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PREPRINT

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Soviet Bloc (c. 1950-1980)**

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Americans and Pavlovians: the Central Institute for Cardiovascular Research at the East German Academy of Sciences and its precursor institutions as a case study of biomedical research in a country of the Soviet Bloc (c. 1950-1980)

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Introduction

This chapter deals with biomedical research in East Germany, a country of the Soviet Bloc during the era of the Cold War. It may help us revise some of the assumptions that have for a long time haunted our perceptions of socialist medicine in Eastern Europe, especially with a view to organisational matters and the role of epidemiology.¹ In Britain, a certain degree of fascination with medicine in the Soviet Bloc amongst left-leaning political and medical élites keen on modernising the health system has a long tradition and can be traced back to the inter-war period.² Soviet medicine was seen as ‘the other’ of medicine under capitalism, a model case of socialist medicine where the most obvious shortcomings of health care in capitalist countries were resolved, and where medical research was re-united with health care under the banner of effective disease prevention.³ Such expectations were fuelled, for example, by books on Soviet socialised medicine such as that by the eminent historian of medicine, Henry E. Sigerist.⁴ Sigerist’s book (with a Foreword by Sidney Webb) and the positive picture it drew of medicine in the USSR as an exciting experiment in the purposeful rationalisation of health care and medical research, may have played its part, for example, in drumming up support for a National Health Service in the UK.

Sigerist published his book five years after a volume dealing with medicine in the US, which he found ‘splendidly equipped technically’ but ‘backward socially’.⁵ Soviet medicine, in contrast, embodied to him what was lacking in US medicine and medicine under capitalism more generally. Soviet medicine to Sigerist proceeded systematically, where its western counterpart was haphazard. It followed definite, rational plans and used its limited

resources carefully, where capitalist medicine was wasteful. More recent publications commissioned by the GDR government to advertise the East German health system to western audiences have argued along similar lines.⁶ Studies, such as the recent work by Thomas Schlich on the uptake of an innovative, operative system of bone fracture treatment in the GDR, seem to support this notion.⁷ My study, however, draws a different picture, at least for the realm of biomedical research.

I will tell the tale of an institution dedicated (at least partly) to research on cardiovascular disease and launched at a time when the focus of interest in public health, in the GDR as well as in most other industrialised countries shifted away from acute, infectious disease towards the chronic disorders of old age. Cardiovascular diseases and the threats they posed became a central issue in GDR social hygiene textbooks and in the medical journals in the 1950s, towards the end of the so-called epidemiological transition, when this group of diseases replaced infections as the leading cause of death and disability in industrialised countries.⁸ The rise of cancer and cardiovascular disease to public consciousness coincided with the rise of big science in biomedicine, in the West as well as in Eastern Europe. In 1954, health guidelines passed by the GDR Council of Ministers called for a large institute of cardiovascular research.⁹

Initially, as we will see, the Council's plans were only incompletely realised, resulting in the formation of the Laboratory for Circulatory Research (*Arbeitsstelle für Kreislaufforschung*), headed by Albert Wollenberger (1912-2000), whose work was mostly dedicated to the cell biology of the heart muscle. It took almost two decades before the Central Institute for Research on Cardiovascular Regulation (*Zentralinstitut für Herz-Kreislauf-Regulationsforschung*) was finally formed in 1972, as part of a large-scale reorganisation of the biomedical research campus of the Academy of Sciences in Berlin Buch, by merging Wollenberger's laboratory with the Institute for Cortico-Visceral Pathology and Therapy, headed by Rudolf Baumann (1911-88).¹⁰ This chapter traces the history of these two institutions in a context dominated by the GDR government's attempts to create a Soviet-style research academy and implement a particular model of utilitarian research, and by the very different relationships with national and international collaborators and audiences enjoyed by the two directors. The changing international status and policy priorities of the GDR government during the Cold War, dominated by the conflicting desires to create a Soviet

style system on the one hand (not only with regard to health care) and to be recognised by western governments as a legitimate state on the other, also shaped the fortunes of the two institutes.

While in the 1950s the biological Academy institutes in Berlin Buch were largely free from direct political pressures and their work was geared mostly towards basic research, since the 1960s there was increasing government pressure to redesign research programmes according to utilitarian principles. In a book that the government published to advertise the achievements of the East German health system to an English-speaking audience in 1974, the author, one of Baumann's former co-workers, praised the Central Institute for Heart and Circulation Research as an 'outstanding example of the smooth transition from purposeful basic research via applied and clinical research to the application of the results in practice.'¹¹ As I will attempt to show, the links between basic, clinical and laboratory research were not always quite as smooth. The main factors that informed and affected the development of Baumann's and Wollenberger's institutions and their research programmes were restrictions on travel that limited exchange with colleagues in the West, and increasing difficulties in purchasing state of the art equipment due to a lack of western currency reserves. There were also repeated demands from the authorities for direct relevance and utility of research, be it political or economical.

I will begin this chapter with a brief outline of science policy in the Soviet-Occupied Zone and the GDR in the aftermath of World War II, with special attention to biomedical research within the Academy of Sciences. I will then look at the history of the two institutes in detail, which provides us with an interesting case study of an approach to biomedical research that was in many ways similar to contemporary developments in Western Europe. This applies especially to the early history of Wollenberger's laboratory. Looking at Baumann's institute, however, shows us that there were some major differences peculiar to East Germany. In the final section I will look at the place of epidemiology in GDR cardiovascular research at a time when new epidemiological approaches were developed in the West to deal with the increasingly visible problems of chronic disease. I will attempt to explain how the so-called risk factor approach, which since the 1960s has dominated western thinking about heart disease, found its way into the research programme of the Central Institute. This only happened after the merger of the two

precursor institutions in 1972, due to generational change and as a consequence of new priorities in GDR research and health policy.

The Academy of Sciences becomes a research institution

When Albert Wollenberger's laboratory took up its work as part of the newly founded *Arbeitsstelle für Kreislaufforschung* in 1957, the first phase in the development of the Academy of Sciences, from German-style *Gelehrtenakademie* (academy of sages) to Soviet-style socialist research academy was already completed.¹² The former Prussian Academy of Sciences had closed its doors in the summer of 1946, in order to be immediately re-opened by the education authority in the Soviet Occupied Zone as German Academy of Sciences, with members in both East and West Germany. At this point, neither of the two German states existed (both the Federal Republic and the German Democratic Republic were founded in 1949), and it was far from clear what was going to happen to the German science landscape. It made sense, then, for the Soviet Military Administration (SMA) to keep all options open, encourage the membership of West-Germans in the Academy, and be thus prepared for a possible re-unification of the country.

According to its new statutes, the German Academy was to include research institutes and so provide an institutional home for former Kaiser Wilhelm Institutes (KWI) in the Soviet sector.¹³ Amongst the first research institutes taken over by the Academy in 1947 was the famous former KWI for Brain Research in Berlin Buch, whose work, following an order by the Soviet occupation authority, as Institute for Medicine and Biology was now to be dedicated to cancer research.¹⁴ The Academy's new institute included a clinical department (opened in 1949) and employed 149 people in 1949, including 27 scientists and medics. Two years later there were 248 employees, 43 of whom were scientists or doctors.¹⁵

Until 1949 the leaders of the Socialist Unity Party had paid little attention to the future of the Academy. After the GDR was founded, they increasingly sought to gain control over the institution, whose membership still included many 'bourgeois' scientists, and to turn it into a socialist academy. In 1952 the SED leadership under its strong man, Secretary General Walter Ulbricht, announced that the GDR was going to be a Soviet-style, socialist

state and asked the Academy Council what the institution would be willing to contribute to the building of socialism. Little later, the *Politbüro* of the Central Committee, the decision making body in charge of policy decisions between party congresses, set up a commission for re-organising the institution.

