including Behmann, Carnap, Kaufmann, Herbrand, and von Neumann, reacted to these revolutionary discoveries by Gödel. The note makes use mostly of unpublished materials I had found in my archival work.

I now come to the project on “Mathematical Explanation”, which constitutes my major focus of research at the moment. The topic of explanation in mathematics has received so far very little attention. This is surprising, especially in light of the fact that even a quick perusal of contemporary literature in the philosophy of science shows that the topic of

scientific explanation is central to the field. However, a few philosophers of mathematics such as Steiner, Resnik, and Kitcher seem to have no doubts that mathematical explanations exist. In my talk at the Wissenschaftskolleg, I discussed the literature on the topic and pointed out shortcomings in the existing accounts of mathematical explanation, both in their theoretical efforts and because of their lack of historical perspective on the subject. In particular, to argue for my thesis, I presented in detail a number of examples drawn from seventeenth-century mathematics. My research during this year was focused on the theories of mathematical explanation presented by Bolzano and Cournot in the nineteenth century. I was able to complete a paper entitled “Bolzano and Cournot on mathematical explanation“, which I presented at a workshop on Bolzano in Paris. In the paper I show that Bolzano’s theory of *Abfolge* and Cournot’s emphasis on the opposition between *ordre logique* and *ordre rationnel* not only resemble each other but also have the same Aristotelian origin and can be both interpreted as theories of mathematical explanation. This paper completes the part of my project concerned with the epistemology of mathematical explanation up to the nineteenth century.

In addition to the above, I wrote a couple of reviews and gave 16 lectures in seven different countries. I promise I will never do that again!

Of course, the dry account given above cannot in the least give a sense of how much I learned from many of the other fellows. Carl’s tales about Musil, Michael’s reflections on Proust and Mann, Wolf’s monologues on the DDR, Alain’s surprising views on human nature, to name only a few, will remain with me for a long time.

Finally, I would like to conclude with warm thanks to the staff of the Kolleg. They have most of the merit for having made this year so exceptional.

One last word. If the above report strikes you as an unlikely combination of lightheartedness and scholarly earnestness, then I have managed to convey what the year felt like.