

## Berkeley under John Heilbron

In the fall of 1982, I arrived at UC-Berkeley with a French fellowship for perfecting my formation in history of science. I had just gotten a PhD in Paris on the history of quantum field theory, but this was amateur work without proper training in the methods of history. I thought Berkeley would be the ideal place to at last learn the true trade of a historian of modern physics. John Heilbron then was the director of the Office for History of Science and Technology (OHST), which he had founded in 1973. With Thomas Kuhn, Paul Forman, and Lini Allen, he had earlier contributed to the project of Sources for the History of Quantum Physics (SHQP), which produced an enormous database of manuscripts, letters, and interviews for all major quantum physicists. In 1979 John had completed his monumental *Electricity in the 17th and 18th Centuries*, whereas his earlier work had been more closely related to the SHQP project. He was already regarded as a great luminary in his field, with unusually broad knowledge and a truly exceptional capacity to integrate a precise conceptual history in a dense socio-institutional framework. I went to Berkeley to be closer to the sun of the history of physics.

OHST, as we called it, occupied a large room in the pseudo-medieval Stephens Hall, with a huge (not yet condemned) fire place, a view on the campanile, a collection of source books on the walls, two or three chests holding the Archive for the History of Quantum Physics, very long and thick wood desks shared by visitors and students, and three transparent cubicles occupied by John Heilbron, Bruce Wheaton, and Robin Rider (if I remember right). The other professors of the center, Roger Hahn and John Lesch, had offices elsewhere. In those years, the center attracted quite a few foreign scholars and PhD students, everyone had his or her own key to the Office, there were many exchanges, and lasting ties and friendships were built. Every Friday, the entire group met for lunch at a local pub, with John typically entertaining the party with his dry wit, and everyone sharing scholarly and worldly interests as best as they could. Although the other attending professors were themselves outstanding scholars, there was a sense that John reigned supreme with his natural authority, his managerial skills and energy, and his uncanny ability to say something clever on any topic that came to this historians' table.

When I entered the Office for the first time, John Heilbron was there to welcome me and introduce me to colleagues and staff. For a Frenchman used to more formalities, John's prompt invitation for a brunch on the following Sunday came as a surprise. On that glorious Sunday he drove me with his wife Pat and with Robin Rider to a dim sun restaurant in San Francisco's Chinatown. This was only a first hint of John's warm hospitality and generosity. A couple of years later, when he heard I needed a car for another long stay in Berkeley, he just gave me his own Fiat and got a newer car for himself. As he read and wrote abundantly and as he was running an Office and a journal largely by himself, one might imagine he would have neither time nor taste for mundanities. In reality, he was an occasional bon vivant with refined knowledge of English literature, Italian delights, and French Armagnac. As a writer, he avoided the dryness and sternness of most scholarly literature by showing the human strengths and weaknesses of his characters and revealing the comical absurdity of many a historical situation. As evident for instance in his *Galileo*, John was one of the rare scholars who can turn a vast amount of meticulous learning into a literary masterpiece.

John advised students and budding scholars working on quite different fields and periods, with various interests and methods. His advice and criticism usually did not bear on the choice of topic or approach. Instead, he required us to be consistent, rigorous, and persuasive in developing our chosen subject. After arriving in Berkeley, I came to him with a prewritten piece of conceptual history regarding the genesis of quantum field theory. He showed me how to turn it into a publishable article by adopting a proper style for bibliography and footnotes (as the chief editor of *HSPS*, he paid great attention to the material aspects of publication), by taking into account archival materials I had neglected, and by better contextualizing some of my remarks. He did not challenge the more speculative or philosophical elements, but advised me to keep them to a minimum.

Only in one or two cases did John orient me in my choice of topics. He believed that overspecialization in one topic, one period of history, or one historical period was too narrowing for a healthy scholar. He advised me to (temporarily) move from modern physics to the eighteenth century, which I did with moderate success at the time but significant long-term benefits (as I now realize). Also, he warned me against selecting research topics in a way that artificially separated purely scientific matters from human and institutional ones. As a cure, he recommended writing biographies as he had himself done for Henry Moseley and Max Planck. Through these books, through his history of electricity, through his contribution to the LBL history project, and through his book *The Sun in the Church* he greatly contributed to the broadening of the science-historian's interests.

