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SCIENCE ADVISING AND SCIENCE POLICY IN POST-WAR WEST
GERMANY: THE EXAMPLE OF THE DEUTSCHER
FORSCHUNGSRAT

ABSTRACT. The Deutscher Forschungsrat (German Research Council) attempted to anchor science advising and science policy in West Germany after the Second World War. Promoted by a circle of élite scientists, the council aimed to establish institutions and mechanisms comparable to those in Great Britain, the United States, and other scientific powers. After a two-and-a-half year existence, it eventually failed. The reasons for its failure, some local, some global, display the difficulties facing research policy in the early years of the Federal Republic.

INTRODUCTION

The Deutscher Forschungsrat (DFR), or German Research Council, forms a significant episode in the history of science policy. Established in early 1949, the outgrowth of an advisory body to the British occupation forces, the DFR assembled a circle of distinguished scholars – headed by the Nobel Laureate Werner Heisenberg – who believed that Germany's post-war reconstruction required a new framework of scientific organization and support. A coordinated federal research policy was needed, drawing upon models of scientific advice used by other nations since the First World War. The goal was not merely policy *for* science; it was also policy *by* scientists, for science and beyond.

These were ambitious plans, characteristic of the early post-war years. However, they failed. For two and a half years, the council tried to make a case for its existence. Although Germany's governance initially centered on the states (the *Länder*) – and for science, their ministers of culture and education (the *Kultusminister*) – the DFR looked for a base in the new federal government (the *Bund*), whose cultural authority was sharply limited. At the same time it sought to cooperate (and in 1951 fused) with the Notgemeinschaft der Deutschen Wissenschaft (NG, Emergency Association for German Scholarship). The result was the DFG, the Deutsche Forschungsgemeinschaft (German Research Association), which continues to play a key role in science organization. In this fusion, however, the Forschungsrat was largely swallowed up in



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the Notgemeinschaft's grant-giving activities. However one judges it, a strong programme of research policy was scarcely taken up until at least the 1960s. The idea of providing high-level, independent advice on the American and British model, never really came to pass.

The history of the DFR is a history of failure to achieve its stated goals.¹ But the failure was instructive. For Germany, the council raised a crucial and largely novel demand. Its failure reflects the conflicting views held at this decisive moment, during a period of intense debate about the future of science and the state.

War, the threat of war, or the experience of war have shaped national science policy since the eighteenth century.² The end of the Second World War raised such issues again. Globally, the war anchored the idea of scientific research as a key factor of national strength. In the victorious nations, enormous research organizations were created and scientists moved into positions of influence. After the war, in the United States, the National Science Foundation was created with a wide palette of research initiatives. The National Research Council underwent a rethinking of its mission as an independent advisory organ.³ In the United Kingdom, a new Advisory Council on Scientific Policy was established, and the Research

¹ We are not seeking to answer whether West Germany would have been better off had it succeeded.

² Maurice Crosland, 'Science and the Franco-Prussian War', *Social Studies of Science*, VI (1976), 185–214; Daniel J. Kevles, 'George Ellery Hale, the First World War, and the Advancement of Science in America', *Isis*, LIX (1968), 427–437; Roy M. MacLeod and E. Kay Andrews, 'The Origins of the D.S.I.R.: Reflections on Ideas and Men, 1915–1916', *Public Administration*, XLVIII (1970), 23–48; Ian Varcoe, 'Scientists, Government and Organised Research in Great Britain 1914–1916: The Early History of the DSIR', *Minerva*, VII (1970), 192–216; Peter Alter, *Wissenschaft, Staat, Mäzene: Anfänge moderner Wissenschaftspolitik in Großbritannien 1850–1920* (Stuttgart: Klett-Cotta, 1982).

³ Morgan Sherwood, 'Federal Policy for Basic Research: Presidential Staff and the National Science Foundation, 1950–1956', *Journal of American History*, LV (1968), 599–615; Daniel J. Kevles, 'The National Science Foundation and the Debate over Postwar Research Policy, 1942–1945: A Political Interpretation of *Science – The Endless Frontier*', *Isis*, LXVIII (1977), 5–26; Rexmond C. Cochrane, *The National Academy of Sciences: The First Hundred Years 1863–1963* (Washington, DC: National Academy of Sciences, 1978); J. Merton England, *A Patron for Pure Science: The National Science Foundation's Formative Years, 1945–1957* (Washington, DC: National Science Foundation, 1982); Nathan Reingold, 'Vannevar Bush's New Deal for Research: or The Triumph of the Old Order', *Historical Studies in the Physical and Biological Sciences*, XVII (1987), 299–344; Daniel Lee Kleinman, *Politics on the Endless Frontier: Postwar Research Policy in the United States* (Durham, NC: Duke University Press, 1995); Jessica Wang, 'Liberals, the Progressive Left, and the Political Economy of Postwar American Science: The National Science Foundation Debate Revisited', *Historical Studies in the Physical and Biological Sciences*, XXVI (1995), 139–166.

Councils and the Department of Scientific and Industrial Research were brought into a coordinated system.⁴ These efforts served as models for other countries, which likewise sought to organize science.⁵

In the Federal Republic, the global rethinking of science policy was inflected by the specific problems of a defeated Germany. As a new political order emerged between 1945 and the early 1950s, conflicts over reconstruction played out at multiple levels. From across the political spectrum came models of the state, federalist and centralized, interventionist and *laissez-faire*. From these controversies, research was not sheltered. On the contrary, because of one clause in the West German Basic Law, it became a major site of contention, and arguments over the political lessons of the Third Reich intersected with debates about the reorientation of government attention to science.

The DFR occupied a significant place at the convergence of these developments. It explicitly modelled itself upon bodies in other countries; its name was meant to translate the English expression ‘Research Council’, and its rhetoric followed that of its American counterpart.⁶ But if this approach succeeded in the United States and United Kingdom, why did it not work in West Germany? Why were German politicians and scholars not persuaded?⁷

⁴ Philip J. Gummert and Geoffrey L. Price, ‘An Approach to the Central Planning of British Science: The Formation of the Advisory Council on Scientific Policy’, *Minerva*, XV (1977), 119–143; Jon Agar and Brian Balmer, ‘British Scientists and the Cold War: The Defence Research Policy Committee and Information Networks, 1947–1963’, *Historical Studies in the Physical and Biological Sciences*, XXVII (1998), 209–252. For background see Philip Gummert, *Scientists in Whitehall* (Manchester: Manchester University Press, 1980).

⁵ Shigeru Nakayama, ‘The American Occupation and the Science Council of Japan’, in Everett Mendelsohn (ed.), *Transformation and Tradition in the Sciences: Essays in Honor of I. Bernard Cohen* (Cambridge: Cambridge University Press, 1984), 353–369; Hideo Yoshikawa and Joanne Kaufmann, *Science Has No National Borders: Harry C. Kelly and the Reconstruction of Science and Technology in Postwar Japan* (Cambridge, MA: MIT Press, 1994); Morris Low, ‘Science and Civil Society in Japan: Physicists as Public Men and Policy Makers’, *Historical Studies in the Physical and Biological Sciences*, XXX (1999), 193–225; Richard H. Beyler and Morris F. Low, ‘Science Policy in Post-1945 West Germany and Japan: Between Ideology and Economics’, in Mark Walker (ed.), *Science and Ideology* (Amsterdam: Harwood, forthcoming); cf. François Jacq, ‘The Emergence of French Research Policy: Methodological and Historiographical Problems (1945–1970)’, *History and Technology*, XII (1995), 285–308.

⁶ Cochrane, *op. cit.* note 3, 236.

⁷ In so framing the question, we are not arguing for a German *Sonderweg*, fitting the council’s troubles into some longer history of German antimodernism. Some of the council’s members, however, would have viewed its fate in this way and railed against what they saw as a pattern.

Most histories of the DFR have embedded it in the history of West German scientific institutions, in which it is treated, at best, as a digression.⁸ This perspective has played up several factors: the post-1945 restoration of pre-war structures and élites, a familiar theme in West German history; the conflicts of jurisdiction between the *Bund* and the *Länder*, crucial to scientific organizations for their impact on funding; and the maintenance of strong institutions of scholarly *Selbstverwaltung*, or self-governance, significant in the 1960s for conflicts about university structure and science planning.⁹ One result has been a picture of the DFR as a rival to other bodies with a seemingly identical mission. However, we can also highlight those aspects of the DFR's agenda that differentiated it from other German institutions and linked it to other countries.¹⁰ This comparative orientation then makes it easier to distinguish factors specific

⁸ Thomas Stamm, *Zwischen Staat und Selbstverwaltung: Die deutsche Forschung im Wiederaufbau 1945–1965* (Köln: Wissenschaft und Politik, 1981), 121–150; Maria Osietzki, *Wissenschaftsorganisation und Restauration: Der Aufbau außeruniversitärer Forschungseinrichtungen und die Gründung des westdeutschen Staates 1945–1952* (Köln: Böhlau, 1984), principally 344–368. See also Michael Eckert and Maria Osietzki, *Wissenschaft für Macht und Markt: Kernforschung und Mikroelektronik in der Bundesrepublik Deutschland* (München: C.H. Beck, 1989), ch. 1; Thomas Stamm, 'New Opportunities – Old Traditions: The Struggle for Autonomy of Post-War German Science', in Michelangelo de Maria, Mario Grilli and Fabio Sebastiani (eds.), *The Restructuring of Physical Sciences in Europe and the United States, 1945–1960* (Singapore: World Scientific, 1989), 228–246; David C. Cassidy, *Uncertainty: The Life and Science of Werner Heisenberg* (New York: W.H. Freeman and Company, 1992), 531–537; Maria Osietzki, 'Reform oder Modernisierung – Impulse zu neuartigen Organisationsstrukturen der Wissenschaft nach 1945', in Wolfram Fischer, Klaus Hierholzer, Michael Hubenstorf, Peter Th. Walther and Rolf Winau (eds.), *Exodus von Wissenschaften aus Berlin: Fragestellungen – Ergebnisse – Desiderate: Entwicklungen vor und nach 1933* (Berlin: Walter de Gruyter, 1994), 284–295; Wolfgang D. Müller, *Geschichte der Kernenergie in der Bundesrepublik Deutschland: Anfänge und Weichenstellungen* (Stuttgart: Schäffer Verlag für Wirtschaft und Steuern, 1990), ch. A.3.

⁹ These go back to the accounts of the organizational actors: Kurt Zierold, *Forschungsförderung in drei Epochen: Deutsche Forschungsgemeinschaft: Geschichte, Arbeitsweise, Kommentar* (Wiesbaden: Franz Steiner, 1968); Thomas Nipperdey and Ludwig Schmugge, *50 Jahre Forschungsförderung in Deutschland: Ein Abriß der Geschichte der Deutschen Forschungsgemeinschaft 1920–1970* (Bonn: Deutsche Forschungsgemeinschaft, 1970); H. Eickemeyer (ed.), *Abschlußbericht des Deutschen Forschungsrates* (München: R. Oldenbourg, 1953).

¹⁰ For instance, we can complicate the view of much of the German sociological literature that sees securing research funding as the principal goal of scientists' interactions with the state. See, e.g., Dietmar Braun, *Die politische Steuerung der Wissenschaft: Ein Beitrag zum 'kooperativen Staat'* (Frankfurt: Campus, 1997); Peter Krevert, *Funktionswandel der wissenschaftlichen Politikberatung in der Bundesrepublik Deutschland: Entwicklungslinien, Probleme und Perspektiven im Kooperationsfeld von Politik, Wissenschaft und Öffentlichkeit* (Münster: Lit, 1993).

to Germany.¹¹ The comparison can help explain why the council's idea failed in West Germany when it succeeded elsewhere. It also makes clear that the council faced other, systematic problems that were not unique to the Federal Republic.