While in the Prussian Academy there was parity between humanities and natural sciences, now increasingly the natural sciences and research and development concerns gained the upper hand. As the historian of the Academy, Peter Nötzold points out, the SED leadership under Ulbricht had high expectations in the ability of science to solve economic problems. Scientists nourished such expectations and used them to promote their disciplines, which led to a phase of rapid expansion in the Academy's research capacities in the 1950s.¹⁶ Both Wollenberger's and Baumann's institutes were products of this phase. We will see, however, that their intended function was not only utilitarian. International prestige played a central role, and Baumann's institute was also designed as a model for a Soviet approach to medical science, based on the teachings of Ivan Pavlov, the Russian physiologist, and his followers in the Soviet Union.

The two institutes were opened just before the so-called *Forschungsgemeinschaft der naturwissenschaftlichen und technischen Institute* (Research Community of Institutes for Natural Science and Technology) was launched in 1957, the de facto autonomous head organisation of this group of institutes (by then 39) within the Academy. This consolidated the Academy's hybrid character as an academy of sages (dominated by distinguished and often old professors in the humanities, social and natural sciences) and research institution. Almost simultaneously, the Council of Ministers set up its own 'Council for Natural-Scientific Research and Development' (the *Forschungsrat* or Research Council of the GDR). Cardiovascular disease, as we will see in the following section, had meanwhile become an important item on the research agenda in the medical sciences.

Cardiovascular research at the Academy of Sciences and Albert Wollenberger's laboratory

The official justification for the opening of Wollenberger's laboratory were two decisions of the GDR Council of Ministers. On 8 July 1954, the Council passed guidelines for the future development of health care and disease prevention, which included the call for an institute of cardiovascular research.¹⁷ On 5 May 1955, the Council decided on recommendations for the improvement of the work of the Academy of Sciences, including plans for a cardiovascular institute within the Academy. In the same year, an expert commission for cardiovascular research (*Arbeitskreis für Kreislaufforschung*) was launched. Wollenberger was one of the founding members of the *Arbeitskreis*, lobbying for the future institute to become part of the Academy.¹⁸

Wollenberger was not typical of East German scientists and doctors. While many established members of the scientific and medical communities left the Soviet Occupied Zone for the West, Wollenberger was a so-called *Westemigrant* who had moved from West to East.¹⁹ The term *Westemigranten* (literally translated as west emigrés) describes the returnees from exile in western countries rather than the USSR, which had hosted most of the GDR political leaders during the Nazi dictatorship. Wollenberger was born in 1912 in the small, south-western university town of Freiburg.²⁰ He started to study medicine in Berlin in 1931, where he joined the Communist Student Association and the Communist Party. He left for Switzerland and France in 1933, and after a brief return to Germany, with the permission of the Communist Party leadership, he emigrated via Denmark to the USA in 1940. There he studied medicine and biology at Harvard, and completed his PhD with the German biochemist Fritz Lipmann at the Pharmacological Institute headed by Otto Kraye, another emigré, working on the biochemistry of heart failure. Wollenberger stayed at Harvard until 1951. From 1951 to 1954 he worked as a guest scientist at the Carlsberg Laboratories in Copenhagen, at the University of London's Institute for Psychiatry and the Biochemical Institute at Uppsala University. In 1954 he took up a position as *Oberassistent* at Humboldt University in East Berlin, in the understanding that this would be an interim solution, until an Academy institute for cardiovascular research was set up.

Some members of the Academy and researchers in Buch were doubtful about the plans for an institute of cardiovascular research: would not such an institute need a large clinic, and if so, would the Academy be the right place for it? Other leading members of the *Arbeitskreis* had their institutional homes at the medical schools of the Universities of Berlin and Leipzig.²¹ They possessed both the know-how and the facilities for clinical research on cardiovascular problems. Both the secretary of the Academy's class of medicine, Lohmann, and the director of the Institute for Medicine and Biology in Berlin-Buch, Friedrich, were opposed to the plans. As a consequence, the *Politbüro* had to intervene in favor of the institute.²² In December 1955, Wollenberger was appointed Director of a new laboratory, the first one within the planned new institute for cardiovascular research, against the votes of Lohmann and Friedrich.²³ On 1 January 1956, the *Arbeitsstelle für Kreislaufforschung* was officially launched, and in May 1956 a number of rooms in the former KWI for Brain Research in Berlin-Buch were equipped so that the work could start.²⁴ In 1960, Wollenberger employed 26 people, 7 of whom were scientists.²⁵

The directions that Wollenberger's scientific work took can be explained partly with his experiences in the US. *Westemigranten* like Wollenberger occupied a peculiar position in GDR society. Returned to the GDR in the late 1940s and 1950s, many of them to escape McCarthyism, they often found themselves suspected of espionage. However, returning scientists and artists also enjoyed many privileges, including, for example, housing in suburban estates, purpose-built especially for the cultural élite, and relative freedom to travel to western countries.²⁶ Wollenberger's student and later successor, Ernst Georg Krause remembers an occasion when Wollenberger returned from a trip to West Germany with his Mercedes, where somebody had fixed a note to his windshield wipers. The author of the note had identified the GDR licence plate and commented: 'Walter Ulbricht loves the Wall and the comrade loves his Mercedes.'²⁷ Wollenberger found this funny, but his co-workers, who were stuck behind that Wall, evidently had different feelings. The privileged west emigrés were often confronted with the envy of ordinary GDR citizens who dreamed about leaving the country for the West and did not understand why anybody would choose to move in the other direction, and with the ambivalent feelings of their co-workers and students who created the results that the boss presented at international conferences.²⁸

Work in Wollenberger's laboratory was dedicated to what in 1983 he called 'molecular and cellular cardiology, a field at the boundary between molecular and cell biology on the one hand and clinical cardiology on the other.'²⁹ He is still seen internationally as one of the fathers of the biochemistry of the heart, and work in his laboratory focused mostly on biochemical processes in the heart muscle and the metabolism of heart failure, including the metabolic action of cardiac glycosides, important sugar molecules that are involved in the regulation of the heart. Wollenberger's student and co-worker, Ernst Georg Krause, was amongst the first, world-wide, working on a particular regulatory pathway. In 1983, Wollenberger showed satisfaction that the laboratory's results may have contributed to a better understanding of the role of adrenergic receptors and thus to the development of the beta blockers, but the priorities of his laboratory were clearly on basic research.³⁰ He gained international recognition with a technical invention, the *Wollenberger-Zange*, a metal clamp which, cooled down to minus 196 degrees Centigrade, allowed the rapid freezing of tissue samples in order to determine the concentration of metabolites in the tissue at a fixed state of a metabolic process.³¹

Wollenberger was a cosmopolitan. He continued to correspond and collaborate with colleagues in the West, directed his publications to an international audience and was only marginally interested in the internal affairs of GDR science.³² Krause, in fact, had come to Berlin to study biochemistry in the 1950s, when he heard that 'two Americans had arrived', Wollenberger and the biochemist Samuel Mitja Rapoport.³³ Once his laboratory was running, Wollenberger kept a low profile in GDR health and research politics (with one notable exception: he was a figurehead of the jogging movement). His memory is still held in high regard in the institution that succeeded the Academy institutes in Buch after the demise of the GDR, the Max Delbrück Centre for Molecular Medicine. While Wollenberger's group had to make do with 1950s laboratory technology until the Wall came down, their research programme remained in gear with what was going on in the cell biology of the heart in the West.

