

As the flutter research projects show, direct war relevant research was conducted by the NLL. In addition, research projects that were not obviously connected with military research reduced the workload at the AVA and thereby made additional resources available for military research. In return, this scientific collaboration caused a remarkable increase in staff, budget and income from external research orders for the NLL. With reference to the German research contracts and their war importance, employees of the NLL could be protected from recruitment as forced labourers to the German Reich.

## REFERENCES

- [1] Greidanus, J. H., van der Vooren, A.I. (1943): *Berechnung der Flatterschwingungen beschrieben in den Versuchsberichten Nr. 934/13 und 933/29 der AVA*, 17 October 1942, Deutsches Museum (Archiv), ZLDI, NLL V.1284.
- [2] Schmaltz, Florian: *Aerodynamic Research at the Nationaal Luchtvaartlaboratorium (NLL) in Amsterdam under German Occupation during World War II*, Ad Maas and Hans Hooijmaijers (eds.), *Scientific Research in World War II: What Scientists Did in the War*, New York, NY 2009 , pp. 146–182.
- [3] Van der Neut, Arie: *Versuche an einem Außenflügel einfacher Konstruktion zur Bestimmung der Versteifffestigkeit in ihrer Abhängigkeit vom Verdrehmoment*. NLL Bericht S.259, 31 August 1942, Zentrales Archiv des Deutschen Luft- und Raumfahrtzentrums Göttingen, GOAR 363.

**“Certainly not by Logic!” Hans Peter, the Image of Mathematics, and the Self-Examination of Economics during the 1930ies**

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Within the *History of Mathematics in Germany from 1920 to 1960* the economist and statistician Hans Peter (1898-1959)[1, 2, 3, 4] is a hybrid, multifaceted figure in at least three ways: *First*, Peter’s work is interdisciplinary and provides insights into important fields of mathematical applications. He was not a professional mathematician, but having studied mathematics, philosophy and economics during his university education in the 1920ies, he imported mathematical and econometric methods (statistical methods, systems of differential equations, the method of mathematical modelling of, for example, economic cycles) to economics and thus helped develop it into a modern discipline with a broad repertoire of elaborated theories and effective applications. *Second*, Peter’s writings transcend the economic and the mathematical realm by linking both with cultural and ideological questions. In this respect, his case is an example for the interference of the (internal) development of science and its (internally and externally influenced) “image” [5, 6]. *Third*, Peter also put his economic and mathematical skills to practical use. After the beginning of World War II he became a member of the “Arbeitswissenschaftliche Institut” of the “Deutsche Arbeitsfront”, an influential but often underestimated brain-trust of the Third Reich administration, which worked out important parts of the National Socialists’ social policies and their so-called “Generalplan Ost”. Working for this institution from 1940 to 1944, Peter established statistical and mathematical methods as key technologies of economic

rationalization and planning [3, 7], a fact that also raises questions about the relation between scientific theory and political practice.

Hence, using Hans Peter's career as an example we gain insight into the premises, conditions, and implications of the production and legitimization of economic knowledge under the totalitarian rule of National Socialism – and beyond, since Peter's career did not end with the war. Without resorting to a constructivist approach towards the history of economics [8] the case study tries to show how the political transformations influenced the images of economics (and vice versa) and allowed some German economists to make the transition through the historic ruptures of 1933 and 1945.

Here, I can only give a rough outline of one concrete aspect: Peter was involved in a highly controversial debate on the suitability or unsuitability of mathematical methods for economics. The discussion was instigated by Hans Frank, at that time president of the "Akademie für Deutsches Recht" and a confidant of Hitler, who, in 1934, called on the economists to end their theoretical discords and to bethink themselves of the essence of 'Germaness' [9]. According to most of the national socialist ideologues the German "Volkswirtschaft" could not be properly described by abstract mathematical models, so the economists obediently started to discuss the "elimination of the exact theory of economics" alleging that "the majority of economists who still commit themselves to the exact theory are in opposition to the new German spirit of science." [10] In an article published in 1935 in the economic journal *Finanzarchiv* and a few succeeding articles Klaus Wilhelm Rath led an attack on Hans Peter, accusing him of an un-German, Jewish approach to economic research and arguing that Peter's "formalistic methodology" which "ego-maniacally overrides life" must be overcome. Rath insisted that the validity of theoretical propositions were affected by transformations of the real world, but "certainly not by logic", because logic itself was, like mathematics, a method of liberal thinking.[11]

