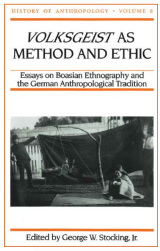

FROM VIRCHOW TO FISCHER

Physical Anthropology and "Modern Race Theories" in Wilhelmine Germany

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In 1900, Houston Stewart Chamberlain, the most famous racist writer of his time, complained bitterly that at a recent German anthropological congress, "under the pontificate of Virchow and the curacy of Kollmann"—two leading German craniologists who preached "the dogma [that] 'all men are equally gifted'"—science had "gone obviously insane." By "extolling hotchpotch of bloods as the panacea of mankind," Virchow and his school had over the last forty years "wreaked a lot of havoc" in Germany's "practical and political life" (1900:32).[1]

Chamberlain's lament introduces a somewhat jarring note into the chorus of the historiography of German racism. Looking backward from the Nazi Holocaust, one current of that literature emphasizes the continuity of racial thinking, if not "from Luther to Hitler," then at least from Herder and the Romantics in "the Holy Land of racial fantasies in Europe" (Poliakov 1987: 270). In contrast, the present study suggests that, in the highly salient discipline of physical anthropology, there is no such clear-cut ideological continu-

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1. In its present form, this essay is less than half its original length, and the bibliography has been reduced in about the same proportion—with the result that many details of argument and documentation are not included here, and will no doubt appear in future essays by the author. Editor's note.

ity. A second historiographical tendency, emphasizing the role of "scientific racism," locates the origin of the "Aryan myth" of the Nazis in the laboratories of nineteenth-century craniology (Stölting 1987). In contrast, the present study suggests that, if such a "national style" of science did exist (Harwood 1992), German physical anthropology, in contrast to the dominant French and American schools of the 1860–90 period, could, in regard to the issues of Aryanism and anti-Semitism, in fact be described as "anti-racist." A third body of literature, stressing social and economic factors, treats the "science of race" and "race hygiene" as "pseudosciences" forced upon the universities by the Nazi regime (Kater 1989). In contrast, the present study shows that the teaching of racial anthropology began in the later nineteenth century, while race hygiene (a distinct discipline) began to be taught in the first decade of the twentieth. Both were at the time regarded as legitimate scientific endeavors, and cannot simply be equated with racism, anti-Semitism, and bourgeois conservatism (Merten, 1983; Müller-Hill 1989). On the other hand, it is the case that, in response to "external" political agendas, there was a break in the liberal-humanitarian tradition of German anthropology at the turn of the century, and that this influenced the "internal" development of the discipline, reorienting research programs, methodology, paradigmatic postulates, and disciplinary ethics. A fourth historiographic tendency would find the "scientific origins of National Socialism" specifically in German Social Darwinism, emphasizing the role of Ernst Haeckel (Gasman 1971). Here, again, the relationship is complex. Aryanism was not a product of German biology, but of linguistics and archeology, and German physical anthropology, long resistant to Haeckel's Darwinism, only converted to Darwinism after the mid-1890s. The critical link between racial politics and biological science came after 1900, in the debate between neo-Lamarckians and neo-Darwinians, when "good politics" became linked with "bad science" (and vice versa)—two fatal alliances which were to have far-reaching influence on the consolidation of a racial political line within the German bio-medical community.

As Chamberlain's lament suggests, late nineteenth-century German physical anthropology—in which Franz Boas had received a brief early training under Virchow—was, in contemporary terms, quite "liberal" on matters of race. Indeed, a survey of German anthropological literature during the 1850–90 period indicates nothing to predestine the later intimate collaboration of German anthropology with the Nazi regime. Among all Western countries, Germany was the one where the first comprehensive statement of the Aryan myth—the famous *Essai sur l'inégalité des races humaines* (1853–55), by the French diplomat, amateur orientalist, and writer Arthur de Gobineau—initially met the most critical reception (Schemann 1910:61–71, 186–87). Prior to Gobineau's death in 1880, the number of copies of the *Essai* circulating in Germany was no more than several dozen (Lémonon 1971:I, 386). The

few German scholars who had read Gobineau, whether naturalists like the old explorer Alexander von Humboldt, linguists like August Pott, or physical anthropologists like Hermann Schaffhausen, opposed his Aryan epic on both scientific and moral grounds (Lémonon 1971:I, 126–328; Honigmann 1990). Dismissing Gobineau's arguments for the permanent inferiority of Blacks and the immutability of types, Schaffhausen concluded in 1857: "[J]ust as Christianity teaches the equality of all men, science must recognize that in spite of the diversity of levels of civilization, all human stocks have the same natural base and each race has the right to live and the ability to develop" (in Lémonon 1971:I, 323–24).