The new archival material that we bring to bear sheds light upon matters outside the DFR's boundaries.¹² It helps illuminate the role of Chancellor Konrad Adenauer, whose early views on science policy have remained murky. At the same time, it shows how *Land* ministers could be moved, as early as 1950 and against their previous opposition, to accept and even advocate *Bund* support of research.¹³ Our account begins with a schematic overview of the DFR's programme. We then recount its evolution amidst institutional conflict, competing interests, and personal antagonism. Finally, we attempt to explain the failure of much of the council's agenda and the significance of this outcome against the international backdrop.

ISSUES, STRUCTURES, ARGUMENTS

The DFR's programme warrants a short exposition.¹⁴ First, the DFR strove for a transformed appreciation of German scholarship (*die Wissenschaft*) in public life as a factor in national welfare and the economy.¹⁵ This

¹¹ Cf. Ronald Brickman and Arie Rip, 'Science Policy Advisory Councils in France, the Netherlands, and the United States, 1957–77: A Comparative Analysis', *Social Studies of Science*, IX (1979), 167–198; Braun, *op. cit.* note 10; Etel Solingen (ed.), *Scientists and the State: Domestic Structures and the International Context* (Ann Arbor: University of Michigan Press, 1994).

¹² We make use of federal documentation not accessible for the foundational accounts of the early 1980s, as well as records of the DFR deemed too sensitive to pass over to the DFG. The latter records are located in the Werner-Heisenberg-Archiv, München (hereafter WHM).

¹³ On research policy in the early Federal Republic, see Hans-Willy Hohn and Uwe Schimank, *Konflikte und Gleichgewichte im Forschungs-system: Akteurkonstellationen und Entwicklungspfade in der staatlich finanzierten außeruniversitären Forschung* (Frankfurt: Campus, 1990); Winfried Schulze with Sven Bergmann and Gerd Helm, *Der Stifterverband für die Deutsche Wissenschaft, 1920–1995* (Berlin: Akademie-Verlag, 1995); David Cassidy, 'Controlling German Science, II: Bizonal Occupation and the Struggle over West German Science Policy, 1946–1949', *Historical Studies in the Physical and Biological Sciences*, XXVI (1996), 197–239; Helmuth Trischler and Rüdiger vom Bruch, *Forschung für den Markt: Geschichte der Fraunhofer-Gesellschaft* (München: C.H. Beck, 1999).

¹⁴ See the appendices to Eickemeyer, *op. cit.* note 9. Many documents are reprinted in Werner Heisenberg, *Gesammelte Werke/Collected Works*, Walter Blum, Hans-Peter Dürr, and Helmut Rechenberg (eds.), vol. C, part V (München: R. Piper, 1989).

¹⁵ Cf. Beyler and Low, *op. cit.* note 5.

required (it said) rethinking of attitudes in the academic disciplines, industry, and government. In particular, the state had to step in at the highest, national level, providing mechanisms for stimulating, funding, and coordinating research, and creating channels for deploying expert knowledge for practical problems. The council called for a deliberate balance between interdisciplinary and integrative studies of key applied problems and long-term promotion of basic science. In its demand for science policy, the DFR saw an imperative for scientific advising. This was to be an initiative of scientists and to reflect a new democratic ‘co-responsibility of scholarship’ (*Mitverantwortung der Wissenschaft*). In a democratic political system – this was the council’s reasoning – researchers should not wait for administrative leadership.¹⁶ And it pushed for rapid re-establishment of international ties, to restore West German science to global standards, to encourage the international reacceptance of its scientists, and to serve as a conduit for foreign contacts and funding.¹⁷

How were such ideas to be implemented? A self-evident part of the answer was a small body of élite scientists. Its members’ reputation and independence were to guarantee recognition abroad and leverage at home. Only researchers would be involved, not politicians, administrators, or other social groups. To ensure an overview of the field, the council would be composed of pure researchers who stood above disciplinary boundaries, whose competence extended to applied science but whose broad vision kept them open to new perspectives.¹⁸ Members would rotate through three-year terms. As in many such bodies, new members would be co-opted. The principle of selection was to be the choice of outstanding individuals by their peers; the basis would be personal authority, not disciplinary balance or political affiliation. (An unproblematic political past was, however, usually an unspoken presupposition.) Legitimation would derive from the backing of the academies, research institutions, and professional organizations.¹⁹

¹⁶ Heisenberg, ‘Vorwort’, in Eickemeyer, *op. cit.* note 9, 9–10; WHM Abschlussbericht, Heisenberg to Raiser, 6 January 1953.

¹⁷ Thomas Stamm-Kuhlmann, ‘Deutsche Forschung und Internationale Integration’, in Rudolf Vierhaus and Bernhard vom Brocke (eds.), *Forschung im Spannungsfeld von Politik und Gesellschaft: Geschichte und Struktur der Kaiser-Wilhelm-/Max-Planck-Gesellschaft* (Stuttgart: Deutsche Verlags-Anstalt, 1990), 886–909.

¹⁸ If this arrangement suggested an appreciation of theory above practice, it also borrowed from common views of the relations between pure and applied research. Cf. Ronald Kline, ‘Construing “Technology” as “Applied Science”’: Public Rhetoric of Scientists and Engineers in the United States’, *Isis*, LXXXVI (1995), 194–221.

¹⁹ Cf. occasional references to the DFR as a *korporative Vertretung*: e.g., Hessisches Wirtschaftsarchiv (Darmstadt), Nachlaß Richard Merton (hereafter RMD), Abt. 2000, Nr.

The council was to stand at the core of the research system, taking on central tasks and maintaining connections to other bodies. It would consult with scholarly associations and form interdisciplinary commissions, and it would channel money to organizations that distributed research grants. From its central position, it would survey research efforts carried out in university, government, and independent institutes. It would provide impartial advice to industry and to all levels of the political system, culminating with the federal chancellor. As it saw things, however, it would not need executive powers, as its intellectual authority would carry its own weight.²⁰ While its role could be assimilated to previous advising structures, it also proposed a degree of autonomy that went beyond earlier practices.²¹

The DFR based its case on comparative and historical arguments. For policy structures, the principal model was the research council system in America and, even more, Britain.²² Founded during and after the First World War, and led (*de jure* or *de facto*) by distinguished researchers, these advisory bodies had obtained (and sometimes maintained) powerful positions at the seat of government. The DFR took from the British a strong position in overseeing state-supported research; from the Americans, self-constitution by the scientific community; and from both, the ambition to coordinate government departments and to encourage close

117, Rein to Merton, 22 January 1949; 'Vorläufige Satzung des DFR', in Eickemeyer, *op. cit.* note 9, 81–84, on 81.

²⁰ WHM Notgemeinschaft, Eickemeyer, notes on discussion with Hundhammer, 28 March 1949.

²¹ Indeed, if we accept the accounts of political scientists, we would say that purely scientific advisory bodies were a novelty after 1945. Krevert, *op. cit.* note 10, 19–26, 67–86, drawing on Hannes Friedrich, *Staatliche Verwaltung und Wissenschaft: Die wissenschaftliche Beratung der Politik aus der Sicht der Ministerialbürokratie* (Frankfurt: Europäische Verlagsanstalt, 1970), 47–75. Pre-1945 advisory bodies deserve more study, however, as Friedrich's conclusions accord too neatly with his sociological framework.

²² Kevles, *op. cit.* note 2; Cochrane, *op. cit.* note 3; Varcoe, *op. cit.* note 2; MacLeod and Andrews, *op. cit.* note 2; Joan Austoker and Linda Bryer (eds.), *Historical Perspectives on the Role of the MRC: Essays in the History of the Medical Research Council and its Predecessor, the Medical Research Committee, 1913–1953* (Oxford: Oxford University Press, 1989); Timothy DeJager, 'Pure Science and Practical Interests: The Origins of the Agricultural Research Council, 1930–1937', *Minerva*, XXXI (1993), 129–150; cf. Roy M. MacLeod and E. Kay Andrews, 'The Committee of Civil Research: Scientific Advice for Economic Development 1925–30', *Minerva*, VII (1969), 680–705. For background see also Frank M. Turner, 'Public Science in Britain, 1880–1919', *Isis*, LXXI (1980), 589–608; Roy MacLeod, 'Science for Imperial Efficiency and Social Change: Reflections on the British Science Guild, 1905–1936', *Public Understanding of Science*, III (1994), 155–193. The Royal Society was occasionally cited as a model but not followed up: WHM Korrespondenz 1949, Blount to Heisenberg, 3 May 1949.

links with industry. On occasion, the DFR also drew analogies with the new research council system set up under American direction in post-war Japan.²³ These all seemed to mesh with the established model of the *Beirat* (advisory council), familiar in Germany since the nineteenth century. When the DFR stated its goals, however, it cited foreign models rather than German precursors. Similarly, the council made much use of statistics on the research spending of Great Britain and the United States (and occasionally the Soviet Union).²⁴ For the Federal Republic, however, such levels of support remained out of immediate reach, and as a concrete measure, the DFR drew comparisons with smaller European countries, even East Germany.²⁵

The comparative argument was backed up by a grand historical narrative. Modern society, the story went, was dependent upon scientific knowledge. This created a need for the far-sighted promotion of research. Other nations had responded; Germany had not. The DFR dated the origins of the problem before the National Socialists came to power. Then, the Third Reich had patronized pseudoscience, stressed immediate application, and neglected basic research.²⁶ As a new political order was being shaped, an overhaul of the research system became possible, and a shift to federal responsibility seemed the order of the day. Some of the DFR's scientists felt an additional need to grasp the initiative, feeling responsible for having done little during the Third Reich. Their faith in rational scientific thought underwrote their sense of mission.²⁷

Yet these arguments were not without limitations. The international comparisons remained highly schematic. Calls to match foreign spending could be countered by post-war financial realism, while invocations of the research council model presumed the feasibility of straightforward transplantation. To illustrate its ideas, the DFR gave the Chancellor's Office a diagram of the British arrangements, with German equivalents

²³ WHM Heisenberg, Heisenberg to Eickemeyer, 14 June 1949.

²⁴ When the DFR made comparisons with the 'great powers', it left out their military research. See, e.g., WHM Vorgänge A-G, Heisenberg to Adenauer, 2 April 1951.

²⁵ E.g., Heisenberg, 'Schlußwort' at a public meeting of 4 August 1950, in Eickemeyer, *op. cit.* note 9, 217–219, on 218.

²⁶ For instance, Heisenberg, 'Die Not der Deutschen Forschung', in Eickemeyer, *op. cit.* note 9, 211–213, and 'Notwendigkeit wissenschaftlicher Forschung', 216–217.