Along with Wollenberger's laboratory, a working group for experimental cardiac surgery, headed by Petros Kokkalis, formerly professor at Athens University, was set up at Friedrichshain Hospital, to work on improved techniques of heart surgery. Together the two groups constituted the *Arbeitsstelle für Kreislaufforschung*, the first stage in the

development of a big large research institute, and it was planned to move them into a new building on the Buch campus in due time. Academy officials admitted that Wollenberger's and Kokkalis' work may not have represented cardiovascular research proper (especially the lack of epidemiological research was later often deplored) but starting the new research institute only with two groups working on pharmacology and surgery respectively was deemed necessary due to the lack of suitable candidates in other fields.³⁴ Once it was complete, according to Lohmann's plans, the institute was to work in four fields: physiology, chemistry, pharmacology and surgery and also draw on haematology, experimental pathology, histology, physics and biophysics, x-ray diagnostics and social hygiene. The work of the institute was going to be mostly dedicated to fundamental research, while a group based at Leipzig University would work predominantly clinically. Lohmann did, however, consider collaboration with the Municipal Hospital in Buch as desirable.³⁵

When Kokkalis died in 1962, ironically from a heart attack, no successor was available and the work of the group lacked guidance and a sense of direction. The *Forschungsgemeinschaft* decided to re-structure the *Arbeitsstelle*. The Friedrichshain group was taken over by Humboldt University and the HU cardiologist H.-J. Serfling was appointed acting director. Wollenberger was appointed director of the whole *Arbeitsstelle*.³⁶ In 1964 the Wollenberger group moved into a new, modern laboratory building. The original plans for a large, central institute for cardiovascular research that included more than just Wollenberger's laboratory for biochemistry of the heart were put on ice, only resurfacing in the late 1960s with the Academy Reform and the idea of the merger with Baumann's group.

Pavlov in the GDR and Rudolf Baumann's institute

In contrast with Wollenberger's, Rudolf Baumann's name has all but disappeared from the official histories of the Max Delbrück Centrum, and he is generally seen as a controversial character. His research and publications were not addressed to an international, primarily western audience, but to colleagues in the GDR and in the socialist countries of the Eastern Bloc. Baumann's interest in cardiovascular problems was only secondary in the 1950s, while one of his primary aims was to introduce the teachings of the Russian

physiologist Ivan Pavlov to GDR medical science. Only gradually, cardiovascular problems came to play a more central role in his research programme. Baumann's Institute for Cortico-Visceral Pathology and Therapy was launched in 1956, the same year as Wollenberger's laboratory, but initially within the Municipal Hufeland Hospital in Berlin-Buch, where Baumann had been head of internal medicine since 1948 and medical director since 1951.³⁷ The complicated name of Baumann's clinic and institute was a tribute to Pavlov and his followers in the Soviet Union.³⁸ The brief but intense love affair with Pavlov in GDR academic medicine was the expression of an officially sanctioned attempt to promote a new, dialectical-materialist approach to medical science. Its promoters expected it to transform the medical landscape of East Germany by loosening old ties with the West and creating new alliances with Soviet medicine.³⁹

The central doctrine of the new Pavlovian approach in all branches of the medical sciences in the Soviet Union was what his followers called the leading role of the cerebral cortex for the interaction between organism and environment. Pavlov's teachings were interesting for Soviet officials because they allowed the 'materialist' interpretation of all organic and psychological processes as chains of reflexes, controlled by a central power. The reception of Pavlov in the GDR followed the Soviet model and specifically attacked western psychoanalytical and psychosomatic concepts. Starting in 1950, the medical journal published by the GDR ministry of health, *Das Deutsche Gesundheitswesen*, printed a growing number of articles on Pavlov's teachings and their implications, partly by German authors and partly translations of texts originally published in Russian.⁴⁰ In 1952 the physiologist Emil von Skramlik organised a Pavlov workshop in Dresden. In the same year, the Central Committee of the SED founded a Commission for Questions of Medical Science, with the explicit goal of popularising Pavlov. Its chairman was Samuel Mitja Rapoport. In 1953, the health ministry launched its own Pavlov Commission, chaired by Maxim Zetkin. Baumann was one of its members. Pavlov conferences in 1953 and 1954 attracted large, international audiences.⁴¹

Like the institute for cardiovascular research, an 'institute for the physiology of higher nerve activity (Pavlov institute)' was on the list of desiderata included in the 1954 Council of Ministers guidelines for the further development of the GDR health system.⁴² The *Forschungsgemeinschaft* took over the Baumann institute from the municipal authorities in

1958, turning it into an Academy institute.⁴³ The institute included a small clinic, whose work already in 1960 was predominantly dedicated to hypertension research.⁴⁴ Associated with the clinic (which grew substantially in later years) were laboratories for the study of the higher nerve activity of human beings, for electrophysiology, for blood circulation and haematology, for clinical physiology and patho-physiology, and for clinical psychology. A theoretical-experimental department included laboratories for electro-physiological basic research, for experimental physiology and patho-physiology of higher nerve activity, for physiological and patho-physiological studies of metabolism with radioactive isotopes, for radiochemistry, for experimental pharmacology, for biochemistry and clinical chemistry, for histology and histochemistry, and an electro-physical workshop. In 1959 the institute had 122 employees, including 29 scientists, in 1961 there were 164, including 51 scientists.⁴⁵

Even after being appointed as institute director within the Academy, Baumann continued to be head of internal medicine at the Hufeland hospital. In an article for the Academy's magazine, *Spectrum*, Baumann later characterised his work as neurobiology, and it may not be immediately obvious how he became the champion of hypertension research in the GDR.⁴⁶ He turned to research on hypertension in the 1950s, after initially working on the treatment of diabetes. Both high blood pressure and diabetes to him exemplified defects in the regulation of somatic processes by the brain, cortico-visceral or, as he preferred to call them later, cerebro-visceral interactions, due to insufficient adaptation of the organism to a stressful environment. In the 1960s, when the enthusiasm for Pavlov was fading, Baumann and his co-workers stressed the links between their work and then fashionable cybernetic theories.⁴⁷ In the 1970s Baumann no longer mentioned Pavlov but drew extensively on the stress theories of the Austrian-Canadian physiologist, Hans Selye.⁴⁸ The roots of the institute's work, however, remained visible, while the context of GDR research policy was changing.

Science as a 'productive force'

The 1960s were characterised by increasing pressure on the GDR scientific community to pursue research that was immediately applicable and would yield visible economical (and

political) gains. This development was accompanied by a proliferation of new councils and workgroups (see figure 1). In February 1960 a party health conference in Weimar discussed the necessity of long-term planning and agreed on a ‘Perspective Plan for the Development of Medical Science and the Health System in the GDR’ for 1960-80, which was subsequently adopted by the Council of Ministers. The institutions that were active in medical research and health care were asked to develop their own long-term perspectives.⁴⁹ The aim was ‘steady improvement, concentration and rationalisation’ of medical research, centrally controlled and co-ordinated by the ministry of health.⁵⁰

[FIGURE 1]

In 1962 a ‘Council for Planning and Co-ordinating Medical Science’ was constituted at the ministry (*Rat für Planung und Koordinierung der medizinischen Wissenschaft beim Ministerium für Gesundheitswesen*, see figure 1), to translate health policy goals into medical research. The Council swiftly set up ‘Problem Commissions’ (*Problemkommissionen*) for various areas of medical research, whose role as expert commissions of the new Council was comparable to what the *Arbeitskreise* did for the *Forschungsrat*. In the case of cardiovascular research, in fact, the chairman of the problem commission, Harald Dutz, a professor at the Charité, was also chairman of the *Arbeitskreis*. In contrast with cancer research, where the Academy Institute was also home to the chairs of the respective scientific bodies, cardiovascular research continued to be co-ordinated from outside the Academy until 1985. This was a consequence of both Wollenberger’s lack of interest in GDR research policy – his audience was an international one – and the complete absence of collaboration between Wollenberger’s and Baumann’s institutes before their ‘forced marriage’ in 1972.