By the time Chamberlain penned his complaint, however, changes were already under way in the surrounding popular and scientific racial discourse that were also to affect German anthropology. From the 1880s on there was a rising stream of speculation by linguists and archeologists on Aryan origins. Eugenic ideas found their first German advocates in the next decade: in 1891, Wilhelm Schallmayer published *Über die drohende körperliche Entartung der Culturmenschheit* ("On the Impending Physical Degeneration of Civilized Humanity"); and in 1895, Alfred Ploetz, the main organizer of the "Race hygiene" movement in Germany, published *Die Tüchtigkeit unserer Rasse und der Schutz der Schwachen* ("The Fitness of Our Race and the Protection of the Weak"). In 1894, Ludwig Schemann, Gobineau's apostle in Germany, founded a "Gobineau Society"; in 1899, Chamberlain brought out the first edition of his bestselling *Die Grundlagen des neunzehnten Jahrhunderts* ("The Foundations of the Nineteenth Century"). The major books of the German "anthroposociological" school by Otto Ammon, Ludwig Woltmann, and Ludwig Wilser appeared between 1893 and 1907 (Massin 1992). In the first years of the century, three new reviews were created, each one dedicated to the dissemination of one of those currents of thought: 1902 saw the first number of *Der Hammer*, edited by the crudely racial anti-Semite Theodor Fritsch, as well as the founding of Woltmann's *Politisch-Anthropologische Revue* as organ of the anthroposociological school; in 1904, Ploetz's *Archiv für Rassen- und Gesellschaftsbiologie* was established as an outlet for the eugenic movement. Little discussed a few years before, these "modern race theories" (Hertz 1904) became the focus of nation-wide debates at the turn of the century, when nationalistic political organizations such as the Pan-German League provided a public forum (Chickering 1984:245). The new ideas were immediately translated into political programs: in 1905, the Austrian Josef Reimer published *Ein pangermanisches Deutschland: Versuch über die Konsequenzen der gegenwärtigen wissenschaftlichen Rassenbetrachtung für unsere politischen und religiösen Probleme*, in which he visualized the future Third Reich as a "racial democracy" uniting all Teutonic countries from Scandinavia to Austria, controlling Western Europe and colonizing Eastern Europe.

Faced with this ideological landslide, how did German physical anthropology react? Had Chamberlain lived until 1933, he would have seen a radical transformation: German biological anthropologists, most of them members of the Nazi party, were among the most zealous scientific supporters of the Nazi regime, with one of the lowest emigration and persecution rates of all the sciences (Proctor 1988a, 1988b; Weingart, Kroll, & Bayertz 1988; Müller-Hill 1989; Weindling 1989; Massin 1993a). The question, then, which this essay addresses is: What happened to the liberal German anthropology that Chamberlain lamented in 1900?

Rudolf Virchow and the Institutionalization of German Physical Anthropology, 1869–1902

Physical anthropology in Germany was formed at the cross-road of a number of scientific traditions: medical and comparative anatomy, craniology, and anthropometry; geography, ethnology, and linguistics; archeology and history; and geology and paleontology.[2] It was only in the 1860s that it began to be established as a discipline claiming scientific autonomy and endowed with a specific methodology, and, although medical men took the leadership (Querner 1969), the institutions established in that decade were quite mixed in character.

