

Social Aspects of Science; Religion

E. CRAWFORD, *Nationalism and Internationalism in Science, 1880–1939. Four Studies of the Nobel Population*, Cambridge and New York: Cambridge University Press, 1992. xii + 157 pp., 14 tables, 5 figs, index. £27.95; \$44.95.

Part I of this book contains a brief methodological introduction into the 'qualitative approach to sociology of science' (p. xii) adopted by the author, Elisabeth Crawford (member of the 'Group d' Études et de Recherches sur la Science' at the 'Centre National de la Recherche Scientifique') and a brief survey of 'national and international science 1880–1914' in the remainder of part one (pp. 28–46). Part two of this rather slim volume consists of four 'critical and empirical studies' which are supposed to constitute a comparative treatment of the issues of nationalism and internationalism as related to the scientific elite defined by the 'Nobel population'. Three of these four case studies have essentially already appeared elsewhere: the piece on American Nobel prize-winners, for instance, was published in *The Michelson Era in American Science*, edited by S. Goldberg and R. H. Stuewer, New York: American Institute of Physics, 1988; the one on 'Internationalism as a casualty of World War I' was printed in *Social Science Information*, 27 (1988), 163–201; and an earlier version of the study on the links between the *Kaiser-Wilhelm-Gesellschaft* and German Nobel prize winners was originally co-authored by Elisabeth Crawford and John Heilbron when it appeared in the anthology edited by R. Vierhaus and B. vom Brocke in 1990. Only her study of centre-periphery relations in Eastern Central Europe, the Austro-Hungarian Empire, actually the best piece in the book, has not been published before. Here, Crawford compares the publication profiles of 'international luminaries' such as Schrödinger, of 'favourite sons' such as Eötvös, and of geographically peripheral 'stay-at-home-innovators' and their visibility as measured via the *Physics Citation Index, 1920–1929*. In so far as this section deals with the 'Exner circle' (pp. 89f., 99ff.), it is based on B. Karlik and E. Schmid: *Franz Serafin Exner und sein Kreis*, Vienna, 1982.

All the studies are based on the documents from the Nobel Archives of the Royal Swedish Academy of Sciences which have been released since 1974 when they are at least 50 years old. While Elisabeth Crawford repeatedly cites a volume co-edited by herself, John Heilbron, and Rebecca Ullrich: *The Nobel Population, 1901–1937: A Census of the Nominators and Nominees for the Prizes in Physics and Chemistry*, Berkeley and Uppsala, 1987, as the 'first' study of its kind (p. 4), she apparently did not know about a much earlier study edited by Günter Küppers, Peter Weingart, and Norbert Ulitzka: *Die Nobelpreise in Physik und Chemie 1901–1929, Materialien zum Nominierungsprozeß*, Bielefeld: Report Wissenschaftsforschung, No. 23, 1982, which is neither cited nor mentioned in the (inadequate) four-page bibliographical essay at the very end of her book. This is worrisome not only because of the author's incorrect priority claim, but even more so since the German study of 1982 had already studied precisely those topics which Crawford takes up in her book: what kind of national patterns are there in the nomination

processes, how many nominations are given in relation to the candidates of each nation, how the votes are spread among the four large science nations America, England, France, and Germany, plus Scandinavia, and how does World War I influence these preferences. Furthermore, it also deals with topics omitted by Crawford, such as, for example, the degree of consensus among the nominees, and the number of votes per candidate each year up to their award.

How much this book does in fact base itself on the studies of other scholars such as, for instance, Brigitte Schroeder-Gudehus on Nationalism and Internationalism, becomes clear if we apply 'scientometrics' for a moment and check the number and distribution of references to Schroeder-Gudehus in the book: pp. 28f., 41, 49f., 55, 72, 75, 148. It is somewhat surprising, that in the index, Schroeder-Gudehus is only represented with one entry (p. 75)—the same artificial reduction of references is observable with regard to Daniel Kevles, Lewis Pyenson and others, while Christa Jungnickel and Russell McCormach, who are also quoted fairly often, are not included in the index at all! Besides this (questionable) incompleteness of the index, there are mistakes such as, for example, the identification of Heinrich Rausch von Traubenberg as a theoretical physicist (p. 98)—in fact he was an experimental physicist who studied *inter alia* the Stark effect in very strong electric field, thus supplying data for a measurement of the quadratic Stark effect.

However, worse than these occasional errors is the obsessive concentration on the 'Nobel population' as the group of elite scientists awarded with or at least nominated for this prestigious award. To identify this group as the elite becomes less and less appropriate the more we approach the period of big science where the singling out of individuals from large research teams becomes less and less fair. When referring to the fact that a substantial number of pupils of Nobel prize winners also received a prize later (p. 136), we have to keep in mind that those who once got the prize are from then on permanent members of the nominee pool from which we can expect a certain preference for their own pupils: a patronage phenomenon within this 'population'! Not much less questionable are the 'favourite-son', 'insularity', and 'reciprocity' phenomena which Crawford illustrates with examples from France as the 'monde fermé' (pp. 53f.)—what we face here are self-sustaining phenomena which seriously put into doubt the award of the Nobel prize as the *only* criterion of 'high-level work'. It seems to me that this kind of elitism is a late reflection of the Great Men approach in earlier history of science, which expected great progress only from the minds of a few solitary geniuses; and it is no accident that Crawford starts her book with a detailed discussion of Alphonse de Candolle's work in his *Histoire des Sciences et des Savants depuis deux Siècles* of 1873 (pp. 11–15). To me, this continual focus in Crawford's work for the last ten years upon the Nobel prize and 'nobelizable' work (p. 122) is one-sided and misleading. Historians of science should not further the unbalanced focus of the public on just this one prize despite all its Royal glamour. What we now need rather is studies about other 'populations' constituted by prizes such as the Draper, Gibbs, Rumford, or Max Planck Medal, or other highly prestigious awards (p. 140); what we also need is more information on how the relative prestige of these prizes changed over time (p. 127). Moreover, the kind of prosopography connected to the 'populations' identified by each of these awards should be much less superficial than in this book, where typically only a few lines are devoted to a description of the scientist's achievements with pure name-dropping as the extreme (e.g. p. 133).

Crawford's book is neither original nor really useful as a 'critique of existing work broadly related to the themes of this book' (p. 3), because in the survey parts of her book (pp. 1ff., 28ff., 147ff.) she fails to mention important recent studies which were published precisely to remedy the former lack of comparative studies of the influence of nationalism on scientific development such as, e.g., Glick's volumes on the reception of Darwin's theory of evolution and on the comparative reception of the theory of relativity. Therefore, Crawford's book cannot be recommended.

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