In January 1963 the Sixth Party Congress of the SED declared science to be one of the central ‘productive forces’ (*Produktivkraft Wissenschaft*), besides industrial labour and farming. In June 1963, an economic conference of the SED and the Council of Ministers discussed new ‘Guidelines for the New Economic System of Planning and Directing’, adopted by the State Council in July. For the Academy researchers, this ultimately led to a further centralisation of decision making. Institute directors increasingly held responsibility for decisions which were only partly their own. The government also experimented with different funding models. Towards the end of the 1960s, some direct government funding

for the Academy institutes was withdrawn and research work had to be ordered (and paid for) by the nationalised GDR industries.

Parallel with the increasing centralisation of decision-making, there was a trend towards 'big science' within the Academy's research institutes. In 1961 the institutes on the Berlin-Buch research campus were joined together in the 'Medical-Biological Research Centre Berlin-Buch'.⁵¹ The idea was to use synergies between laboratories to make research more productive. The *Akademiereform* that began in 1968 and ended with the restructuring of the Buch research campus in 1972 and the concentration of biomedical research in three large central institutes marked the endpoint of this process.

The division of labour between head and hands, academy and production industry, which the government intended, was ultimately unsuccessful. Companies neglected research and development, the communication between institutes and with the industry left a lot to be desired, and institute directors found imaginative ways to pursue their basic research projects, which often had little in common with the official function of their institution. Baumann and Wollenberger continued the work they had been doing since the 1950s. However, Baumann in particular did so under imaginative new labels, arguing for the work's relevance with reference to whatever was in fashion at the time and stressing its importance for the modernisation of the GDR health system and the standing of GDR science in the world. Especially the experiments with primates, involving elaborate and expensive computer technology in the division of the institute headed by Baumann's wife, Hannelore, were sometimes suspected to be more show than substance.⁵² That the claims of some medical researchers with regard to the clinical relevance of their work were occasionally exaggerated, worried the Academy's Class of Medicine. In a confidential memorandum in 1964 the class warned that 'those institutes whose work is exclusively theoretical and experimental neglect clinical questions and turn to more interesting problems, which have only indirect relevance for the main problems of clinical research.'⁵³

In cardiovascular research, university-based researchers continued to retain a much higher stake than, for example, in cancer research. We have already noted that the head of the *Arbeitskreis* for cardiovascular research, unlike for cancer research, was not based at the respective Academy institute. While Baumann's priorities increasingly moved away from

Pavlovian approaches and towards cardiovascular problems, he was neither a member of the respective *Arbeitskreis* nor the *Problemkommission*. In 1963, this (in concert with Baumann's rather unfocused research programme) led to a conflict with the *Arbeitskreis*. In a meeting of the Council for Planning, Dutz suggested that Baumann's institute should lose 20 out of its 40 academic staff and 40 of its 150 non-academic employees, because the institute's work was 'only of minor importance for reaching our scientific and practical goals' and its staff 'not in all areas scientifically qualified'.⁵⁴ The savings should be used to set up decentralised research groups within university hospitals.⁵⁵ Baumann was able to maintain the size of his institute, but he may have felt compelled to move more towards cardiovascular research than he would have done otherwise. Nevertheless, his work was again severely criticised in 1965 as being not sufficiently relevant, this time from within the Academy.⁵⁶

An analysis of cardiovascular research for the SED party leadership described the strained relations between HU and Academy researchers as one of the main obstacles for more efficient research in this field, but lauded the transformation of the Institute from Pavlov institute into a centre of hypertension research.⁵⁷ Cardiovascular disease moved higher and higher on the agenda, not least in response to developments in the West, as we will see in the following section. The party leadership was concerned that work in the GDR could fall back further in terms of quality and significance behind that by western competitors, with regard to laboratory research as well as epidemiology and the clinic.⁵⁸

The academy reforms and the status of epidemiology

With a view to such concerns in the *Politbüro*, let us take a brief look at the role of epidemiology in the GDR, before we turn to a brief outline of further developments at the Central Institute after the forced marriage in 1972. It is today often assumed, almost automatically, that epidemiological research featured strongly in the countries of the Eastern Bloc, as their health system was centrally organised and prevention-oriented.⁵⁹ However, epidemiological research on cardiovascular disease in the GDR in the 1950s and 1960s had no home at the prestigious Academy of Sciences. While Baumann's work did focus on hypertension, his group did not pursue any epidemiological work before the

restructuring of the Buch campus. Nor was Wollenberger particularly interested in epidemiology, apart from a brief excursion in the 1950s, for which he was severely criticised by the social hygienist Kurt Winter.⁶⁰

Epidemiology and preventive medicine in the GDR were originally the domain of social hygienists, who worked at the universities and medical academies, and who saw themselves as part of a tradition founded by Alfred Grotjahn.⁶¹ Their brand of epidemiology was different from the new epidemiological approaches developed in the West, for example in the context of the US National Heart Institute's Framingham Heart Study. Social hygiene was geared towards a broader study of life conditions and the economics of health, while the so-called risk factor approach, which began to dominate epidemiological thinking about chronic disease in the West, was perceived as reductionist and more closely associated with clinical medicine than with social hygiene proper.⁶²

Risk factors did find their way into GDR medicine (and into the new central institute for cardiovascular research), but not via social hygiene. A small number of clinicians working outside the Academy (some had trained with Harald Dutz), turned their interest to the incidence of heart disease in the 1960s and emulated US approaches. These clinicians included, for example, Karl-Heinz Straube, a hospital director in the Saxonian town of Zwickau, who had worked with Dutz in Rostock in the late 1950s and was a champion of the cardiological dispensary system in Saxony.⁶³ Straube combined his clinical work with an interest in medical research, taking advantage of his access to dispensary patients, as was in fact intended by health policy makers, in line with the model of Soviet medicine that Sigerist presents in his book.

In the GDR, health care was provided by the state and by (state-owned) companies, predominantly within health centres.⁶⁴ Specialist clinics, so-called *Dispensaires* (the government used the French term, but with reference to the health system in the Soviet Union), were dedicated to screening and prevention campaigns for selected diseases and health problems, including cardiovascular disease.⁶⁵ Straube was not the only clinician turned epidemiologist who pioneered the risk factor approach in the GDR. J. Knappe, for example, and his co-workers undertook epidemiological studies of heart disease in the Erfurt area in Thuringia.⁶⁶ Most important for the Buch institute, however, was the Berlin

Mitte study undertaken by Siegfried Böthig and his colleagues at the Charité in Berlin.⁶⁷ All these studies were directly or indirectly modelled on American examples. Kurt Winter's students and successors in the social hygiene tradition remained highly critical of both the clinicians turned epidemiologists and the risk factor approach.⁶⁸

Why then was this western approach to epidemiology implemented at the Academy's Central Institute for Cardiovascular Research after 1972, bypassing home-grown social hygienists? There are several explanations. Firstly, the risk factor approach matched the changed landscape of domestic politics. The new GDR leadership under Erich Honecker, who succeeded Ulbricht in 1971, put a much stronger emphasis on satisfying the demands of GDR citizens as consumers. This individualist focus in everyday matters also brought with it a stronger emphasis on the responsibility of individuals for maintaining their health and found its expression, for example, in the jogging movement, for which Wollenberger served as a figurehead.