²⁷ Cathryn Carson, 'New Models for Science in Politics: Heisenberg in West Germany', *Historical Studies in the Physical and Biological Sciences*, XXX (1999), 115–171, 143, citing WHM Heisenberg, Heisenberg to Dölger, 28 December 1950. Compare Adolf Butenandt's comments in WHM Allgemeines 1949, minutes of American-Zone Länderrat, Koordinierungsbüro der Länder, 9 March 1949, reprinted in Heisenberg, *op. cit.* note 14, 72–86, on 82. In the minutes, however, the forceful remarks attributed to Heisenberg in Stamm, *op. cit.* note 8, 130, n. 379, are not present.

simply written in alongside. The system's complications – for instance, the fact that the DSIR was not a research council – played little role in the council's exposition.²⁸ And of the accompanying failures it seemed blithely unaware. The United Kingdom had much experience of poor cooperation between industry and the DSIR; in the United States, the NRC had lost ground by the 1930s, and after the war was riven by conflict about its mission. The research council system was itself in flux. But the debates surrounding the establishment of the Advisory Council on Scientific Policy and the National Science Foundation found little place in the DFR's deliberations, leaving its arguments thin and simplistic.²⁹

The grand historical argument was even more open to challenge, for the council rarely referred to previous arrangements. Yet, by the first decades of the century, German institutions had developed their own dynamics: systems of higher education administered by the *Land* cultural ministers; the Kaiser Wilhelm Gesellschaft of well-funded, high-prestige institutes; industrial laboratories tied to private research programmes; and state medical and technical bureaux.³⁰ The Notgemeinschaft der Deutschen Wissenschaft, heavily subsidized by the central Ministry of the Interior (and soon renamed the Deutsche Forschungsgemeinschaft, or

²⁸ WHM Bundesregierung, Heisenberg to Rust, 8 June 1950. The DFR proposed no counterpart to the DSIR.

²⁹ Ian Varcoe, *Organizing for Science in Britain: A Case-Study* (London: Oxford University Press, 1974); Gummett, *op. cit.* note 4; Cochrane, *op. cit.* note 3; Daniel J. Kevles, *The Physicists: The History of a Scientific Community in Modern America* (Cambridge, MA: Harvard University Press, 1995); Robert Kargon and Elizabeth Hodes, 'Karl Compton, Isaiah Bowman, and the Politics of Science in the Great Depression', *Isis*, LXXVI (1985), 301–318; A. Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities* (Baltimore: Johns Hopkins University Press, 1986); Joel Genuth, 'Groping Towards Science Policy in the United States in the 1930s', *Minerva*, XXV, (1987), 238–268; Glenn E. Bugos, 'Managing Cooperative Research and Borderland Science in the National Research Council, 1922–1942', *Historical Studies in the Physical and Biological Sciences*, XX (1989), 1–32.

³⁰ Frank Pfetsch, 'Scientific Organisation and Science Policy in Imperial Germany, 1871–1914', *Minerva*, VIII (1970), 557–580; Peter Lundgreen, Bernd Horn, Wolfgang Krohn, Günter Küppers, and Rainer Paslack, *Staatliche Forschung in Deutschland 1870–1980* (Frankfurt: Campus, 1986); Alan Beyerchen, 'On the Stimulation of Excellence in Wilhelmian Science', in Jack R. Duker and Joachim Remak (eds.), *Another Germany: A Reconsideration of the Imperial Era* (Boulder, CO, and London: Westview, 1988), 139–168; David Cahan, *An Institute for an Empire: The Physikalisch-Technische Reichsanstalt 1871–1918* (Cambridge: Cambridge University Press, 1989); Jeffrey Johnson, *The Kaiser's Chemists: Science and Modernization in Imperial Germany* (Chapel Hill, NC: University of North Carolina Press, 1990); Vierhaus and vom Brocke, *op. cit.* note 17; Helmuth Trischler, *Luft- und Raumfahrtforschung in Deutschland 1900–1970: Politische Geschichte einer Wissenschaft* (Frankfurt: Campus, 1992).

DFG), had secured its position in the Weimar Republic as chief disbursing officer of grants for basic research. It had experimented with coordinated research projects, made gestures towards industrial interests, and shifted oversight of academic research away from the cultural ministries of the *Länder*.³¹ Although the DFR took little notice, scholars had created many advisory mechanisms. These included diffused, individual contacts in public health and welfare, but also a small number of boards like the Deutscher Forschungsrat for Luftfahrt (German Research Council for Aviation), set up by scientists in 1928.³² Although a comprehensive policy was lacking (and often viewed as contrary to the autonomy of research), the DFR did not start from a clean slate.

Ultimately, these legacies harboured internal tensions. The system had historically juxtaposed scientists against humanists, applied against basic researchers, and practical against cultural justifications. For many, the leading role of the basic sciences was open to dispute. In the practical disciplines, mobilizing knowledge for national goals was hardly a new objective, and the march towards centralized state power could be judged negatively. Science under National Socialism had been more than pseudoscience. The Nazis, too, had called for coordination and *Lenkung* (government oversight, or steering). A *Reich* ministry for scholarship and education had been set up in 1934, and a Reichsforschungsrat in 1937. The latter body, however ineffective, operated in concert with the DFG and assembled an elite group of scientists selected by a high Nazi official.³³

³¹ Brigitte Schroeder-Gudehus, 'The Argument for the Self-Government and Public Support of Science in Weimar Germany', *Minerva*, X (1972), 537–569; Paul Forman, 'The Financial Support and Political Alignment of Physicists in Weimar Germany', *Minerva*, XII (1974), 39–66; Rüdiger vom Bruch and Rainer A. Müller (eds.), *Formen außerstaatlicher Wissenschaftsförderung im 19. und 20. Jahrhundert: Deutschland im europäischen Vergleich* (Stuttgart: Franz Steiner, 1990); Ulrich Marsch, *Notgemeinschaft der Deutschen Wissenschaft: Gründung und frühe Geschichte 1920–1925* (Frankfurt: Peter Lang, 1994); Jochen Kirchhoff, 'Die Forschungspolitischen Schwerpunktlegungen der Notgemeinschaft der Deutschen Wissenschaft 1925–1929 im transatlantischen Kontext', *Dahlemer Archivgespräche*, V (1999), 70–86.

³² Rudolf Stichweh, 'Differenzierung von Wissenschaft und Politik: Wissenschaftspolitik im 19. und 20. Jahrhundert', in *Wissenschaft, Universität, Professionen: Soziologische Analysen* (Frankfurt: Suhrkamp, 1994), 156–173; Rüdiger vom Bruch, *Wissenschaft, Politik und öffentliche Meinung: Gelehrtenpolitik im Wilhelminischen Deutschland (1890–1914)* (Husum: Matthiesen, 1980); Gustav Schmidt and Jörn Rüsen (eds.), *Gelehrtenpolitik und politische Kultur in Deutschland 1830–1930* (Bochum: Studienverlag Dr. N. Brockmeyer, 1986); Trischler, *op. cit.* note 30, 142–156.

³³ Trischler, *op. cit.* note 30; Kristie Macrakis, *Surviving the Swastika: Scientific Research in Nazi Germany* (New York: Oxford University Press, 1993); Monika Renneberg and Mark Walker (eds.), *Science, Technology, and National Socialism* (Cambridge: Cambridge University Press, 1994); Christoph Meinel and Peter Voswinckel

The DFR's critics highlighted such continuities. But the post-war council thought the parallels misleading, and ignored them.³⁴

ORIGINS

In the immediate aftermath of the Second World War, questions of scientific administration were interwoven with issues of political jurisdiction.³⁵ For the occupying powers, the intention was first to confine German science and technology to fields where they did not pose a threat. In some regions, however, the Allies developed an active interest in supporting research, and so the new *Land* governments had to fight to define their jurisdiction. At Allied insistence, Research Supervision Offices (*Forschungsüberwachungsstellen*) were placed within the emerging *Land* economics administrations.³⁶ This affiliation caused friction, as *Land* cultural ministers also staked their claims. The historical connection of research with the universities and with scholarly and cultural life was balanced against economic and industrial policy.³⁷ By 1946–1948, the Allies were creating authorities above the *Länder*, at the level of the occupation zones and then bi- and tri-zonally. The *Länder* then found themselves defending their positions *vis-à-vis* the economic administrations that were the precursors of the federal government (which was established in the autumn of 1949). The pattern of confrontation, indicative of federalist-centralist debates, was most disturbing to the cultural

(eds.), *Medizin, Naturwissenschaft, Technik und Nationalsozialismus: Kontinuitäten und Diskontinuitäten* (Stuttgart: Verlag für Geschichte der Naturwissenschaften und der Technik, 1994); Klaus Hentschel, introduction to *Physics and National Socialism: An Anthology of Primary Sources* (Basel: Birkhäuser, 1996), xv–ci; Notker Hammerstein, *Die Deutsche Forschungsgemeinschaft in der Weimarer Republik und im Dritten Reich* (München: C.H. Beck, 1999); Doris Kaufmann (ed.), *Geschichte der Kaiser-Wilhelm-Gesellschaft im Nationalsozialismus: Bestandaufnahme und Perspektiven der Forschung* (Göttingen: Wallstein, 2000).

³⁴ On the 1920s see WHM Korrespondenz 1949, Heisenberg to Lehnartz, 29 August 1949; WHM Bundesregierung, Martini to Globke, 7 January 1950. For the Third Reich, the documents rarely mention either the Nazis' organizational innovations or the grounds for their defeat. If Heisenberg was guided, as sometimes suspected, by his experience in the wartime fission project, he made little reference to it, either publicly or privately.

³⁵ Cassidy, *op. cit.* note 13; Stamm, *op. cit.* note 8; Osietzki, *Wissenschaftsorganisation und Restauration*, *op. cit.* note 8.

³⁶ *Ibid.*, 19–36; David Cassidy, 'Controlling German Science, I: U.S. and Allied Forces in Germany, 1945–1947', *Historical Studies in the Physical and Biological Sciences*, XXIV (1994), 197–235.

³⁷ For an example, see Jürgen Brautmeier, *Forschungspolitik in Nordrhein-Westfalen 1945–1961* (Düsseldorf: Schwann, 1983), 51–66.

ministers. They demanded cultural decentralization on a pre-1933 pattern (although research funding had in fact gone against that model). In time, similar conflicts would grow within the *Bund*, as the jurisdictions of federal ministries were negotiated. All these government bodies found themselves challenged by scholars claiming rights of self-determination, as in the re-creation of the Kaiser Wilhelm (soon to be called Max Planck) Gesellschaft, whose institutes were scattered across the landscape, defying *Land* and zonal boundaries.³⁸

The DFR grew from the recommendations of a committee of scientists, set up as advisors to the British occupation authorities in Göttingen in January 1946. The committee's membership – including Otto Hahn, Adolf Windaus, Carl Correns, Arnold Eucken, Hermann Rein, and Werner Heisenberg – was drawn from the University of Göttingen and the leadership of the Kaiser Wilhelm Gesellschaft. Many had framed their conceptions in discussion with British scientists after the surrender in May 1945, and especially after the dropping of the atomic bomb in August.³⁹ Affiliated with the Research Branch in the economics wing of the military government, this committee was oriented towards the natural sciences. In practice its allegiance lay with basic, and not with applied research.⁴⁰

The committee occupied itself with such matters as the state of physics and chemistry journals and the reconstruction of institutions. It put less emphasis on research funding and welcomed other initiatives to set up bodies for that purpose. Eventually, however, the Göttingen scientists began to concern themselves with plans for a reconstituted Notgemeinschaft. The driving force behind the new Notgemeinschaft was the *Land* cultural ministers in the British and American zones, who saw a reincarnation of the NG as an opportunity to affirm their jurisdiction *vis-à-vis* zonal and bizonal offices. The Göttingen circle, however, proposed in January 1948 that it be expanded into an authoritative, initially zonal institution. Rein and Heisenberg moved ahead and invited a group of distinguished scholars, predominantly scientists, to discussions.⁴¹ Although the

³⁸ Manfred Heinemann, 'Der Wiederaufbau der Kaiser-Wilhelm-Gesellschaft und die Neugründungen der Max-Planck-Gesellschaft (1945–1949)', in Vierhaus and vom Brocke, *op. cit.* note 17, 407–460; and Hohn and Schimank, *op. cit.* note 13, 98–111.