After several preliminary initiatives, it was Rudolf Virchow who in 1869 led in the founding of the first German anthropological society, the Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (Andree 1969), and who played a leading role also in the formation of the similarly named German national society the following year. The most famous cellular pathologist of his day, Virchow was Professor of Pathological Anatomy at the University of Berlin, where he also served as Rector. A scholar of wide-ranging scientific interests, he pursued a variety of anthropological researches, including work in prehistory, craniology, and large-scale anthropometric surveys. As scientist, he was a staunch empiricist, to the point of regarding Darwinian

2. In the Anglo-Saxon tradition, the unmodified form "anthropology" has, since the 1870s, generally been used to refer to a more embracive inquiry including what in the United States have come to be called "the four fields"—one of which is "cultural anthropology" or (in an earlier usage) "ethnology." "Ethnology" itself has a complex history, and before its usage as an equivalent to cultural anthropology it referred (in both the Anglo-Saxon and French traditions) to "the science of race." In Germany (and in France as well) the term *Anthropologie* has (with a few exceptions) been used to refer to what in Anglo-Saxon countries came to be called "physical anthropology," whereas "cultural anthropology" or "ethnology" (in the more recent Anglo-Saxon sense) has been referred to by *Ethnologie*, *Ethnographie*, or *Völkerkunde*. Following Virchow, who once said that "anthropology" has "by itself nothing to do with culture" (*VhB* 1894:504), in this essay "anthropology" will refer to physical anthropology.

biological evolution as an unproven hypothesis. In politics, he was an outspoken left-liberal, a leader of the anti-Bismarckian Progressive Party and a member of the Reichstag from 1880 to 1893. And he continued to play a pivotal role in the institutionalization of German anthropology: according to Franz Boas, who in 1885 had worked under Virchow and the ethnologist Adolf Bastian at the Berliner Museum für Völkerkunde, Virchow's "far-reaching influence" depended largely on his "leading part in the organization of anthropological work in Germany" (1902:47). For more than thirty years before his death in 1902, Virchow was in fact the dominant force in German physical anthropology—intellectually, ideologically, and institutionally (Ackerknecht 1953; Andree 1976).

Following the formation of the Berlin and national societies, the next quarter century saw the founding of twenty-five local and regional anthropological societies, including those at Munich and Leipzig. The *Archiv für Anthropologie* became the organ of the national society, which also published a monthly abstract of its proceedings, the *Correspondenz-Blatt;* the *Zeitschrift für Ethnologie*, founded by Adolf Bastian in 1869, became the official organ of the Berlin society. The Munich society, presided over by Virchow's second-in-command, Johannes Ranke, published its own organ, as did a number of local societies. By 1896 there was also an international bibliographic review of anthropological literature, Buschan's *Centralblatt*, which grew at a rapid pace. For the year 1894 alone, Ranke counted 365 anthropological publications in Germany (*CoB:* 1896:88). Three years later, the Strasbourg anatomist Gustav Schwalbe began publishing the *Zeitschrift für Morphologie und Anthropologie* as a journal "exclusively dedicated to physical anthropology."

During the turn-of-the-century period, German physical anthropology played a leading role in the European scientific world. Its sphere of influence did not stop at the territorial boundaries of Bismarck's Reich but included German-speaking Switzerland, Austria, Hungary, Bohemia, Poland, and the Baltic countries, as well as parts of the Netherlands, the Balkans, and Scandinavia. Students, academicians, and scientific meetings circulated continuously between the German Reich, the Austrian double monarchy and German-speaking Switzerland, forming in effect one "scientific nation." Attracted by the prestige and power of German science, students and scientists from much of continental Europe outside the French sphere came to study and work at German universities and museums. In turn, a great number of German anthropologists spent some time in the course of their career studying or teaching in universities in Switzerland or Austria. Central European anthropologists often published their work in German, in German anthropological reviews or through German publishing houses. Outside Europe, the German anthropological community was linked to a German-speaking diaspora, with people such as Franz Boas in New York, Erwin von Bälz in Tokyo, and Paul Adolf

Lehmann-Nitzsche in Buenos Aires, all of whom participated actively in German scientific discussions and made occasional trips to Germany.

Despite the prestige and influence of German physical anthropology, however, the level of anthropological professionalization and institutionalization was still low. Although there was a considerable degree of what might be called "internal" disciplinary institutionalization (in terms of organizations and publications), "external" institutionalization (in terms of academic and government recognition) was quite limited, both relatively and absolutely.