A second reason for the GDR government to support the implementation of Anglo-American informed epidemiological approaches was the desire to create a basis for involvement in international research projects under the umbrella of the World Health Organisation (WHO).⁶⁹ Getting international recognition for the GDR as an independent state was one of the main priorities of the SED leadership in the 1970s. Both GDR and Federal Republic formally joined the WHO in 1973, but already before this date the East Germans frequently sent delegations to WHO conventions. The WHO Committee of the GDR published translations of WHO publications in the journal *Das Deutsche Gesundheitswesen* since 1961.

A third factor, concerning specifically the Academy institute, was generational change. The merger of Baumann's and Wollenberger's institutes in 1972 was in fact more of a takeover. Wollenberger's laboratory became the division of molecular cardiology in the new institute, while Baumann was appointed its director. However, the retirement of both Wollenberger and Baumann was imminent, and the institute was changing its character fundamentally. In the 1970s and early 1980s, a group of clinicians moved from the Humboldt University to the Academy institute in Buch, in what critical voices described as a *Kadertanz* (cadre dance).⁷⁰ They implemented their own research programmes and made Baumann's post-

Pavlovian approaches look more and more like a thing of the past. Horst Heine, who succeeded Baumann as director in 1977, had the reputation of being politically even closer to the GDR government than Baumann. In the 1960s he had worked closely with Dutz at the Charité.

The first clinician who established the risk factor approach and other Anglo-American informed epidemiological approaches at the Academy was Hans Dieter Faulhaber, who moved from the Charité to Buch in 1972. Faulhaber had trained in pharmacology and internal medicine and specialised in hypertension research. After a pilot study on the incidence of high blood pressure in the Berlin borough of Pankow, Faulhaber and his co-workers designed a hypertension treatment study in the same district. Like Straube's and Knappe's studies, Faulhaber's work profited from the existence of specialist cardiological services for districts and regions in the GDR, with whom he collaborated.⁷¹

When Heine succeeded Baumann as director, he was joined in Buch by a number of former Charité co-workers, including, for example, Lothar Heinemann, who had worked with Böthig on the Berlin Mitte study and was going to co-ordinate the GDR branch of the World Health Organisation's multi-centred *MONICA* study, launched in the early 1980s to *MONI*tor trends in *C*ardiovascular diseases.⁷² In 1985, finally, the institute took over the official co-ordination of cardiovascular research in the GDR, which until then had resided with colleagues at the Charité. Heine changed the emphasis of the Institute's work, away from basic research and towards clinical work. Under his directorship, a large diagnostic department and a new intensive care unit were set up, with modern, western equipment, paid for from the limited western currency reserves. While this led to resentments in other parts of the institute (for example, the cell biologists and biochemists in what used to be Wollenberger's laboratory still used centrifuges purchased in the 1950s) the institute as a whole came to look more than ever like that envisaged in the original plans of the mid-1950s.

Conclusion

In this chapter I used the stories of two very different institutions within the East German Academy of Science as case studies for the development of cardiovascular research in the GDR at a time when chronic disease gained significantly in visibility. The stories of Albert Wollenberger's *Arbeitsstelle für Kreislaufforschung* and Rudolf Baumann's *Institut für Kortiko-Viszerale Pathologie und Therapie* and the circumstances of their forced marriage which gave rise to a central institute for cardiovascular research, point to some of the contingencies and local specificities of this development. Wollenberger and Baumann played different and very distinctive roles in these stories, roles which also shaped the work of their respective institutes: Wollenberger, as a *Westemigrant* who had trained in the US was rather cosmopolitan and published the results of his cell biological work predominantly in English and for an international audience. Throughout his career, while he continued to work with the tools of the 1950s and 1960s and lack of funding prevented him and his co-workers from exploring, for example, molecular biological approaches, Wollenberger's cell biological research programme remained valid in the eyes of colleagues in the West. The questions he addressed were of interest to western researchers, with whom he maintained regular contact. Baumann and his colleagues, in contrast pursued local interests and published predominantly in German and for a GDR audience. Wollenberger and Baumann were not a good match. Before the merger there was hardly any collaboration, and this was not helped by the fact that Baumann's institute was located about two kilometers away from the rest of the academy institutes in the grounds of the municipal hospital. But the intellectual distance between the two was still greater, and even after the merger, the Wollenberger lab never became fully integrated into the new central institute.

Both Wollenberger and Baumann represented and responded to certain policy agendas, foreign and domestic, of the GDR government. The work of Wollenberger's laboratory was to demonstrate to western researchers the significance (if not superiority) of East German science when following US-style research programmes, and Baumann's represented the attempt to construct a brand of science modelled on the Soviet Union. Interestingly (but not entirely surprisingly), Wollenberger's memory is cherished until today within the institution that succeeded the Academy Institutes in Buch after the Berlin Wall

had fallen in 1989, the Max Delbrück Centrum for Molecular Medicine, while Baumann, in contrast, is not mentioned.⁷³ Clearly, the new institution is interested in stressing continuities with what its directors consider good GDR science. Baumann's approach was geared specifically to a 1950s GDR context and quickly looked somewhat anachronistic, long before the end of the GDR. He had supporters in the government, but, as we have seen, fellow medical scientists were critical of his work. His research programme became increasingly marginal in the 1970s when a new generation of researchers, predominantly clinically trained, moved from the Charité to the newly formed Central Institute and brought with them new approaches and plans to install a modern and expensive diagnostic department. Like Wollenberger, these researchers chose to implement western models (and use western technologies) in their work. This includes their approach to epidemiology, which did not build on the established social hygiene traditions but was modelled on American work.

Henry Sigerist, in his 1937 book states that he was 'primarily interested in the principles of Soviet medicine and in those positive achievements which represent a permanent gain. Shortcomings will be remedied sooner or later.'⁷⁴ After 1990, the German authorities have chosen to tackle what they saw as shortcomings and inadequacies by largely dismantling all Soviet style institutions in what used to be the GDR. Similar developments have taken place in other countries of the former Soviet Bloc. So has the legacy of Soviet medicine disappeared, completely and justifiably?

The reality of biomedical research in the Soviet inspired, socialist system of the GDR, in fact, was a far cry from Sigerist's idealistic projections of purposeful integration. Initially, many researchers remained committed to 'bourgeois science' and showed little enthusiasm for government calls to build and embrace a new, socialist science. Not long after the demise of National Socialism, another totalitarian system that had promoted its own approach to science, this was perhaps not surprising. When finally a new generation took control of biomedicine in the GDR, they were looking for inspiration in the West. This was not only true for Wollenberger's student and later successor, Ernst Georg Krause, who had come to Berlin to study with an 'American'. In the epidemiology of heart disease, many, including the Humboldt University group, followed the Framingham model. Even amongst their critics in the social hygiene tradition, the younger generation were inspired

by western models. In their case the model was social medicine in Britain, which is somewhat ironic considering that this was an approach at least temporarily and partly inspired by Soviet medicine, but developed under the conditions of capitalism. I guess that in systems such as the British National Health Service, built on compromise and with many imperfections, we may find the legacy of Soviet medicine as adapted to the realities of a twentieth-century liberal society. And why not? Sigerist himself, after all, chose to return to the US to write his book, and Wollenberger, too, would have stayed there, despite his communist convictions, had not McCarthy's activities forced him to leave.