³⁹ *Operation Epsilon: The Farm Hall Transcripts* (Bristol: Institute of Physics Publishing, 1993).

⁴⁰ Archiv zur Geschichte der Max-Planck-Gesellschaft (Berlin), Minutes of Deutscher Wissenschaftlicher Rat and Wissenschaftlicher Beirat, II/1A, Az. I A 6. The occupying powers may have suggested that they did not want applied scientists to be heavily represented: WHM Heisenberg, Eickemeyer to Heisenberg, 29 August 1949.

⁴¹ E.g., Deutsches Museum (München), Nachlaß Walther Gerlach (hereafter WGM), NL 80, 286, Rein to Gerlach, 21 August 1948, and Heisenberg and Rein to Gerlach,

cultural ministers noted the intention, they found no need for a new body.⁴² In any case, the Notgemeinschaft was formally re-established in January 1949 at a meeting hosted by one of the cultural ministers and attended by the rectors of the Western zones' universities.⁴³

In March 1949, the DFR was officially constituted by the West German academies and the Max Planck Gesellschaft. Even before its first meeting in May, it had begun to press its case.⁴⁴ Most crucially, it provoked the national Constitutional Council to anchor in the West German Basic Law a federal co-competency for the support of research.⁴⁵ Until the federal government came into existence, however, the DFR had to address the *Länder* and zonal and bizonal offices. Heisenberg, the designated president, believed he could win their support, but faced hostility from the cultural ministers and questions about the council's legitimacy.

20 September 1948; WHM Allgemeines 1949, minutes of 27 November 1948. By mid-August, the initiators had settled on a council called into being by scholars on their own.

⁴² Bundesarchiv (Koblenz) (hereafter BAK), Deutsche Forschungsgemeinschaft, B227/508, Minutes of Hochschultagung, 19–20 May 1948; Nordrhein-Westfälisches Hauptstaatsarchiv (Düsseldorf) (hereafter NRWStAD), NW25 Nr. 217, minutes of Conference of Cultural Ministers, 30–31 August 1948; Staatsarchiv (Hamburg) (hereafter StAH), Hochschulwesen II, Wh. 28/1, Bd. 3, Landahl to Teusch, 13 December 1948.

⁴³ Stamm, *op. cit.* note 8, 109–116; Osietzki, *op. cit.* note 8, 227–234. Karl Geiler, legal scholar and former governor of the state of Hesse, was chosen president; Kurt Zierold, a civil servant in the Cultural Ministry of Lower Saxony, was installed as managing vice-president.

⁴⁴ WHM Allgemeines 1949, minutes of preparatory meeting, 28 January 1949; minutes of British-Zone Arbeitsausschuss 'Forschungskontrolle', 4 March 1949; minutes of lecture event sponsored by Länder Coordinating Office of American-Zone Länderrat, 9 March 1949. The statutes are reprinted in Eickemeyer, *op. cit.* note 9, 81–84. Initial members were Heisenberg, Rein, Hahn, Lehnartz, Alfred Benninghoff, Adolf Butenandt, Karl Freudenberg, Walter Eucken, Wolfgang Kunkel, Paul Martini, Friedrich Oehlkers, Erich Regener, Franz Schnabel, Bruno Snell, and Jonathan Zenneck; four-year terms were left open for this first group. They were later joined by Otto Bayer, Gustav Gaßner, Richard Grammel, Hans Piloty, Rudolph Plank, Bernhard Schweitzer, and Albrecht Unsöld. Eucken died during his term of office.

⁴⁵ WHM Allgemeines 1949, Zenneck, Regener, Heisenberg, and Rein to the Parlamentarischer Rat, 15 December 1949. On the initiative, which opened up years of conflict, see, e.g., Cassidy, *op. cit.* note 13; Hohn and Schimank, *op. cit.* note 13; and Hans Wenke, 'Die Kulturverwaltung im Verhältnis von Bund und Länder', in Theodor Maunz (ed.), *Vom Bonner Grundgesetz zur gesamtdeutschen Verfassung: Festschrift zum 75. Geburtstag von Hans Nawiasky* (München: Isar, 1956), 269–297. The *Länder* attitude was expressed in the Königstein Agreement of March 1949, which denied *Land* financing to any research institution that took *Bund* money.

COORDINATION AND DIVISION OF LABOUR

The DFR's mandate included the coordination of research, and as it bolstered its position, that interest grew. The DFR had to create cross-linkages with the *Land* research councils and pull in the bizonal advisory bodies for economic, nutritional, and medical advising.⁴⁶ Another new body, the Fraunhofer Gesellschaft, identified itself with applied science. The DFR was anxious to win its cooperation, as it was disturbed by moves to decouple applied from basic research.⁴⁷ However, the Fraunhofer Gesellschaft's existence underlined concerns that the council might not do well with industry and economic administrators.⁴⁸

The DFR faced another task in dealing with the Notgemeinschaft. Heisenberg and Rein wrote in an early circular, '[W]e do not consider the recent establishment of the Notgemeinschaft a constraint or a disadvantage, as it has other tasks than the [DFR], and the financial resources it administers are only a part of those which will be secured through the [DFR].'⁴⁹ While some in the NG were welcoming, and others more skeptical, all saw the need to reconcile jurisdictional conflicts.⁵⁰ From the beginning, negotiations with the increasingly well-situated Notgemeinschaft contributed to the definition of the DFR's goals. Its most important product, its president said, would be 'advising' (*Beratung*). The gaining and distribution of funds it would leave to the Notgemeinschaft, and this plan seemed workable.⁵¹ But the ambiguities of the term 'advising' quickly became plain. Thus, the council called for overall targeting and prioritizing, provoking some in the NG to wonder whether it was destined to become merely a disbursement bureau.⁵² Critics centered around

⁴⁶ WHM Allgemeines, minutes of 27 November 1948 and 4 March 1949. A medical advisory board had not yet come into existence.

⁴⁷ WHM Heisenberg, Heisenberg to Eickemeyer, 20 April 1949; Trischler and vom Bruch, *op. cit.* note 13; Hohn and Schimank, *op. cit.* note 13, 181–190.

⁴⁸ BAK, Bundesministerium für Wirtschaft, B102/40350, Josten to Heisenberg, 23 March 1949; WGM 286, Würth, note on meeting of Arbeitsausschusses 'Forschungskontrolle', 6 July 1949. Encouragement from the bi-zonal economics agencies came with suggestions for more applied research.

⁴⁹ WHM Allgemeines 1949, Heisenberg and Rein to colleagues, 12 January 1949; cf. NRWHStAD NW 25 Nr. 216, Heisenberg to Teusch, 10 March 1949.

⁵⁰ WGM 286, Gerlach to Lehnartz, 1 April 1949.

⁵¹ The one exception was money from abroad, but that too the DFR would hand over to the Notgemeinschaft. See WHM Allgemeines 1949, minutes of 13 May 1949; WGM 286, Gerlach to Geiler, 15 May 1949; WHM Notgemeinschaft, Heisenberg to Geiler, 2 June 1949.

⁵² BAK B227/554, 'Notgemeinschaft der deutschen Wissenschaft und Deutscher Forschungsrat', n.d., with corrections in Zierold's hand and formulations picked up

managing vice-president Kurt Zierold, who saw the DFR presuming to be a scientific 'House of Lords', or revealing totalitarian ambitions reminiscent of the Third Reich.⁵³ And although Ludwig Raiser, the Göttingen rector, understood that the problem was not some absolute claim to domination, the DFR's self-conception differed from the traditional values he saw re-established in the Notgemeinschaft.⁵⁴

There were other difficulties. The presidents of the two organizations got along poorly, and even attempts to meet turned into a fiasco of missed appointments.⁵⁵ As a side effect, each organization grew more critical of the deficiencies of the other. The DFR was convinced, for example, that the NG could not exercise a representative and advisory function; indeed, from its origins, it had never claimed to.⁵⁶ Less charitable, although only partly ungrounded, was the council's suspicion that the Notgemeinschaft did not speak for researchers, but was controlled by a non-academic administrator and the cultural ministers.⁵⁷

For its part, the Notgemeinschaft, and particularly Zierold, found much to criticize in the DFR. Sharply expressed and disseminated, these charges proved influential.⁵⁸ Foreign models, it was argued, were anything but exemplary. Instead they threatened the autonomy of research. Memories

in WHM Notgemeinschaft, Geiler to Heisenberg, 11 July 1949. Cf. BAK B227/558, Eickemeyer to Deutscher Verband Technisch-Wissenschaftlicher Vereine, 27 May 1949.

⁵³ BAK B227/554, 'Notgemeinschaft und Forschungsrat', 21 March 1949, with corrections in Zierold's hand; Niedersächsisches Hauptstaatsarchiv (Hannover), Nds. 401, Acc. 92/85, Nr. 125, excerpt from minutes of Conference of Cultural Ministers, 20–21 April 1949; WHM Notgemeinschaft, Zierold to Heisenberg.

⁵⁴ BAK B227/554, Raiser to Zierold, 7 July 1949.

⁵⁵ WGM 286, Gerlach, notes on phone conversations with Zierold, 9 May 1949, and with Heisenberg, 11 May 1949. The arrangements, which have been variously described on an anecdotal basis, are documented in WHM Notgemeinschaft and WGM 286. On the ensuing fuss by Zierold see WGM 286, Gerlach to Lehnartz, 18 July 1949; Raiser to Zierold, 24 August 1949; BAK B227/554, Hahn to Zierold, 9 September 1949; Zierold to Hahn, 12 September 1949; and the excerpt from a letter of Geiler to an unspecified recipient, 20 August 1949.

⁵⁶ WHM Korrespondenz 1949, Heisenberg to Hundhammer, 17 May 1949; WHM Allgemeines 1949, 'Memorandum über die Organisation der wissenschaftlichen Forschung in Deutschland, Alte Fassung', n.d. [early November 1949].

⁵⁷ On Zierold's connections to the cultural ministers, see BAK B227/528, Teusch to Zierold, 23 December 1948. On his power within the Notgemeinschaft, see, e.g., WHM Korrespondenz 1951, Piloty to Heisenberg, 16 July 1951.

⁵⁸ BAK B227/554, [Zierold,] 'Notgemeinschaft der Deutschen Wissenschaft und Deutscher Forschungsrat', n.d.; Zierold, 'Wissenschaftliche Forschung heute', *Industriekurier* (Düsseldorf), 29 October 1949; Zierold, 'Sechs Monate Notgemeinschaft: Ein Rechenschaftsbericht', *Deutsche Universitätszeitung* (Göttingen), 2 December 1949. Some of these criticisms seemed like genuine concerns, while others suggest a Notgemeinschaft more interested in eliminating a perceived rival.

of the Third Reich could always be evoked by use of the thoroughly ambiguous notion of *Lenkung*, construed either as 'efficient coordination' or as 'authoritarian direction'. Some NG speakers, notably those from the cultural ministries, went so far as to suggest that 'scientific advising' was unimportant for a country at peace, pointedly criticizing the DFR for taking its cue from the Third Reich. Such remarks the DFR largely ignored, reiterating that its models came from the democratic nations.⁵⁹ But the Notgemeinschaft also renewed criticisms of the DFR's overemphasis on basic science, and challenged its casual attitude towards balance and representation. When the DFR replied that it chose its members as respected personalities, not as representatives of specialties, it had to admit that it honoured the principle only in the abstract. The Notgemeinschaft also criticized the DFR for not including the universities among its founders. Finally, was the NG itself not a better representative of German research? Criticizing the council's structure as undemocratic, the Notgemeinschaft profiled its elected peer review committees as exemplars of democracy. Why was a Forschungsrat needed at all?