Assuming, on the basis of the 2350 persons known to have belonged to the German Anthropological Society in 1884 (Zängl-Kumpf 1990:96), that there were at least 2500 members at the turn of the century, and (somewhat arbitrarily) that one-third of these had a primary interest in physical anthropology, only about 1 percent (i.e., fewer than ten) were practicing physical anthropology as a full-time academic profession on the territory of the Reich (Ranke 1903). Although the number of academics in German universities grew almost fourfold between 1864 and 1910 (Ringer 1988:94), physical anthropology did not profit much from this tremendous expansion. There was not a single chair until 1886, and for the twenty years following, from 1886 to 1906, the only anthropological institute (and full professorship) among twenty-one German universities was that of Ranke at Munich. It was only in 1907 that a second institute, directed and largely funded by the anatomist Hermann Klaatsch, was established at the University of Breslau. In Berlin, Virchow was professor of pathology in the faculty of medicine, and had to store the ten thousand skulls and skeletons he had collected either at the Pathological Institute or in his home (Hiltner 1970:51). It was not until 1900 that an extraordinary professorship was established in Berlin for Felix von Luschan, an Austrian physician who had studied with Paul Broca, the leading figure in French physical anthropology, and who had served as docent at the Berlin Museum since 1885. And while Luschan's chair became a full professorship in 1909, he never succeeded in founding an anthropological institute (Kiffner 1961; Schott 1961). Although he was by this time director of the prestigious Oceania-Africa section of the museum (most prestigious because it included the German overseas colonies), Luschan had to be content with a rather dark "miserable room in the basement" to store and measure his thousands of skulls (Rusch 1985:442; Grimm 1986:423).

Since Virchow's institutional policy was to separate physical anthropology both from philosophy and from non-medical natural sciences like zoology and geology, most of the well-known anthropologists were professors of medicine who treated anthropology as *Nebenfach*, a side interest, or an unremunerated hobby. These included Klaatsch at Heidelberg (until 1907), Gustav Schwalbe at Strasbourg, and Gustav Fritsch, Wilhelm Krause, and Wilhelm von Waldeyer at Berlin. The very few who held academic positions as anthropologists, such as Emil Schmidt at Leipzig or Georg Thilenius at Breslau, were only hon-

Rudolf Virchow, the leader of German physical anthropology in the last third of the nineteenth century, surrounded by human skeletal material, in the Institute for Pathology of the University of Berlin, c. 1900. (Courtesy of the Bildarchiv preussischer Kulturbesitz, Berlin.)

orary professors, extraordinary professors (i.e., without chairs), *Privatdozenten*, or assistants. And while "ordinary professors" (or holders of chairs) enjoyed an enviable social and economic position in imperial Germany, this was generally not true of other academics (Busch 1959, Burchardt 1988:163–88; Ringer 1988:96). As extraordinary professor at Freiburg, Eugen Fischer made less than the average German industrial worker (FP: *Antrag zum Budget* 1908–9). In this context, "anthropologists" without a personal fortune or other lucrative profession had to renounce academic careers for better-paying positions such as school teacher or librarian.

Nor did the field train new members in significant numbers. From 1870 to 1910, only three university "habilitations" (conferring the right to teach as private docent) in physical anthropology were granted in all of Germany: Schmidt in 1885, Luschan in 1888, and Birkner in 1904. Three others (among them Eugen Fischer) were habilitated in anatomy "including physical anthropology"; Rudolf Martin and Theodor Mollison acquired their habilitations in Zurich (Schwidetzky 1982:87–89). The academic calendar of 1902–3 indicates that physical anthropology proper was taught in only six of the twenty-

one German universities: at Berlin, by Luschan and the anatomy professors Hans Virchow (Rudolf's son), Gustav Fritsch, and Wilhelm Krause; at Breslau, by Thilenius, as extraordinary professor of anthropology and ethnology; at Erlangen, by Arnold Spuler, docent in anatomy; at Freiburg, by Fischer, as docent for anatomy and anthropology; at Heidelberg, by Klaatsch, as extraordinary professor of anatomy; and at Munich, by Ranke (Ranke 1903).