My case studies of the careers of Baumann and Wollenberger suggest that, at least for biomedical technoscience, the cold-war reality did not hold what Soviet medicine had seemed to promise to visitors to the USSR in the very different context of the interwar period. However, this should not lead us towards whiggishly dismissing GDR medicine and biomedical science in its entirety. Scholarship in Science Studies in the last few decades has taught us to be careful about equating a lost argument with qualitative inferiority and to look at the contexts of a controversy instead. While the ambitions of the GDR government to match and beat the West German competition in the realms of technoscience were unrealistic, especially under the increasingly difficult economic conditions, some of the achievements of GDR biomedicine were remarkable. The integrated health system, too, had its strengths, and it leaves a bitter aftertaste that the institutions of GDR medicine were completely disposed off after German re-unification, by a medical élite keen to quickly and effectively stamp out all traces of practicable alternatives to individualised medical practice, with devastating consequences for medical care especially in some rural districts. On re-reading Sigerist's book one is tempted to embrace at least some of its assumptions. For the time being, Germans (not only in the East) may have to live with a health system that is, as Sigerist observed for the case of the US, 'splendidly equipped technically' but somewhat 'backward socially'. What is lacking, however, is a clear and obvious alternative.

I am grateful to Professors Ernst Georg Krause, Hans-Dieter Faulhaber, Heinz Bielka and Jens Uwe Niehoff, as well as Dr Rainer Hohlfeld, for sharing with me vital information on the academic life in Berlin Buch and on cardiovascular research in the GDR. This paper was greatly improved by comments by Jonathan Harwood, John Pickstone and Michael Worboys, and by the editors of this volume. The research was made possible by a Wellcome Trust postdoctoral fellowship.

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- ¹ Such expectations can only insufficiently be explained by reference to propaganda publications commissioned by the respective governments. See, for example, K. Hecht, *What is done to protect people's health? Information on the health service of the GDR*, Berlin: Panorama DDR - Auslandspresseagentur GmbH, 1974.
- ² J. Stewart, *The Battle for Health: A Political History of the Socialist Medical Association, 1930-51*, Aldershot: Ashgate, 1999.
- ³ For a short, critical review of Western attitudes and literature on Soviet medicine, see M. G. Field, *Soviet Socialized Medicine: An Introduction*, New York: Free Press, 1967, pp. ix-xi.
- ⁴ H. E. Sigerist, *Socialised Medicine in the Soviet Union*, London: Victor Gollancz, 1937.
- ⁵ Sigerist, *Socialised Medicine*, p. 15. H. E. Sigerist, *American Medicine*, New York: Norton, 1934.
- ⁶ Hecht, *What is done to protect people's health?*
- ⁷ T. Schlich, 'Degrees of Control: The Spread of Operative Fracture Treatment with Metal Implants: A Comparative Perspective on Switzerland, East Germany and the USA, 1950s-1990s,' in J. Stanton (ed.) *Innovations in Health and Medicine: Diffusion and Resistance in the Twentieth Century*, London and New York: Routledge, 2002.
- ⁸ See, for example, A Beyer and K. Winter (eds) *Lehrbuch der Sozialhygiene*, Berlin: VEB Verlag Volk und Gesundheit, 1959. Cardiovascular disease was the subject of a special issue of the GDR medical journal, *Das Deutsche Gesundheitswesen*, in 1956 (Issue 11). Still, as far as public attention and interest by medical scientists and by policy makers was concerned, cardiovascular disease long remained in the shadow of another so-called 'disease of civilization', cancer.
- ⁹ Cf. E. Fischer, L. Rohland and D. Tutzke (eds) *Für das Wohl des Menschen*, vol. II, *Dokumente zur Gesundheitspolitik der Sozialistischen Einheitspartei Deutschlands*, Berlin: Volk und Gesundheit, 1979, p. 98.
- ¹⁰ For more information on the history of the Academy and the reforms leading to the 1972 restructuring, see H. Bielka, *Die Medizinisch-Biologischen Institute Berlin-Buch: Beiträge zur Geschichte*, Berlin: Springer, 1997; J. Reindl, 'Akademiereform und biomedizinische Forschung in Berlin-Buch,' in G. A. Ritter, M. Szöllösi-Janze, and H. Trischler (eds) *Antworten auf die amerikanische Herausforderung: Forschung in der Bundesrepublik und der DDR in den 'langen' siebziger Jahren*, Frankfurt/New York: Campus, 1999, 339-60; P. Nötzold, 'From German Academy of Sciences to Socialist Research Academy,' in K. Macrakis and D. Hoffmann (eds) *Science under Socialism: East Germany in Comparative Perspective*, Cambridge, Mass.: Harvard University Press, 1999, 140-57.
- ¹¹ Hecht, *What is done to protect people's health*, p. 48. Hecht was head of the laboratory for experimental physiology and pathophysiology of higher nerve activity in Baumann's institute in the 1950s and early 1960s. Cf. *Jahrbuch der Deutschen Akademie der Wissenschaften*, 1958, p. 594; *ibid.*, 1959, p. 456; *ibid.*, 1960, p. 713; *ibid.*, 1961, p. 717. In subsequent years co-workers are no longer listed.
- ¹² Nötzold, 'From German Academy of Sciences to Socialist Research Academy'.
- ¹³ The Kaiser Wilhelm Society was the precursor of today's Max Planck Society, one of the main umbrella organisations of research institutes in the Federal Republic of Germany. For the history of the Society, see B. vom Brocke and H. Laitko (eds) *Die Kaiser-Wilhelm-/Max-Planck-Gesellschaft und ihre Institute*, Berlin and New York: De Gruyter, 1996.
- ¹⁴ Bielka, *Die Medizinisch-Biologischen Institute Berlin-Buch*.
- ¹⁵ *Ibid.*, pp. 62-8.
- ¹⁶ Nötzold, 'From German Academy of Sciences to Socialist Research Academy', p. 147.
- ¹⁷ Cf. Fischer, Rohland and Tutzke (eds) *Für das Wohl des Menschen*, vol. II, p. 98.
- ¹⁸ Berlin Brandenburgische Akademie der Wissenschaften, Akademiearchiv (BBAA), Akademieleitung (AKL) 57, Arbeitsstelle für Kreislaufforschung, 1954-1965.
- ¹⁹ Until the Berlin Wall was erected and the German-German border closed in 1961, the GDR government had serious problems with the provision of medical care, not least because a constant stream of young doctors, after passing their degrees, left the country for West Germany, where at the same time there was a surplus of doctors. Cf. A.-S. Ernst, *Die beste Prophylaxe ist der Sozialismus: Ärzte und medizinische Hochschullehrer in der SBZ/DDR 1945-1961*, Münster etc.: Waxmann, 1997; W. Süß, 'Gesundheitspolitik,' in H. G. Hockerts (ed.) *Drei Wege deutscher Sozialstaatlichkeit: NS-Diktatur, Bundesrepublik und DDR im Vergleich*, München: Oldenbourg, 1998, 55-100.