While the DFR argued for complementary missions, the Notgemeinschaft seemed to frame an exclusive alternative. In October 1949, despite these difficulties, high-ranking representatives of the two bodies reached an agreement.⁶⁰ However, the Notgemeinschaft's central committee declined to ratify the programme.⁶¹ The DFR had, in fact, more ambitious plans in mind.

HIGH-LEVEL STRUCTURES

The DFR wished to see a coordinating office for science policy established at the seat of the new federal government. Its proposals developed as the *Bund's* outlines took shape in the spring and summer of 1949.⁶² The DFR had been conferring with several politicians. Of these, one would prove

⁵⁹ WHM Protokolle, minutes of joint Notgemeinschaft-DFR meeting, 31 March 1950, especially the remarks of Rupp, Teusch, and Heisenberg.

⁶⁰ WHM Allgemeines 1949, minutes of 10 October 1949. The two organizations would keep one another informed of meetings and coordinate the creation of special commissions, the DFR would be responsible for domestic and international representation, the Notgemeinschaft would take the lead on all funding, and the DFR would gather money only abroad and then give it to the Notgemeinschaft.

⁶¹ WHM Notgemeinschaft, Lehnartz to Heisenberg, 17 October 1949, two letters (one official, one personal). See Osietzki, *Wissenschaftsorganisation und Restauration*, *op. cit.* note 8, 353–354.

⁶² E.g., WHM Korrespondenz 1949, Heisenberg to Gerlach, 20 June 1949.

crucial. Konrad Adenauer, a powerful figure in the Christian Democratic Union, adopted the idea of a federal coordinating office affiliated with the future Ministry of Economics. The DFR weighed that option, as well as the Interior Ministry, but found itself attracted instead to the Office of the Chancellor. That portfolio corresponded best with the British and American models and would keep science from being swallowed up by either of the two big bureaucracies.⁶³ This plan may not have been wise; with one move, it could alienate the two main federal supporters of research. But the DFR saw it as the best solution. At Adenauer's suggestion, the DFR drew up a memorandum on prospects for a federal role in research, making the case for a small but powerful office to manage the government's institutes, administer federal funds, and maintain connections with other agencies.⁶⁴

As party configurations crystallized, the DFR prepared contacts with other political figures. But providentially, by a narrow vote, Adenauer became Chancellor. (The DFR counted among its members Paul Martini, a clinical researcher who was also Adenauer's personal physician.) At Adenauer's request, the council hurriedly produced a memorandum on the entire research system.⁶⁵ The DFR was the one body to address serious proposals to the new government. Adenauer seemed pleased by its autonomous initiative and its vision of independence, and compared it to the *Bundesbank*. The council, for its part, was pleased by Adenauer's references to research in his first address as new head of government.⁶⁶

⁶³ WHM Korrespondenz 1949, Adenauer to Heisenberg, 6 January 1949, and 14 March 1949; Heisenberg to Adenauer, 15 August 1949; WHM Allgemeines 1949, minutes of 16 July 1949; WHM Heisenberg, Heisenberg to Eickemeyer, 19 November 1949. The DFR was oriented towards the Chancellor's Office by mid-July, before it was clear who would be Chancellor.

⁶⁴ WHM Heisenberg, Eickemeyer to Heisenberg, 20 August 1949; WHM Korrespondenz 1949, Heisenberg to Adenauer (addressing him as Chancellor, which he was not yet officially), 1 September 1949; 'Denkschrift des Deutschen Forschungsrates über die Betreuung der wissenschaftlichen Forschung im Rahmen der Deutschen Bundesregierung', in Eickemeyer, *op. cit.* note 9, 117–121.

⁶⁵ 'Memorandum des DFR über die Organisation der wissenschaftlichen Forschung in Deutschland', in Eickemeyer, *op. cit.* note 9, 122–126, enclosed with BAK, Bundeskanzleramt, B136/5913, Heisenberg to Adenauer, 25 November 1949. In Cassidy, *op. cit.* note 13, 237, n. 147, this memorandum is dated as 19 June 1951, but that document is to be found instead in WHM Vorgänge A-G, Heisenberg to Adenauer, 19 June 1951, with the attachment on nuclear energy found in WHM Abschlussbericht.

⁶⁶ WHM Korrespondenz 1949, Martini to Heisenberg, 8 November 1949; WHM Notgemeinschaft, Martini, notes on conversation with Klauser and Zierold, 22 November 1949. On attitudes towards the *Bundesbank* see Volker Hentschel, 'Die Entstehung des Bundesbankgesetzes 1949–1957: Politische Kontroversen und Konflikte (Teil 1)', *Bankhistorisches Archiv*, XIV (1988), 3–31, on 12. Adenauer's *Regierungserklärung* of 20

Adenauer decided to locate the research portfolio in the Chancellor's Office. But this agreement was not enough. The Interior Ministry and its allies were put off by his directive, which announced that research was in fact being removed from the Ministry's domain – not exactly what the council was suggesting.⁶⁷ Others resisted the Chancellor's proclivity towards concentrating power in his own hands. As a weak compromise, the cabinet in fact budgeted for two staff positions, one in the Interior Ministry, the other in the Chancellor's Office. Parliament confirmed the former, but struck out the latter.⁶⁸

As the federal government's structures were being negotiated, there ensued a tug of war between the Chancellor and the DFR, on one side, and practically everyone else, on the other. In what became a long debate, the Federal Interior Ministry was supported by the *Land* cultural ministers. The coalition was not a natural one: the Federal Interior Ministry wanted expanded federal powers and stressed the unity of research and education, while *Land* officials wished to limit the *Bund's* constitutional co-competency and were determined that no central education office should ever be established.⁶⁹ Such a strange alliance, which had no parallels abroad, had not occurred to the DFR. However, with common enemies in the DFR and the Chancellor, the federal Interior Ministry and the *Länder* found common cause. And in this they were joined by the Notgemeinschaft. Whoever dealt with the Chancellor would alienate the cultural ministers, warned Walther Gerlach, NG vice-president and rector of the University of Munich. The cultural ministers were allies whom basic researchers could not afford to offend.⁷⁰ So the Notgemeinschaft opened an attack on the solution it had initially accepted, drawing on political and personal connections, and suggesting to ministry officials that Heisenberg,

September 1949 is reprinted in his *Reden 1917–1967: Eine Auswahl*, Hans-Peter Schwarz (ed.), (Stuttgart: Deutsche Verlagsanstalt, 1975), 153–169.

⁶⁷ BAK B136/5913, Globke to Interior Minister, 20 October 1949; Heinemann to Adenauer, 7 December 1949; WHM Korrespondenz 1950, Heisenberg to Martini, 3 January 1950.

⁶⁸ BAK, Bundesministerium für Bildung und Wissenschaft, B138/1454, Heinemann to Hundhammer, 23 December 1949; Parlamentsarchiv, Deutscher Bundestag (Bonn), 1. Bundestag, minutes of Ausschuß für Kulturpolitik, 7 December 1949, and of Haushaltsausschuß, 12 January 1950.

⁶⁹ WHM Allgemeines 1949, Stein, 'Denkschrift über die Organisation der wissenschaftlichen Forschung und des kulturellen Lebens im Bund und in den Ländern', 29 September 1949.

⁷⁰ WHM Korrespondenz 1949, Gerlach to Heisenberg, 12 November 1949.

‘with our scholars’ usual primitive thinking’, wanted science policy in the Chancellor’s Office so as to manipulate it more easily.⁷¹

The outcome was a compromise and a delay. Despite having the ear of the Chancellor, the DFR failed to have the portfolio set up speedily. In the meantime, research matters were taken care of by the Interior Ministry. The first signs of a deal with the Chancellor’s Office came in late summer 1950, not long before the resignation of the Interior Minister. Only in October 1950 was the coordinating post established, and its occupant’s responsibilities were divided between the Chancellor’s Office and the Interior Ministry.⁷² Adenauer evidently found this solution adequate, if not to his taste.

FUNDING INITIATIVES

Federal research funding was another important but tangled issue. The federal government did not have an independent budget until April 1950. The DFR’s earliest efforts had therefore to focus upon the Marshall Plan. The cause looked weak, but in the late autumn of 1949 the DFR successfully argued for a four-million Deutsche Mark contribution to the *Notgemeinschaft*, amounting to more money than all the *Land* ministers together could deliver. Moreover, in a hasty effort over the Christmas holidays, the council’s members reviewed some three hundred proposals collected by the central economics officials.⁷³ Dismayed by their hit-or-miss quality, the DFR pressed for better coordination. It thereby managed to secure representation on the oversight committees, and Heisenberg personally approached officials in Washington.⁷⁴ On the whole, the Marshall Plan operation unfolded in the way the DFR had hoped.

⁷¹ RMD 115, Gummert to Geiler, 13 December 1949; RMD 113, Studders to Blank, 12 January 1950; RMD 140, Gummert to Teusch, Heinemann, Geiler, and Zierold, 13 January 1950; BAK B138/1454, Zierold to Interior Minister, 7 November 1949, with attached draft; BAK, Bundespräsidialamt, B122/315, Zierold to Bott, 23 November 1949 and 2 December 1949; BAK B138/1454, Schaar, notes on conversation with Zierold, 13 January 1950 and further notes, 14 January 1950 (with the remarks cited in quotation marks in the original).

⁷² BAK B138/1454, Schaar, brief for the Interior Minister, 21 August 1950; BAK B136/5913, Globke to Interior Minister, 13 October 1950. The position went to Theodor Ritterspach, later appointed to the Federal Constitutional Court.

⁷³ WHM Korrespondenz 1949, Heisenberg to Nordstrom, 20 April 1949; WHM Protokolle, minutes of 12 December 1949; WHM Allgemeines 1950, Heisenberg to Hinsch, 5 January 1950; WHM Allgemeiner Schriftwechsel, Heisenberg to DFR members, 12 January 1950.

⁷⁴ WHM Bundesregierung, Heisenberg to Blücher, 8 July 1950; WHM non-DFR files, 1996 collection, Blücher to Heisenberg, 17 July 1950; WHM Vorgänge J-Schu, Bayer to Heisenberg and Eickemeyer, 19 October 1950; WHM loose, minutes of 28 October 1950

The DFR's long-term interest was to anchor research in the annual federal budget. But while the DFR continued to make plans with the Chancellor, the Notgemeinschaft began quiet inquiries with other ministries. It may have been in the Notgemeinschaft's brief to solicit federal funding; it was not so dependent on the *Länder* as the DFR believed. It showed an interest, however, in using funding commitments to secure its position against the DFR. Within weeks of a visit by Kurt Zierold, its administrative chief, an Interior Ministry staffer submitted a budget request that followed the NG's line. It argued that the *Bund should* fund the Notgemeinschaft because the *Bund could* fund the Notgemeinschaft, and four million Deutsche Marks would match the *Länder* contributions.⁷⁵

Of this sum, half was actually appropriated. But more significant than the amount, was the pattern established. When the Chancellor's Office sought to fund research with half a million Deutsche Marks of its own, the DFR was rightly skeptical that the proposal would succeed.⁷⁶ Once the research coordinating post was set up, Adenauer launched his own initiative with a projected budget of a hundred million Deutsche Marks, and the DFR worked out guidelines for disbursement in fields of practical and industrial urgency.⁷⁷ This would have given substance to the council's claim to broker aid for applied research. But in ensuing negotiations, the project shrank drastically.⁷⁸ The Notgemeinschaft, for its part, became a test case in the confrontation between *Bund* and *Länder*. And if the *Land* cultural ministers expressed initial displeasure at the *Bund's* mixing in, they rapidly came to bargain for its participation.⁷⁹ In the histories of *Bund-Länder* conflict, the readiness with which the parties reached accom-

and 15 May 1951; WHM Protokolle, minutes of 2 December 1950; BAK B136/2028, Ritterspach to Heisenberg, 29 March 1951.