The practical consequence of this low level of professionalization was that more than 90 percent of German "anthropologists" at the turn of the century, when not merely nominal members of the German anthropological society, were more or less amateurs, practicing physical anthropology as a secondary field or hobby. The socio-professional distribution of "anthropologists" can best be illustrated by the case of the Berlin society, which in 1899 counted 501 members, whose occupations were listed in the society's *Verhandlungen* (*VhB* 1899:3–15). Among the three hundred who resided in Berlin, fifteen (5 percent) held a position in the University or at the Berlin Museum as ethnologists or archeologists, but only one (Luschan) as physical anthropologist. A socio-professional analysis of this community shows how vague the boundary was between "professional" anthropologists and "amateurs" in this pre-professionalization period. Of those 501 ordinary members, 190 were private physicians, medical academics, or people with M.D.s working in non-medical fields; about 55 were non-medical academics, librarians or museum employees. The other 255 included tradespeople and accountants; painters and photographers; officials in government and colonial administration; school teachers and persons of private means; army or navy officers; scientists and professionals of various sorts; publishers or booksellers; priests or rabbis; travellers; and two ladies, one of them a novelist. In short, at least half the membership practiced anthropology as a "Sunday hobby" (Luschan 1916:18), and did not know much more about physical anthropology than Chamberlain or many of the race theoreticians.

To mobilize this relatively unprofessional and imperfectly institutionalized group against dilettantish and amateur racism was no small task. It was complicated by the fact that by 1900 physical anthropology itself had entered a period of internal scientific crisis. Prior to that time, however, Virchow and his colleagues were able for three decades to speak as the voice of a "scientific anthropology"—which, in late nineteenth-century contemporary terms, must be regarded as anti-racist.

The Racial Liberalism of German Anthropology under Virchow's Leadership

From the beginning of its institutionalization, German anthropology was staunchly monogenist, in contrast to France and the United States, where

strong "polygenist" movements had developed in mid-century (Blanckaert 1981; Stanton 1960; Stepan 1982:44–46; Stocking 1968:42–68). The few German polygenist anthropologists, like the materialist Carl Vogt, had had to retire or emigrate because of their political radicalism and participation in the 1848 Revolution (Gregory 1977:51–73, 254). The two main organizers of the first meeting of German anthropologists in 1861, the Prussian aristocrat, anatomist, and embryologist Karl Ernst von Baer and the anatomist and physiologist Rudolf Wagner, were both deeply Christian defenders of the spiritual values of a universal humanity threatened by polygenism and the biological materialism of early Darwinians (Baer & Wagner 1861:24; Ottow 1966; Montgomery 1974:86). Almost all leading German anthropologists residing on the Reich's territory, from the founding of the German Anthropological Society in 1870 to World War I, professed a belief in the unity of the human species.

Although it was of course argued in scientific terms, monogenism was more than a purely scientific matter. Virchow confessed that behind his "penchant" for monogenism was a "traditional," even a "sentimental" idea: "I cannot restrain myself from thinking, when I look at the whole history of Mankind, that we are really brothers or sisters" (in Ranke 1887:233)—although as an empiricist he nevertheless noted the "apparent" unity of mankind had not yet been "exactly demonstrated," and that the problem of race formation was empirically "still unsolved" (Virchow 1896a:13, 43). Ranke took advantage of his position as permanent general secretary of the German anthropological society from 1878 to 1908 to drum into his colleagues, at the annual assemblies, the unity of mankind and the "equality of feelings and mental life of all humanity" (*CoB* 1893:82, 1896:91, 1906:106).

This tenet was so strong that reactions were instantaneous when some German anthropologists were tempted to expel some "savages" from humanity by "animalizing" them. When the Swiss-German explorers Paul and Fritz Sarasin, both members of the Berlin society, manifested a "certain tendency to rank the Veddas among the chimpanzees" in a volume they published in 1892, they were criticized by Ranke at the 1893 national meeting (*CoB* 1893:83–84). Occasionally, a nonconformist like the brilliant Americanist Paul Ehrenreich, a member of the progressive Jewish circles around Virchow in Berlin, might suggest that monogenism was simply a convenient scientific prejudice to prove "men were all brothers" (1897:18–21). But, for the most part, Germany remained the country of monogenism.