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- ²⁰ S. Kutzschmar and U. Hoffmann, 'Erleben, Erfahren, Erkennen: Akademiemitglied Albert Wollenberger erinnert sich,' *Spectrum*, 1983, vol. 14, issue 4, 14-17.
- ²¹ Bundesarchiv Berlin (BAB), DDR, DQ1 (Ministerium für Gesundheit), 2570, Abt. Wissenschaft: Kreislaufforschung 1955 - Protokolle über die Gründung des Arbeitskreises für Kreislaufforschung, März 1955.
- ²² Clinical (rather than laboratory-based, fundamental) research within the Academy remained a bone of contention. In 1967, the influential professor of clinical biochemistry, Samuel Mitja Rapoport launched an ultimately unsuccessful initiative in the GDR Research Council to stop clinical research within the Academy and transfer the respective facilities, including Baumann's, into other institutional settings. Cf BBAA, Forschungsgemeinschaft (FG) 191, Vorsitzender und Ständiger Stellvertreter; Institut für Kortiko-Viszerale Pathologie und Therapie, 1958-1968.
- ²³ BBAA, AKL 57, Arbeitsstelle für Kreislaufforschung, Protokoll der Sitzung des Präsidiums vom 1. Dezember 1955.
- ²⁴ BBAA, AKL 57, Arbeitsstelle für Kreislaufforschung; FG 184, Vorsitzender und Ständiger Stellvertreter, Institut für Kreislaufforschung, 1956-1968; FG 79, Vorsitzender und Ständiger Stellvertreter, Institut für Kreislaufforschung, 1956-1966.
- ²⁵ *Jahrbuch der Deutschen Akademie der Wissenschaften*, 1960, p.751.
- ²⁶ Cf, for example, I. Rapoport, *Meine ersten drei Leben. Erinnerungen*, Berlin: Edition Ost, 1997; 'Handsclag mit Roosevelt: Junge Welt sprach mit Albert Wollenberger,' *Junge Welt*, January 12, 1998; or Heym, *Nachruf*, Munich: Bertelsmann, 1988.
- ²⁷ Interview with Professor Ernst Georg Krause, Berlin Buch, 20 June 2001.
- ²⁸ Ibid.
- ²⁹ Kutzschmar and Hoffmann, 'Erleben, Erfahren, Erkennen', p. 14.
- ³⁰ Ibid., p. 15; interview with E.G. Krause.
- ³¹ The article which Wollenberger published on the *Wollenberger Clamp*, jointly with the engineer and chemist Otto Ristau, is one of the most cited publications by a GDR scientist: A. Wollenberger, O. Ristau and G. Schoffa, 'Eine einfache Technik der extrem schnellen Abkühlung größerer Gewebestücke,' *Pflügers Archiv*, 1960, vol. 270, 399-412. Cf. E. Garfield, 'Uncitedness III – the importance of not being cited,' *Current Contents*, 1973, No 8, February 21, 5-6; <http://www.garfield.library.upenn.edu/essays/V1p413y1962-73.pdf>, accessed on 7 May 2003.
- ³² Interview with E.G. Krause.
- ³³ Interview with E.G. Krause.
- ³⁴ BBAA, AKL 57, Arbeitsstelle für Kreislaufforschung, Mendel an Wittbrodt, 30.1.56.
- ³⁵ BBAA, AKL 57, Arbeitsstelle für Kreislaufforschung, Protokoll über die Besprechung des Herrn Sekretärs der Klasse für Medizin, Prof. Lohmann, mit den Herren Kokkalis, Prof. Wollenberger u. Gründel im Beisein des Unterzeichneten [Kneller] am 19.6.1956 im Institut für Medizin und Biologie in Bln.-Buch.
- ³⁶ BBAA, FG 184, Vorsitzender und Ständiger Stellvertreter, Institut für Kreislaufforschung, 1956-1968, Kuratoriumsbeschluß Nr. K/66/13 vom 13. Juni 1962.
- ³⁷ The publications of the Academy reveal little about Baumann's career before 1945.
- ³⁸ R. Baumann, "'Klinische Forschungsabteilung für Schlaftherapie" in Berlin-Buch,' *Das deutsche Gesundheitswesen*, 1954, vol. 9, 1001-3.
- ³⁹ Cf. Ernst, *Die beste Prophylaxe ist der Sozialismus*, pp. 308-32.
- ⁴⁰ E. von Skramlik, 'Die Auswirkungen der Lehre Pawlows,' *Das deutsche Gesundheitswesen*, 1951, vol. 6, 887-907 and 917-40; E. M. Tarejew, 'Die Lehre Pawlows und die Aufgaben der klinischen Medizin,' *Das deutsche Gesundheitswesen*, 1951, vol. 6, 953-9; A. G. Iwanow, 'Die Lehre von der höheren Nerven tätigkeit und die pathologische Physiologie,' *Das deutsche Gesundheitswesen*, 1951, 6, 1337-40 and 1373-9.
- ⁴¹ S. Rapoport, 'Zur Pawlow-Tagung, Leipzig, 15.-16. Januar 1953,' *Das deutsche Gesundheitswesen*, 1953 vol. 8, 29-31; L. Pickenhain, 'Bericht über die Pawlow-Tagung in Leipzig am 15. und 16. Januar 1953,' *Das deutsche*

Gesundheitswesen, 1953, vol. 8, 218-33; L. Pickenhain, 'Konsequenzen aus der Pawlow-Tagung in Leipzig 1953,' *Das deutsche Gesundheitswesen*, 1953, vol. 8, 669-72; L. Pickenhain and Matthies, 'Arbeitstagung der Staatlichen Pawlow-Kommission der Deutschen Demokratischen Republik vom 15. bis 17. Januar 1954 in Leipzig,' *Das deutsche Gesundheitswesen*, 1954, vol. 9, 457-71; 'Erfurt, Pawlow-Tagung am 2. und 3. Juli 1954,' *Das deutsche Gesundheitswesen*, 1955, vol. 10, 593-5.

⁴² Quoted after Fischer, Rohland and Tutzke (eds) *Für das Wohl des Menschen*, vol II, p. 98.

⁴³ BBAA, FG 191, Vorsitzender und Ständiger Stellvertreter, Institut für kortiko-viszerale Pathologie und Therapie, 1958-1968.

⁴⁴ *Jahrbuch der Deutschen Akademie der Wissenschaften*, 1960, p. 714.

⁴⁵ *Jahrbuch der Deutschen Akademie der Wissenschaften*, 1959, p. 460; 1961, p. 727. See BBAA, FG 191 for diagram.

⁴⁶ R. Baumann and G. Lange, 'Barrieren gegen Stress und Herzinfarkt: Gespräch mit Akademiemitglied Rudolf Baumann,' *Spectrum*, 1978, vol. 9, issue 11, 24-27.

⁴⁷ Cf. Reports on the work of the Institute, BBAA, FG 62, Fachbereich Medizin und Biologie, Institut für Kortiko-Viszerale Pathologie und Therapie, 1961-1968, Bericht über das Institut für kortiko-viszerale Pathologie und Therapie, 24.5.65; and Außenstelle Buch (Bu) A75, Rat der Direktoren, Institut für Kortiko-Viszerale Pathologie und Therapie, untitled, 8.8.67.

⁴⁸ Baumann and Lange, 'Barrieren gegen Stress und Herzinfarkt', and H. Scheel (ed.) *Herz-Kreislauf-Forschung: Rudolf Baumann zum 70. Geburtstag*, Berlin: Akademie-Verlag, 1982.