⁷⁵ BAK B138/9778, *Begründung* of budget request, 1 February 1950. For the prehistory see BAK B138/1454, Schaar, notes on conversation with Zierold, 13 January 1950 and further notes, 14 January 1950; BAK 227/707, Pretsch to Zierold, 20 January 1950, with a draft of a letter from Zierold to Hintsch; Zierold to Pretsch, 31 January 1950.

⁷⁶ WHM Bundesregierung, Heisenberg to Rust, 8 June 1950; minutes of cabinet meeting of 29 August 1950, in Hans Booms (ed.), *Die Kabinettsprotokolle der Bundesregierung*, vol. 2, 1950 (Boppard am Rhein: Harald Boldt, 1984), 647–648.

⁷⁷ WHM Korrespondenz 1951, Heisenberg to Bayer, 14 March 1951; WHM Abschlussbericht, Heisenberg to Adenauer, 2 April 1951; BAK B136/2028, Ritterspach, Stellungnahme, 9 April 1951; WHM Bundesregierung, Martini to Heisenberg, 18 June 1951; WHM Vorgänge A-G, Heisenberg to Adenauer, 19 June 1951.

⁷⁸ WHM Vorgänge A-G, Adenauer to Heisenberg, 17 July 1951; BAK B136/2028, Schäffer to Chancellor, 6 August 1951; WHM Vorgänge A-G, Wende to Heisenberg, 21 February 1952.

⁷⁹ BAK B138/1689, Fischer-Menshausen, notes on meeting of *Länder* cultural and finance ministers of 16 June 1950; cf. BAK B227/707, Keim to Zierold, 19 June 1950.

modation has gone largely unremarked.⁸⁰ Ironically, the DFR's leadership had proved effective, but only by dint of threatening others into action.

PRACTICAL INITIATIVES

All these arguments were played out in the realm of high policy. At a lower level, the DFR found it had little more leeway. One of its basic goals was to win the support of the researchers it was supposed to represent. Within months, its initial constitution – based upon the academies and the Max Planck Gesellschaft – was no longer sufficiently comprehensive. As the big scholarly associations were re-established (for instance, the Society of German Chemists and the German Society for Sociology), they had to be brought on board. Reinforced by the advice of foreign advisers, who pointed to the American model, the DFR set out to create a consultative auxiliary, or *Beirat*.⁸¹ The addition necessitated a change in statutes, whose ratification took until early 1951.

Meanwhile, the DFR was criticized for slighting certain fields of scholarship. Insisting that it chose members as individuals, and not as representatives of specialties, the DFR nonetheless faced the problem of their disciplinary demarcation. In the summer of 1949, there was an incentive to neutralize external threats to establish a separate council for applied science.⁸² The piecemeal integration of four new applied scientists partly satisfied its critics, although the DFR never managed to do much for these fields. The humanists (*Geisteswissenschaftler*), on the other hand, were less easily satisfied. Despite the DFR's protestations of universality, its bias towards the natural sciences never wavered. It was not surprising that spokesmen for the humanities tenaciously demanded a redistribution

⁸⁰ By mid-summer 1950, barely a year after the Königstein Agreement, the *Länder* had negotiated a preliminary accord with the Interior Ministry; by the summer of 1951, they were themselves arguing the *Bund*'s obligation to fund research. The interest of all parties was to 'rationalize' funding, meaning to reduce duplication and locate decision-making in their own hands. Cf. Müller, *op. cit.* note 8, 65–66, 95. The discussions are documented in BAK B136/2028 and B138/1522; see also the minutes of the cabinet meetings of 29 August 1950, 27 October 1950, and 9 January 1951, in Booms, *op. cit.* note 76, 647, 763–764, and vol. 3, 1951 (Boppard am Rhein: Harald Boldt, 1988), 59.

⁸¹ WHM Korrespondenz 1949, Heisenberg to Fraser, 9 November 1949; WHM Protokolle, minutes of 12 December 1949. The first meeting with the *Beirat* was held on 15 June 1950; its members are listed in Eickemeyer, *op. cit.* note 9, 156–159.

⁸² WHM Korrespondenz 1949, Heisenberg to Gerlach, 20 June 1949; K.W. Wagner to Heisenberg, 6 July 1949; BAK, Bundesministerium für Ernährung, Landwirtschaft und Forsten, B116/15506, Wagner to Chancellor, 25 October 1949; WHM Heisenberg, Eickemeyer to Heisenberg, 4 February 1950.

of seats and a revision of statutes. They also proved some of the most vigorous critics of the DFR's programme, raising fears about authoritarian planning and questioning the need for 'advising' at all.⁸³

Alongside these internal measures, the DFR looked outwards. For example, it commented upon Allied regulations for the control of German research (although the authorities saw little need of its help). Heisenberg took up the matter in Washington, and joined with the Stifterverband für die Deutsche Wissenschaft (the Notgemeinschaft's new partner association of industrial donors) in negotiations to create an American 'Society of Friends of German Scholarship'.⁸⁴ With the encouragement of the Chancellor's Office, the DFR gathered data on the slow rebuilding of university facilities, in the hope of incorporating their reconstruction into federal job creation programmes.⁸⁵ The council then launched an effort to persuade the cultural ministers to free up money for the universities by passing responsibility for the Max Planck Gesellschaft to the *Bund*. The notion did not find sympathy, however.⁸⁶ And if the council initially welcomed the idea of a scientific advisory service for the federal parliament, it quickly drew back when Adenauer objected.⁸⁷

As defined in its provisional agreement with the Notgemeinschaft, the council's programme included the erection of interdisciplinary commissions to study matters of public welfare – for instance, mining conditions or cancer. This was the first way in which the council could prove itself scientifically, and Heisenberg was anxious to see it make progress.⁸⁸ Adolf

⁸³ E.g., WHM loose, draft minutes of 16 January 1951; WGM 286, Baethgen to Heisenberg, 26 July 1951; Ritter to DFR, 23 July 1951.

⁸⁴ On research control see WGM 286, Würth, note on meeting of 6 July 1949; WHM Vorgänge A-G, Heisenberg to Lauder, 15 April 1950; WHM loose, minutes of 28 October 1950. Material on American negotiations is in WHM Vorgänge A-G and Schw-Z.

⁸⁵ While the Interior Ministry at first greeted the initiative, the Economics Ministry and *Land* cultural ministers shot back that this was none of the DFR's business. BAK B106/2336, Interior Ministry to Eickemeyer, 15 March 1950; Hundhammer to Interior Minister, 26 April 1950; Erhard to Heisenberg, 2 May 1950. The data are presented in Eickemeyer, *op. cit.* note 9, 53–58.

⁸⁶ WHM Allgemeines 1950, Heisenberg, notes on Conference of Cultural Ministers, 19 January 1951; WHM Korrespondenz 1951, correspondence between Heisenberg and Oehlkers of February 1951; WGM 286, Gerlach to Heisenberg, 22 March 1951.

⁸⁷ WHM Bundesregierung, Eickemeyer to Adenauer, 29 August 1950; Martini to Eickemeyer, 6 September 1950; Eickemeyer to Heisenberg, Rein, and Martini, 10 October 1950.

⁸⁸ WHM Heisenberg, Heisenberg to Eickemeyer, 15 October 1949. On interdisciplinarity see Maria Osietzki, 'Die Physik im Kontext der Disziplinen: Wissenschaftliche Politikberatung und "Sozialkompetenz" im Deutschen Forschungsrat 1949–1951', in Dieter Hoffmann (ed.), *Physik und Physiker in Deutschland nach dem Zweiten Weltkrieg (1945/1955)*, (Frankfurt: Harri Deutsch, forthcoming).

Butenandt's commission on food colourings and other additives became a model of scientific advice.⁸⁹ However, these commissions sparked conflict with the Notgemeinschaft which, citing precedents from the Weimar years, insisted that it should be able to create commissions of its own.⁹⁰ The hope of providing practical guidance to science-based industry was never fulfilled.

The council also intended to serve as a point of contact for German scientific representation abroad. This raised issues of federal recognition. The DFR took upon itself the task of negotiating entry into the International Council of Scientific Unions (ICSU), in which each member country is represented by its national academy or research council.⁹¹ The ICSU insisted upon having the formal approval of the relevant authorities.⁹² And the newly established *Bund*, for all the Chancellor's unofficial support, was not anxious to give it, at least not until the *Bund* was more independent of the *Länder*.⁹³ In the autumn of 1950, the ICSU intimated that the Federal Republic could have been admitted if the DFR had merely presented approved and final statutes. Fears now arose that the (East) Berlin Academy of Sciences would make a bid for all of Germany.⁹⁴ The process dragged on, and by the time the council had statutes ready, the situation had again changed dramatically.

COORDINATION AND FUSION

The DFR repeatedly emphasized the need for Germany to have a unified research system. Yet, cooperation proved elusive. Following the aborted agreement of October 1949, relations with the Chancellor and the Notgemeinschaft dominated the council's agenda. At the end of the day, in

⁸⁹ Eickemeyer, *op. cit.* note 9. For background, see Robert N. Proctor, *The Nazi War on Cancer* (Princeton: Princeton University Press, 1999), 165–170; on continuation by the DFG, Carl-Heinz Schiel, 'Entscheidungshilfe für die Politik', *Forschung: Mitteilungen der DFG*, 3 (3–4), (1985), 45–46.

⁹⁰ WHM, Notgemeinschaft, minutes of Notgemeinschaft Central Committee and Presidium, 1 August 1950; WHM loose, minutes of 28 October 1950; WHM Protokolle, minutes of DFG committee, 2 December 1950.

⁹¹ Stamm-Kuhlmann, *op. cit.* note 17.

⁹² See WHM Korrespondenz 1949 and Vorgänge J-Schu for correspondence with Fraser.

⁹³ WHM Heisenberg, Eickemeyer to Heisenberg, 10 November 1949; WHM Protokolle, minutes of 12 December 1949; WHM Korrespondenz 1950, Globke to DFR presidium, 26 June 1950; WHM Heisenberg, Heisenberg to Eickemeyer, 21 July 1950; WHM Vorgänge J-Schu, von Muralt to Heisenberg, 26 September 1950.

⁹⁴ WHM Bundesregierung, notes on conversation among Fraser, Rein, and Heisenberg, 28 October 1950; Eickemeyer to Ritterspach, 14 November 1950.

August 1951, the council was fused with the Notgemeinschaft – absorbed into a larger coordinating body that stood in a different relation to the Chancellor. How did the two organizations, with all their dissimilarities, finally move to formal unification? For the DFR, the decision to fuse was sudden, but once made, held to tightly. The DFR was determined to secure its functions in an environment dominated by the larger body, and to retain the Chancellor's support.⁹⁵

In the summer of 1949, early talk of fusion – with the purpose of forming, say, a new organization headed by Heisenberg – ran aground on the hesitations of the DFR president, who saw the two bodies as complementary but distinct.⁹⁶ In the spring of 1950, under pressure from the Stifterverband, a Deutsche Forschungsgemeinschaft (DFG) was set up as a loose association stopping short of fusion.⁹⁷ Coordination of DFR and NG was to be worked out by a committee. Within a month, the Notgemeinschaft and DFR agreed to assign international representation to the latter. New channels of communication also permitted a joint public relations campaign.⁹⁸ But progress on other matters was negligible. Perhaps, as one observer quipped, the committee should have adopted the *other* two components of its constituents' names: instead of the Forschungsgemeinschaft (Research Association), the Not-Rat (Council of Last Resort).⁹⁹ In its first eight months it met only once. By December 1950, relations had deteriorated completely.