Knowing that he could also count on strong allies, that for example the Nazis Theodor Vahlen and Dietrich Klagges believed in the necessity and usefulness of mathematical methods in the economics [12], Peter responded to Rath's pamphlet with a brave and scathing criticism in which he demonstrated that Rath's statements suffered from a number of philosophical and methodological shortcomings. He countered Rath's anti-mathematical and anti-theoretical resentments and pleaded for a strict separation of a value-free and rational theory of economics on the one hand and a normative approach to economy on the other hand, with only the latter being subject to ideological loyalty. [13]

After the debate had escalated into a many-voiced controversy on the status and cogency of mathematical knowledge, on the distinction between objectivity and truth, and on the relation of scientific models and reality, Rath appeared to prevail over Peter. In 1938 Rath became professor of economics in Göttingen where he started to bring the faculty of economics into accordance with the political order, while Peter, as a consequence of his recalcitrant behavior, lost his position in Tübingen and had to abandon his academic career [2, 4]. But the situation

changed soon enough: Striving for a rationalized and efficient war economy the Nazis recognized the relevance of mathematics in non-mathematical fields of research and practice, and started to make use of Peter and his formerly denounced theoretical knowledge [3]. Working for the “Deutsche Arbeitsfront”, Peter continued his research on the theory of economic cycles, but was now also eager to prove that his theoretical knowledge concurred with the political and economic aims of the National Socialists [14]. In contrast to his earlier statements he now insisted that the economic theoretician has to take the political norms into account: “The decision to realize the ‘Volksgemeinschaft’ defines the condition of the theoretical question.” [15]

After the war, Peter could resume his endeavor to develop effective tools for the organization of a planned economy [16]. Although he had been part of the technocratic and functional elites of the National Socialist system, he was granted the status of a “victim” of National Socialism and became a protagonist of post war German economics [1]. He pursued his work in a position at the University of Tübingen and as an advisor to economic institutions and politicians of the young Federal Republic. This continuity might be the major reason why he, revisiting the *Wandlungen in der Wirtschaftsauffassung* (1949) during the past decade, could envision the system of National Socialism as a grotesque play that is over now, without mentioning his personal participation: “From time to time we fought against each other in an ugly way. [...] The play became a grotesque entirely when half-educated ‘politicians’, who seized the power apparatus of the state, entertained themselves with the idea that shallowness serves the state and simultaneously declared everything they could not understand as seditious. As soon as this episode is overcome, the foolishness needs only to be noted; the scientific development might be slowed down by such silliness but the core of science cannot be touched.” [17]

#### REFERENCES

- [1] “Hans Peter”, in: 200 Jahre Wirtschafts- und Staatswissenschaften an der Eberhard-Karls-Universität Tübingen. Leben und Werk der Professoren, ed. H. Marcon, H. Strecker, Stuttgart (2004), 509–515.
- [2] K.-R. Brintzinger, *Die Nationalökonomie an den Universitäten Freiburg, Heidelberg und Tübingen 1918-1945*, Frankfurt am Main et al. (1996).
- [3] K. H. Roth, *Zur biographischen Typologie der Mitarbeiter des Arbeitswissenschaftlichen Instituts der Deutschen Arbeitsfront*, Sozialstrategien der Deutschen Arbeitsfront, ed. Hamburger Stiftung fuer Sozialgeschichte des 20. Jahrhunderts, München et al. (1992), 9–15.
- [4] H. Janssen, *Nationalökonomie und Nationalsozialismus: Die deutsche Volkswirtschaftslehre in den dreissiger Jahren*, 2nd. ed., Marburg (2000).
- [5] Y. Elkana, *Anthropologie der Erkenntnis*, Frankfurt am Main 1989.
- [6] S. Shapin, *The Scientific Life. A Moral History of a Late Modern Vocation*, University of Chicago Press 2008.
- [7] K. H. Roth, *Das Arbeitswissenschaftliche Institut der Deutschen Arbeitsfront und die Ostplanung*, Der “Generalplan Ost”. Hauptlinien der nationalsozialistischen Planungs- und Vernichtungspolitik, ed. Mechthild Rössler/Sabine Schleiermacher, Berlin (1993), 215–225.
- [8] Y. P. Yonay, *When Black Boxes Clash: Competing Ideas of What Science Is in Economics, 1924-39*, Social Studies of Science, 24/1 (1994), 39–80.