⁴⁹ BBAA, AKL 477, Beziehungen zu fremden Institutionen, Persönlichkeiten; BAB, DQ1, 5084, Sekretariat des Ministers, Prof. Friedeberger, Erarbeitung der Generalperspektive der medizinisch-wissenschaftlichen Forschung bis 1980, 1953, 1958-1965. See also Hecht, *What is done to protect people's health?*

⁵⁰ H. Kraatz and W. Scheler, 'Medizinische Wissenschaft,' in K. Winter (ed.) *Das Gesundheitswesen in der Deutschen Demokratischen Republik: Eine Bilanz zum 25. Jahrestag der Staatsgründung*, Berlin: VEB Verlag Volk und Gesundheit, 1974, 177-191, p. 181.

⁵¹ Bielka, *Die Medizinisch-Biologischen Institute*; BBAA, FG 79, Fachbereich Medizin und Biologie, Institut für Kreislaufforschung, 1962-1968.

⁵² Interview with Hans-Dieter Faulhaber, 9 August 2001. See also K.-G. Eickenjäger, 'Zielobjekt: Herz-Kreislauf- und Krebserkrankungen,' *Spectrum*, 1972, vol. 3, issue 6, 18-25, for some impressive pictures.

⁵³ BBAA, AKL 477, Beziehungen zu fremden Institutionen, Persönlichkeiten, Thesen zur Entwicklung der medizinischen Wissenschaft in der DDR.

⁵⁴ BBAA, FG 191, Institut für kortiko-viszerale Pathologie u. Therapie, 1958-1968, Klare an Kraatz, 8.10.63.

⁵⁵ The decentralised approach, interestingly, would have been much more similar to what was going on in West Germany, where plans to build a central cardiovascular research institute were never realised. Cf Bundesarchiv Koblenz, B142/3634, Zentral-Forschungs-Institut für Herz- und Kreislauferkrankungen - Prof. Wollheim, 1965-1967. Instead, the major West German funding body, the *Deutsche Forschungsgemeinschaft* had a *Schwerpunkt* (focus programme) on cardiovascular research and was funding groups at various university medical schools.

⁵⁶ BBAA, FG 191, Institut für kortiko-viszerale Pathologie u. Therapie, 1958-1968, Baumann an Klare, 9.11.1965.

⁵⁷ Stiftung Archiv der Parteien und Massenorganisationen der DDR im Bundesarchiv (SAPMO), DY 30/vorl. SED/21924, Zur Weiterentwicklung des medizinischen Forschungspotentials.

⁵⁸ SAPMO, DY 30/vorl. SED/21924, Erfahrungen des Sektors medizinische Wissenschaft und Ausbildung bei der Erarbeitung einer Analyse über die Leistungen und die Entwicklung der medizinischen Forschung als Grundlage für die Forschungskonzeption 1981-1990; Diskussion für die Mitgliederversammlung am 20. Juni 1978.

⁵⁹ For a comparison of the health systems of the GDR, the Federal Republic, and Nazi Germany, see Süß, 'Gesundheitspolitik'.

⁶⁰ A. Wollenberger, 'Kreislaufkrankheiten und Ernährung,' *Das deutsche Gesundheitswesen*, 1956, vol. 11, 1410-6; K. Winter, 'Verbreitung der Herz- und Kreislaufkrankheiten in der DDR. Einige Bemerkungen zu dem

Artikel von A. Wollenberger, veröffentlicht in Heft 42/1956 dieser Zeitschrift,' *Das deutsche Gesundheitswesen*, 1957, vol. 12, 327-31.

⁶¹ Cf H. Enke, 'Zur Entwicklung der medizinischen Statistik in der DDR,' *Zeitschrift für die gesamte Hygiene*, 1977, vol. 23, 41-43. For Winter, see 'Nachruf,' *Charité-Annalen*, 1987, 64-5. On Grotjahn, see D. Tutzke, *Alfred Grotjahn*, Leipzig: Teubner, 1979.

⁶² Cf. on this issue R. A. Aronowitz, *Making Sense of Illness: Science, Society, and Disease*, Cambridge: Cambridge University Press, 1998.

⁶³ G. Schott, 'Professor Dr. med. habil. Karl Heinz Staube zum 90. Geburtstag,' *Ärzteblatt Sachsen*, 2001, vol. 5, 191. See also K.-H. Straube, 'Epidemiologie und Dispensairebetreuung der Koronarerkrankungen,' *Zeitschrift für die gesamte innere Medizin*, 1966, vol. 21, 582-7.

⁶⁴ Cf. H. Redetzky, *Unsere Polikliniken: Entwicklung, Aufgaben und Ziele*, Berlin: Volk und Gesundheit, 1954.

⁶⁵ K. Winter, 'Die Bedeutung der Dispensairebetreuung für die Volksgesundheit,' *Das deutsche Gesundheitswesen*, 1957, vol. 12, 1549-52; H. Harmsen (ed.) *Die Dispensaire-Methode im Ambulatorium, in der Poliklinik und in der Werkgesundheitsfürsorge in der UdSSR und in Mittelddeutschland*, Hamburg: Akademie für Staatsmedizin, 1957; Fritz-Ludwig Schmidt, 'Über die Dispensairebetreuung Kreislaufferkrankter,' *Das deutsche Gesundheitswesen*, 1959, vol. 14, 352-7.

⁶⁶ See, for example: J. Knappe, G. Strube, K.-D. Dück, and G. Knappe, 'Epidemiologische Untersuchungen zur Prävalenz der Hypertonie in Abhängigkeit von sogenannten Risikofaktoren,' *Das deutsche Gesundheitswesen*, 1971, vol. 26, 2212-5.

⁶⁷ S. Böthig, W. Barth, and H. Hutzelmann, 'Die Häufigkeit der Koronarkrankheit, der Hypertonie und der peripheren arteriellen Durchblutungsstörungen bei 50- bis 54jährigen Männern einer großstädtischen Population: Ergebnisse der epidemiologischen Studie Berlin-Mitte,' *Das deutsche Gesundheitswesen*, 1970, vol. 25, 1048-9. Böthig now works for the World Health Organisation.

⁶⁸ Interview with Jens-Uwe Niehoff, 7 August 2001. See also J.-U. Niehoff, 'Risikofaktoren - Risikofaktoretheorie - Risikokzept: Theoretische Voraussetzungen und Schwierigkeiten bei der Interpretation,' *Zeitschrift für ärztliche Fortbildung*, 1978, vol. 72, 84-9 and 145-9.

⁶⁹ S. Böthig, J. Knappe, H. Heine, and G. Anders, 'Epidemiologie der Herz-Kreislauf-Krankheiten in der Deutschen Demokratischen Republik,' *Das deutsche Gesundheitswesen*, 1972, vol. 27, 823-9.

⁷⁰ Rainer Hohlfeld, 'Diskussion Herz-Kreislauf-Forschung,' unpublished transcript.

⁷¹ Interview with Hans-Dieter Faulhaber, 9 August 2001; H.-D. Faulhaber and E. Manke, 'Gegen den hohen Blutdruck,' *Spectrum*, 1981, vol. 12, issue 5, 8-9.

⁷² Lothar Heinemann, 'Gesundheit: Auf dem Weg zur Trendwende,' *Spectrum*, 1987, vol. 18, issue 7, 1-3.

⁷³ "About the MDC: History," http://www.mdc-berlin.de/englisch/about_the_mdc/e_index.htm, accessed on 7 May 2003.

⁷⁴ Sigerist, *Socialised Medicine*, p. 325.