Out of this crisis a consensus finally emerged. After bitter confrontations in January 1951, leaders of the Notgemeinschaft and the DFR

⁹⁵ Analysts have offered different interpretations of the route to fusion, which, on even a superficial reading, was characterized by discord and manoeuvring. The manoeuvring means, however, that the strategies become clear only when we have documentation of both sides' intentions. Stamm, *op. cit.* note 8, 121–150; Osietzki, *op. cit.* note 8, 344–368; Müller, *op. cit.* note 8, 76–77; Cassidy, *op. cit.* note 8, 536–537; Cassidy, *op. cit.* note 13, 237–238.

⁹⁶ WGM 286, Geiler to Gerlach, 23 July 1949; WHM Korrespondenz 1949, Heisenberg to Freudenberg, 15 August 1949.

⁹⁷ WHM Protokolle, minutes of joint meeting, 31 March 1950; RMD 119, Merton to Vits, 27 March 1950. A few months earlier the Notgemeinschaft had represented itself to the Federal Economics Ministry as speaking for a larger 'Deutsche Forschungsgemeinschaft'. But that body had not existed then, and the DFR recognized behind it Notgemeinschaft pressure to fuse. BAK B102/40350, Hinsch, notes of 21 January 1950; WHM Heisenberg, Eickemeyer to Heisenberg, 4 February 1950, and Heisenberg to Eickemeyer, 7 February 1950.

⁹⁸ RMD 140, minutes of DFG committee, 30 April 1950; *Deutsche Universitätszeitung*, V (16) (18 August 1950).

⁹⁹ WGM 286, Heisenberg to Gerlach, 5 April 1950, citing Richard von Weizsäcker.

drew up plans for a *real* Forschungsgemeinschaft, a new body to be formed by full fusion of the Notgemeinschaft and the DFR. The new DFR within the DFG would no longer simply co-opt its members, but present nominations to a new assembly. This assembly, while starting from the Notgemeinschaft's constituencies, would now include the disciplinary associations from the council's old *Beirat*. A new presidium would be led by a president with far-reaching authority, a construction on the DFR's model. A candidate for the presidency quickly emerged: Ludwig Raiser of the Notgemeinschaft, who had the trust of all sides. In the enthusiasm of the moment, both bodies pressed for a speedy resolution and new statutes. Heisenberg suggested handing over the reins to Raiser immediately.¹⁰⁰

What interests were served by the plan? The Notgemeinschaft would continue to function, while council would gain a broader basis of support. Yet the two organizations were not entirely aligned. The DFR saw difficulties: for example, the apportionment of government seats on the board of trustees to the advantage of the *Länder* at the expense of the *Bund*, and the proposed replacement of the internationally familiar name of 'Research Council' by the designation 'Senate'.¹⁰¹ But the issue that proved most troublesome was the future role of the two administrators, neither of whom had admirers in the other camp. This became a point of conflict because of the power of the Notgemeinschaft's managing vice president, Kurt Zierold – an administrator, not a scholar, within a scholarly organization.

Most parties expected some sort of compromise. However, Zierold threatened to resign unless given a vote in the DFG presidium; Raiser refused to work with two antagonistic subordinates; and Heisenberg personalized the debate with recriminations against Zierold for every actual or imagined act of obstruction.¹⁰² Negotiations continued through the spring of 1951. Within the DFR, fears spread that the Notgemeinschaft's leaders intended to use the DFG to dismantle the council's

¹⁰⁰ WHM loose and Protokolle, minutes of 17 January 1951, and of joint meeting of DFR and Notgemeinschaft Central Committee and Presidium, 17 January 1951. Statutes proposals are collected in WHM Satzungsentwürfe and reprinted in Eickemeyer, *op. cit.* note 9.

¹⁰¹ WHM Vorgänge A-G, Raiser to Heisenberg, 20 February 1951, Heisenberg to Raiser, 21 February 1951, and Heisenberg's marks on draft statutes.

¹⁰² For the first two items see BAK B227/554, minutes of Notgemeinschaft Presidium and Central Committee, 6–8 March 1951. Heisenberg's recriminations are reported in BAK B227/554, Gerlach to Lehnartz, 14 March 1951 and Tellenbach to Zierold, 27 March 1951. The fallout is documented in WHM Notgemeinschaft in correspondence among Heisenberg, Zierold, and Lehnartz.

autonomy. The private opinion of one powerful player came through in a note to Zierold in mid-spring: 'It is high time the Forschungsrat die!'¹⁰³

Heisenberg, sensing the hostility, insisted that it could not be allowed to undermine the fusion.¹⁰⁴ However, he intended to strengthen the DFR's position and turned to its most powerful ally, the Chancellor. The council needed federal approval in order to push forward with ICSU representation. In fact, soon after the January consensus, the DFR had submitted statutes to Adenauer, on the assumption that it would continue to exist in the DFG.¹⁰⁵ The Chancellor had initially been favourable. He saw advantage in being the beneficiary of independent scientific advice, and remained interested in research – partly as an aspect of reconstruction policy, partly as a tactical move *vis-à-vis* the *Länder* and his cabinet. By April, however, his initial endorsement of fusion had given way to reservations, as the once-autonomous council had come to look imperilled.¹⁰⁶ After the spring's tense discussions, Heisenberg persuaded the Chancellor to advance formal recognition – on the condition that the council remain politically autonomous within the DFG, independent in its administration, and not subject to excessive *Länder* influence through the cultural ministers or an unbalanced board of trustees.¹⁰⁷ The effect was limited as the statement was *not* to be made public.¹⁰⁸ The Chancellor also ruled that changes in statutes needed official approval – which to many observers implied authoritarian control. Yet Adenauer was not imposing conditions on the DFR, but was rather following its own suggestions.¹⁰⁹ Looking to

¹⁰³ BAK B227/554, Lehnartz to DFR, 12 April 1951; Lehnartz to Zierold, 25 April 1951. Lehnartz, a member of the DFR and chair of the Notgemeinschaft central committee, headed the DFG working group.

¹⁰⁴ WHM Heisenberg, Heisenberg to Kunkel, 30 April 1951.

¹⁰⁵ WHM Bundesregierung, Eickemeyer to Adenauer, 21 February 1951 (draft of 16 February 1951 in WHM Heisenberg). When the council had provisionally moved ahead on the basis of the old division of labour, fusion had seemed imminent, without concerns for loss of autonomy. Cf. WHM Korrespondenz 1951, Martini to Heisenberg, 16 February 1951.

¹⁰⁶ WHM Korrespondenz 1951, Martini, notes on conversation with Adenauer, 31 March 1951.

¹⁰⁷ WHM Korrespondenz 1951, Martini to Heisenberg, 25 April 1951, and Eickemeyer to Martini, 28 April 1951; WHM Bundesregierung, 'Zur Frage Forschungsrat – Notgemeinschaft', draft with corrections by Heisenberg and Eickemeyer, n.d., with a final version in BAK B136/6044.

¹⁰⁸ WHM Korrespondenz 1951, Adenauer to Heisenberg, 11 May 1951; WHM loose, short minutes, 15 May 1951; WHM Korrespondenz 1951, Martini to Heisenberg, second letter of 28 May 1951.

¹⁰⁹ WHM Bundesregierung, 'Zur Frage Forschungsrat – Notgemeinschaft', draft, final version in BAK B136/6044.

foreign models, the council thought the matter obvious: its existence was pointless unless formally sanctioned by the federal government.¹¹⁰

The DFR's reliance upon the Chancellor almost came back to haunt it. Adenauer continued to be put off by the Notgemeinschaft's proposals for the DFG's structure, particularly the persistent apportionment of government seats on the board of trustees to *Land* advantage.¹¹¹ The DFR had already proposed a stratagem to Adenauer. In order to justify a stronger *Bund* voice in the DFG, the Chancellor should push ahead with plans for vastly expanded federal funding. Indeed, Adenauer began drafting a federal law on research support, and moved forward with the hundred-million-Mark plan that the DFR helped frame. However, the Chancellor now proposed to have the programme overseen by a *new* board of scientific, industrial, and government advisors. It looked as if he might abandon the DFR if it went ahead with the fusion.¹¹² Adenauer intended to ask that the DFG negotiations be put on hold, while he laid out the legal and financial basis for his *own* plans.¹¹³

Heisenberg hastily manoeuvred, in the hope of buying time and solidifying the Chancellor's support for the council and the fusion.¹¹⁴ In the end, against Heisenberg's judgment, the DFR settled on two non-negotiable conditions for fusion: the statutes had to leave open the division of trustee seats between the *Länder* and the *Bund*, and the provision allowing the Notgemeinschaft administrator's promotion to the presidium had to be dropped.¹¹⁵ The best thing, Heisenberg thought, would be to postpone the fusion and restart discussions, with the hope of future agreement.¹¹⁶ And over the objections of the Notgemeinschaft's administrative chief, its

¹¹⁰ For the persuasive effect of these considerations see RMD 150, Gummert, notes on conversation with Konrad Adenauer Jr, 12 July 1951; Merton to Gummert, 20 July 1951; WGM 286, Gerlach, notes, 20 July 1951.

¹¹¹ WHM Korrespondenz 1951, Martini to Heisenberg, 1 June 1951.

¹¹² Adenauer to Konrad Adenauer Jr, 13 June 1951, in Adenauer, *Briefe 1951–1953*, Hans Peter Mensing (ed.), (Berlin: Siedler, 1987), 71–72; WHM Korrespondenz 1951, Heisenberg to Martini, 6 June 1951.

¹¹³ StAH, Hochschulwesen II, Wh 28/1, Bd. 5, Hamburg staffer, note of 29 June 1951; WHM Korrespondenz 1951, Martini, notes on conversation with Adenauer and Globke, 29 June 1951.

¹¹⁴ See WHM Heisenberg for Heisenberg's correspondence between 21 June and 3 July 1951; as well as WHM Korrespondenz 1951, Martini to Heisenberg, 2 July 1951, and Lehnartz to Heisenberg, 6 July 1951.

¹¹⁵ WHM Protokolle, short minutes of 15 July 1951. The council further asked that it be allowed to retain its name, and after Raiser had lost its trust, it recorded its preference on presidential candidates.

¹¹⁶ WGM 286, Heisenberg to Gerlach, 16 July 1951; WHM Bundesregierung, Heisenberg to Globke, 17 July 1951; BAK B136/6044, Heisenberg to Ritterspach, 27 July 1951.

assembly decided not to reject the DFR's conditions. In turn, the cultural ministers found they could compromise on the question of representation. The fusion was agreed on 2 August 1951.¹¹⁷

For the DFR, the result was not ideal. Raiser ended up as president, and the council lost its name. But in the end the compromise seemed workable. Heisenberg and Martini both wrote positively to Adenauer. And if Heisenberg made his involvement contingent upon the government's recognition of the new DFG, he urged his discontented colleagues to become reconciled.¹¹⁸ The new Deutsche Forschungsgemeinschaft submitted its statutes for federal recognition, and the application was granted in January 1952.¹¹⁹ Zierold did not resign, but went on a long holiday.¹²⁰ Heisenberg agreed to become a vice-president, but after seeing the council's work transferred, decided to step down in the spring of 1952. He wrote to a colleague that Raiser ought to be given room to shape the DFG as he saw fit: 'I have faith that he will do it well, without being too optimistic about the realization of the goals for whose sake we founded the Forschungsrat back then. But for these goals the domestic political situation is not favourable yet.'¹²¹

CONCLUSION

The DFR had a very short life – scarcely two and a half years between 1949 and 1951. It achieved several points of its programme, such as involving the *Bund* in research funding, raising financial support, and initiating studies of public interest. For all that, it failed in its central task: making the case for high-level policy advice. Even after the DFG provided legitimation, little came of its advisory agenda.¹²² To succeed in that task, the

¹¹⁷ WGM 286, 'Stellungnahme des Forschungsrats', excerpt from transcript of Rectors' Conference, 1 August 1951; NRWHStAD, NW 25 Nr. 241, minutes of Notgemeinschaft Presidium and Central Committee, 31 July–2 August 1951; WHM Notgemeinschaft, minutes of Notgemeinschaft Constituent Assembly, 2 August 1951.