Within, or alongside this publicly proclaimed monogenism, however, there were occasional discreet manifestations of what might be called a "bigenist" hypothesis. Although Schaffhausen was a convinced ethical monogenist and liberal Catholic (Zängl-Kumpf 1990:24–25), from a scientific point of view he was inclined to think that mankind originated from two primitive stocks (Schaffhausen 1890:127–28). Ludwig Wilser, a non-academic Teutonist anthropologist, went a step further by relating two primitive human forms to the

two main types of anthropoid apes in terms of both pigmentation and craniology (Wilser 1894:17–18); but because Wilser was notorious as a heated controversialist with marginal opinions, none of his colleagues at the 1894 meeting of German anthropologists reacted to his speech. However, this was not the case when Klaatsch, professor of anthropology in Breslau—previously an advocate of the unity of mankind (1902b)—made a dramatic about-face at the 1910 meeting. On the basis of comparative morphological study of prehistoric human races, Klaatsch argued that there were two main branches of human evolution: one Western stock from which emerged the gorilla and Neanderthal man, and one Eastern stock for the orang outang and the Aurignacian race (1910:91–99). The reaction, however, was immediate. Erwin von Bälz, for thirty years professor for internal medicine at Tokyo University, suggested that Klaatsch would meet "a heavy opposition"—citing the statement of Felix von Luschan that "we all agree that mankind has arisen only from one place" (*CoB* 1910:99).

While Klaatsch, seconded by Fritsch, persisted in his polygenism, the German anthropological community as a whole remained monogenist (Luschan 1909:202). This included even several younger men who were later to become Nazi anthropologists: Theodor Mollison, docent at Zurich, and Eugen Fischer, professor of anatomy and anthropology at Freiburg—who cited the high fertility of the hybrid population of Boer colonists and Hottentots he studied in German Southwest Africa as a definitive demonstration of the physiological unity of the human species (1913:227). At a time when the controversy between monogenists and polygenists seemed obsolete in many countries, German anthropologists still found it necessary to reaffirm the common origin of mankind.

The racial liberalism of German anthropology is also exemplified by its negative reaction to the emergence of modern anti-Semitism and Teutonic racism (Strauss & Kampe 1985). The rapid industrialization of Germany after its political unification and several economic crises during the "founding years" of the new Empire produced a host of critics of modernity, of individualistic liberalism, and of the people who were seen as their main agents: the Jews (Zmarlik 1982; Jochman 1976). More than traditional social and religious prejudice, the animosity against Jews became for many a general *Weltanschauung*, in which "the Jews" were seen as the key to an understanding and solution of all the problems, past and present, that affected European nations (Pulzer 1966; Rürup 1976). The fight against *Judentum* became a vital *Kampf*, a Manichean "struggle for life" of the German or Aryan *Volk* against its most dangerous "parasite." This dramatic turn in the late 1880s may be documented by the titles of such works as *Der Verzweiflungskampf der arischen Völker mit dem Judentum* (Ahlwardt 1890).

The change from what was first called the *Judenfrage* ("Jewish question") to

a *Rassenfrage* ("racial question") occurred at about the same time. The most significant work symbolizing this transformation was *Die Judenfrage als Racen-Sitten- und Culturfrage*, published by the influential economist and philosopher Eugen Dühring in 1881—which by the third edition of 1892 had been retitled *Die Judenfrage als Frage der Racenschädlichkeit [racial toxicity] für die Existenz, Sitte und Cultur der Völker*. This intellectual assault was accompanied by a flood of popular papers and a campaign of political agitation, culminating in 1893 in the election of sixteen candidates of the anti-Semitic leagues and political parties (Rürup 1976). Although the tide of purely political anti-Semitism thenceforth slowly ebbed until the eve of the World War (Levy 1975), anti-Semitism as a social phenomenon did not vanish. Linked to the call for Germanic solidarity and purity, it spilled over as diffuse "cultural code" (Volkov 1978) or overt ideology into many different associations, political movements, and the popular press, spreading to large segments of German society, including most ominously the academic and medical community, and student organizations. In 1896, the German Students' Union decided to exclude not only Jews but baptized students of Jewish origin (Berding 1991:108). By 1910, one of these anti-Semitic academics could proclaim: "Today the idea of social anti-Semitism has become the common property of all academic circles" (in Jarausch 1982:356; see also Kampe 1988:54–107).