One evident quality of John was his extreme efficiency in menial, material, or administrative tasks. He could scan an enormous amount of literature very rapidly and memorize its detailed contents with the help of many little cards in tiny handwriting. As the editor of *HSPS*, he read every submitted manuscript in record time, memorized its entire content, and spotted any internal inconsistency that had escaped the author's attention. He required directness and concision, and he removed digressions or unjustified propositions to an extent that sometimes induced the author to withdraw his or her paper. His excellency as an administrator was perhaps too well known, and he further demonstrated it by being for a few years a highly efficient vice-chancellor at UC-Berkeley. As he strongly believed in human perfectibility, he trained administrative staff that were not ready for their task and ultimately got the best results from them. He endured long, boring administrative meetings without the help of a cellular phone, by solving problems of classical geometry with paper and pen. These playful gymnastics of the mind and a few nighttime trips to the library led to his *Geometry Civilized*.

Another of John's qualities was his strong sense of justice. Nothing could irk him more than fraudulent behavior. I remember that during one of my first stays at OHST, I found out that many of the citations that a renowned historian of quantum physics had given as extracts of his own conversations with famous quantum physicists were in fact taken from the interviews Kuhn and his collaborators had done for the SHQP project. John's reaction was to write a damning review in *Isis* under the subtly humorous title "Artes compilationis" (*compilatio* means burglary in higher Latin, and compilation in lower Latin). Here is a more mundane anecdote. When, after a few months of good service, the electric system of the white Fiat John had given me suddenly failed, I brought it to a mechanic who charged me a substantial sum for declaring the car to be irreparable and worth the junkyard. As I was still in doubt, I had the car towed to my address, I

borrowed a meter from the physics lab, and after a couple of hours I was able to restore the car to good electric health. When I told the story to John, he expressed his indignation and offered his help to sue the dishonest mechanic (his father Louis Heilbron was a leading labor attorney). I judged he could make a better use of his time, and I let the matter rest. Indeed, at that time John was finalizing his biography of Max Planck, the "upright man" who faced the moral dilemmas of steering German science under an evil power. I remember reading an early version of the concluding paragraph, in which John described Planck's choice not to resign as a courageous and principled one, with painful personal consequences. With the lightness of one who never had to face such dilemmas, I told John I had more admiration for a Max Laue who had refused any compromise with the Nazi regime. In the final version, John ended his biography with a question: "Did [Planck's] worldview ennoble him or betray him?" A just historian does not judge.

I have already mentioned John's belief in the perfectibility of his coworkers. This went together with an egalitarian, non-elitist attitude. He seemed equally at ease and pleased in chatting with his former director Thomas Kuhn (who sometimes returned to Berkeley for short visits) as with his Japanese gardener (a truly wonderful man). He did not flatter anyone, and he did not ridicule anyone who acted in good faith. His own intellectual production being so superior in extent and quality, he could not fail to see weaknesses in other historical studies. However, he regarded the history of science as a collective enterprise, best done with the help of anterior studies, despite all their imperfections. He insisted on the collection of data that could be used by the entire community (the SHQP project was of course a prime example), and he warned against ideologically motivated history, be it with scientific-realist or with relativist intentions, as such motivation inevitably interferes with the communicability and stability of the generated accounts. Better be an ant than a cicada.

When a great intellectual figure disappears, one usually seeks solace in the idea that his works will survive him. If the solace is proportional to the magnitude of the *Nachlass*, then John Heilbron is still largely with us. Yet, for those who had the privilege to know him, it is evident that he was much more than the sum of his published works. He was a man of unfathomable knowledge, even in domains in which he has left no record of interest. He was a wise advisor to his friends and peers, so wise that he knew the limits of wisdom. His intense curiosity on all matters of past science was truly contagious. In his Berkeley times, he made visitors feel like they were joining a great, joyful enterprise of learning. We were on board a fleet in search of new continents, with no clear aim in sight but a true savant at the helm.