¹¹⁸ BAK B136/6044, Heisenberg to Adenauer, 4 August 1951; WHM Korrespondenz 1951, Martini to Heisenberg, 16 August 1951; WHM Allgemeines 1950–51, Heisenberg to DFR members, 27 August 1951.

¹¹⁹ WHM Korrespondenz 1951, Martini to Heisenberg, 23 October 1951; BAK B136/5971, Lehr to DFG, 11 January 1952.

¹²⁰ His ensuing negotiations about position and salary are recorded in WHM Marshall-Gelder and DFG Senat.

¹²¹ WHM DFG Korrespondenz, Heisenberg to Butenandt, 5 February 1952; quotation from Heisenberg to Regener, 19 April 1952.

¹²² Ludwig Raiser, 'Deutsche Forschungsgemeinschaft', *Deutsche Universitätszeitung*, VI (15–16) (31 August 1951), 3–4; also more generally Zierold, *op. cit.* note 9, and Nipperdey and Schmugge, *op. cit.* note 9. However, we could use more research on the

DFR had to convince researchers of the need for something more than the re-establishment of funding, and to persuade politicians and administrators to adopt its proposals. In neither realm was the council very successful.

Why then did the DFR ‘fail’? The council was limited by the nature of its programme, which was loosely conceived, and sometimes worked out on the spot. Its views were based on generic, ill-informed comparisons with British and American models. While this scarcely damaged its debating position – no one took its comparisons very seriously – it did march into the fray without having worked out its strategy. It had no real plan for dealing with the *Bund-Länder* conflict, imagining that time would prove centralization inevitable. Convinced that research policy should be decided by scientists, it failed to persuade industrialists or economics officials of this. And ultimately it failed to articulate how it intended to overcome the inevitable tension between ‘freedom’ and ‘planning’ in science.¹²³ Although the council tended to ignore such criticisms – and preferred to view alleged comparisons with National Socialism as merely tactics of opposition – there were structural similarities that it refused to acknowledge. The example of the Reichsforschungsrat might have been better confronted by underscoring the points of difference, or by citing German precedents before 1933. Simply pointing to foreign advisory models did not work; these, too, were conceived in conflict and war and had operational difficulties in peacetime.

To implement its ideas, the council needed politicians who shared its sentiments. Schematic arguments can be an advantage if the political constellation is favourable. The Federal Republic’s oft-invoked *Wissenschaftsgläubigkeit* – its faith in expert solutions and its respect for professors, or at least the readiness of its leaders to make use of their authority – would have suggested a sympathetic reception. Yet the years after 1945 saw little coordinated science policy or central scientific advising. That is not to say that science and politics grew apart. Lower-level, field-specific advisory bodies proliferated. Compared with the DFR’s ambitions, however, their scope was limited.¹²⁴ Even the Wissenschaftsrat,

post-war DFG from a perspective not determined by either Zierold’s lack of interest in scientific advising or the late-1960s distaste for *Steuerung* and *Planung*.

¹²³ It was in good company, but that did not help its case.

¹²⁴ Friedrich, *op. cit.* note 21; Gottfried T.W. Dietzel, *Wissenschaft und staatliche Entscheidungsplanung: Rechts- und Organisationsprobleme der wissenschaftlichen Politikberatung* (Berlin: Duncker & Humblot, 1978); Axel Murswieck, ‘Wissenschaftliche Beratung im Regierungsprozeß’, in Murswieck (ed.), *Regieren und Politikberatung* (Opladen: Leske & Budrich, 1994), 103–119. The counter-example is the German Atomic Commission, which in the absence of other science policy bodies partly moved in to fill the gap.

set up in 1957, remained focused on funding and institutional support; proposals for a wider-ranging body were still too ambitious for both the federal government and the DFG.¹²⁵ By the 1960s, matters began to change, as science policy came onto the political agenda. But even then, measures for long-term, cabinet-level planning never produced an effective body on the DFR model. For better or for worse, the trust in expertise that spawned the Council of Economic Experts did not generate an equivalent body for science.¹²⁶

A key problem was the DFR's relation to the state. In Germany, the state's obligation to support research could be taken for granted. It was not so in the United States before the Second World War, but there, as elsewhere, wartime mobilization centralized leadership.¹²⁷ Even in immediate post-war Japan, scientists had a central government, prime minister, and legislature to address. The *Bund* did not exist when the DFR was established. The Basic Law's assignment of co-responsibility for research created a state of permanent conflict, and the struggle between *Bund* and *Länder* took on ideological overtones. In post-war Germany, the central

¹²⁵ Kurt Pfuhl, 'Der Wissenschaftsrat', in *Wissenschaftsrat 1957–1967* (Bonn: Bundesdruckerei, 1968), 11–21; Gerhard Hess, 'Zur Vorgeschichte des Wissenschaftsrats', in *Wissenschaftsrat 1957–1967* (Bonn: Bundesdruckerei, 1968), 5–10.

¹²⁶ Krevert, *op. cit.* note 10, 86–98, 109–115; Wolfgang Bruder and Nicolai Dose, 'Forschungs- und Technologiepolitik in der Bundesrepublik Deutschland', in Bruder (ed.), *Forschungs- und Technologiepolitik in der Bundesrepublik Deutschland* (Opladen: Westdeutscher Verlag, 1986), 11–75; Wolfgang Krieger, 'Zur Geschichte von Technologiepolitik und Forschungsförderung in der Bundesrepublik Deutschland: Eine Problem-skizze', *Vierteljahrshefte für Zeitgeschichte*, XXXV (1987), 247–271; Helmuth Trischler, 'Planungseuphorie und Forschungssteuerung in den 1960er Jahren am Beispiel der Luft- und Raumfahrtforschung', in Margit Szöllösi-Janze and Helmuth Trischler (eds.), *Großforschung in Deutschland* (Frankfurt: Campus, 1990), 117–139; Andreas Stucke, *Institutionalisierung der Forschungspolitik: Entstehung, Entwicklung und Steuerungsprobleme des Bundesforschungsministeriums* (Frankfurt: Campus, 1993); Joachim Radkau, "'Wirtschaftswunder" ohne technologische Innovation? Technische Modernität in den 50er Jahren', in Axel Schildt and Arnold Sywottek (eds.), *Modernisierung im Wiederaufbau: Die Westdeutsche Gesellschaft der 50er Jahre* (Bonn: J.H.W. Dietz Nachf., 1993), 129–154.

¹²⁷ The liberal justification for corporatist self-administration, reserving public responsibilities for non-state organizations, marked a point of contact between German and American thinking. In funding sources, however, the two countries initially went their separate ways. David M. Hart, *Forged Consensus: Science, Technology, and Economic Policy in the United States, 1921–1953* (Princeton: Princeton University Press, 1998); Gerald D. Feldman, 'The Politics of *Wissenschaftspolitik* in Weimar Germany: A Prelude to the Dilemmas of Twentieth-Century Science Policy', in Charles S. Maier (ed.), *Changing Boundaries of the Political: Essays on the Evolving Balance Between State and Society, Public and Private in Europe* (Cambridge: Cambridge University Press, 1987), 255–285; Braun, *op. cit.* note 10.

government remained tarnished by its association with the war and the Third Reich. A national science policy was more than problematic.

In fact, the idea of a policy for science caused trouble after 1945. The difficulty was not so much that politicians were actively hostile to the idea – most opposition to the DFR seems to have come from elsewhere – but that they saw in it little positive merit. The possibility of such a thing, as reality, not rhetoric, was in many ways a wartime legacy. This was true both conceptually and in practice. In post-war Germany, defeat was not framed as a lost technical contest.¹²⁸ And in practice, German scientists did not come out of the war with any notable legacy. In the Allied war effort, pure scientists demonstrated their practical utility. Their experience justified post-war science policy in Britain and the United States, but there was no analogue in Germany.¹²⁹

Other reasons for ‘failure’ look to the DFR’s base of support. Without budgetary authority, the DFR had no natural constituencies. If it was not actually self-constituted (as the *Notgemeinschaft* liked to say), but drew its legitimation from the academies, the Max Planck Gesellschaft, and later the disciplinary associations, it seemed inattentive to calls for democratic structures. Along with the legitimate objections that thus posture might provoke, it could be exploited by opponents whose own democratic commitment sometimes seemed more rhetorical than substantive. Its balance between different branches of scholarship was contestable. Would British or American humanists have complained – or would anyone have listened – if given four seats out of twenty on a National Research Council?

The council’s programme then played out in a force field that polarized participants into pro- and anti-DFR camps. The divisions often reflected structural conflicts inherent in the military occupation, the claims and counter-claims of *Bund* and *Länder*, and jurisdictional struggles within the federal government. Above all, that the DFR identified its position with the federal Chancellor’s generated much of the opposition it faced. Adenauer showed some genuine concern for science, but this was mixed with tactical calculation. That the council lacked the *Notgemeinschaft*’s insight into the need to find allies, or Zierold’s ministerial contacts and coalition-building skills, left it dependent upon a Chancellor who was less powerful than it had hoped.

Many structural difficulties had parallels abroad. In other countries as in Germany, an orientation towards the head of government was the

¹²⁸ Even for economic reconstruction, the appeal of a coordinated science policy seems to have been modest. This goes beyond the present story; the reasons bear further study.

¹²⁹ Except as industrial managers, German scientists had not found their way into powerful positions – not that this would have been unequivocally advantageous after 1945.

rule. Struggles for power were not unique to West Germany, nor was the aversion of cabinet members to ceding authority unusual. The difficulties of implementing a coherent policy were evident elsewhere, whether in the UK's Advisory Council on Scientific Policy, which was intended to attempt it, or in the National Science Foundation in the US, which did not even try. The negotiation between institutional independence and government recognition would be familiar to research councils in many countries. The DFR's 'failure' echoed the weaknesses of its models.

Finally, the DFR's experience exemplified the difficulty of balancing expert advice and democratic practice. An approach based upon eminence and personal authority might be said to reflect the traditional self-understanding of the German professoriate. Yet, in countries with democratic traditions, co-optation and informal mechanisms of élite recruitment were also accepted as standard procedure. If we seek contrasts, we must look elsewhere. The main difference was that an unfamiliar system was being tried in West Germany at a moment when German institutions faced a trial of democratic legitimation. The DFR was not troubled by a concern for procedural legitimation, such as led its Japanese counterpart to insist on elections.¹³⁰ The value of co-optation, a disaffection for partisanship, a belief that scientists were in the best position to judge: these were features it took to be appropriate to the nature of science. Some asked questions then, others only later, and the DFR's successors are still trying to find the answers.

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¹³⁰ Yoshikawa and Kaufman, *op. cit.* note 5, 49, 54–60.

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