- [9] H. Frank, *Der Nationalsozialismus und die Wissenschaft der Wirtschaftslehre*, Schmollers Jahrbuch 58/6 (1934), 641–650.
- [10] A. Predoehl, *Gesamte Staatswissenschaft und exakte Wirtschaftstheorie*, Zeitschrift für die gesamte Staatswissenschaft 95 (1935), 102–115.
- [11] K. W. Rath, *Die Aufgabe einer Selbstbesinnung der Finanzwissenschaft*, Finanzarchiv, N.F. 3 (1935), 1–76.
- [12] D. Klagges, *Geleitwort zur ersten Tagung der Gemeinschaft von Förderern der mathematischen Wirtschafts- und Sozialforschung*, Archiv für mathematische Wirtschafts- und Sozialforschung 2 (1936), 48–55.
- [13] H. Peter, *Zur Selbstbesinnung in den wirtschaftlichen Staatswissenschaften. Erkenntniskritische Bemerkungen*, Finanzarchiv, N.F. 3 (1935), 267–321.
- [14] H. Peter, *Kritische Bilanz der nationalsozialistischen Sozialpolitik (1943)*, Sozialstrategien der Deutschen Arbeitsfront, ed. Hamburger Stiftung für Sozialgeschichte des 20. Jahrhunderts, Tl. B, Abt. 2: Denkschriften, Gutachten und Veröffentlichungen, M. Hepp u. K. H. Roth, München 1988.
- [15] H. Peter, *Über exakte Forschungsmethoden in den Wirtschafts- und Sozialwissenschaften*, Finanzarchiv N.F. 10 (1944), 288–313.
- [16] W. Abelshäuser, *Freiheitlicher Sozialismus oder soziale Marktwirtschaft: Die Gutachtertagung über Grundfragen der Wirtschaftsplanung und Wirtschaftslenkung am 21. und 22. Juni 1946*, Vierteljahrshefte für Zeitgeschichte, 24/4 (1976), 415–449.
- [17] H. Peter, *Wandlungen in der Wirtschaftsauffassung*, Finanzarchiv N.F. 11, 1949, 170–194.

## The statistician Siegfried Koller

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Elaborating somewhat on [1] and [2], Siegfried Koller’s first career was sketched, which led him from a thesis under Felix Bernstein in Göttingen, via a second Ph.D. in Medicine at Gießen, and thanks to politically well-tuned publications, to a professorship at Berlin University and directorship of a newly founded biostatistical institute. But the Berlin appointment took place only shortly before the end of WW II. (After a number of years in prison, Koller’s second career then made him a very influential statistician of the Federal Republic of Germany.)

There were various reasons for recalling this career in the context of the mini-workshop: (1) It illustrates very well the general pattern of “science and politics as resources for one another” (to quote Mitchell Ash’s well-known and apposite formula). (2) It shows the complexity of a hybrid discipline: After the emigration of all experts of mathematical statistics in influential academic positions, Koller went through the medical network in order to consolidate his career, thus changing also, for instance, the journals in which he tried to publish. (3) Pauline Mazumdar’s thesis about different styles in genetic research in the 1930s (Mendelian algebra like in Felix Bernstein’s research on blood groups, vs. pedigree models as practised by Ernst Rüdin) remains open to further research; the works by Koller and Kranz are situated at the borderline of both models.

## REFERENCES

- [1] S. Oehler-Klein, N. Schappacher, Siegfried Koller und die neuen Herausforderungen der Statistik im Nationalsozialismus. In: *Die Medizinische Fakultät der Universität Gießen im*