In various ways, however, leading German anthropologists did what they could to resist the anti-Semitic landslide. In 1880, when anti-Semitic leagues successfully collected several hundred thousand signatures on a petition to the Bismarck government, Virchow was one of the few officials to publicly protest against the collective Judeophobia. As deputy of the Progressive Party in the Reichstag, he challenged Chancellor Bismarck to explain his position on the issue. In Berlin, Virchow was the main political opponent of the notorious anti-Semite Stöcker, twice defeating him for office. Virchow was so opposed to the new political anti-Semitism that a legend spread in anti-Semite circles that he was himself a Jew; his Progressive Party's systematic opposition to anti-Semitism was such that adversaries spoke of it as the "Jews' Party" (Kümmel 1968). In the Berlin Anthropological Society, the substantial Jewish membership (12 percent in 1899) helped liberal anthropologists to form a block against anti-Semitic outsiders. At the peak of political anti-Semitism in 1893, Ranke, general secretary of the German Anthropological Society, declared at the society's annual meeting: "Before the tribunal of anthropological research, there is no justification for ethnic or racial hatred" (*CoB* 1894:179).

But if Virchow insisted in the Prussian Parliament on distinguishing between "race" and religious affiliation, his position on the matter of a "Jewish race" reflected an uncertainty characteristic of academic anthropology (cf. Kiefer 1991:7–31). On the basis of his pigmentation survey between 1871 and 1886 of almost seven million German pupils, which had shown that

11 percent of Jewish children had blond hair, blue eyes, and fair skin, Virchow had called into question their status as an anthropological "race," and later defined them instead as a "national race" (1886, 1896a:3). But in 1880 he spoke of a "Jewish race"; what he opposed was the idea that it was doomed, "by its nature, its dispositions, its instincts to be abominable"; on the contrary, it possessed "excellent aptitudes" and had accomplished the "highest achievements" (in Kümmel 1968:169). He did, however, still speak of a "striking difference between the Semites and the so-called Aryans," of "Semitic blood," "Semitic race," and of the "Jewish nose" as "so crooked, that it was enough for many of them to replace a birth certificate" (1885:225, 227–29; *CoB* 1900: 71, 113). Similarly, Johannes Ranke felt that the "slightly crooked nose, fleshy at the end," and the "pouting lips of the ancient Semites in Babylon" were "still characteristic of present Jews" (*CoB* 1907:99).

Most serious anthropological studies, however, from Kollmann in 1885 to Weissenberg in 1909, maintained that Jews were not a "race" but an aggregate of several types. Further, for these liberal anthropologists difference of race was not a hindrance to cultural assimilation. In Virchow's eyes, the numerous Jews driven by pogroms out of the Russian Empire to the more liberal environment of Germany could be as fully germanized as had been the French Huguenots forced out by the revocation of the edict of Nantes. Jews in Germany had become "for us, a powerful ferment of the progressive culture" (1872:317).

Luschan, who as holder of the Berlin chair of anthropology was the leader of the liberal tradition after Virchow's death in 1902, was equally opposed to anti-Semitism. In "The Anthropological Position of Jews" in 1892, he argued that Semites had built a civilization with epics, cuneiform script, and monumental palaces at a time when "we Germans were still living in caves and earth holes and had barely learned to transform silex [flint] into implements." No wonder then that the "educated European recognized in his Jewish fellow citizen not only the living witness and heir of an ancient and venerable culture, but also respects and esteems and loves him as his best and most faithful coworker and fire-comrade in the fight for the highest goods of this earth, in the fight for Progress and intellectual freedom" (1892:99–100).

Luschan's article was, however, atypical insofar as "classical" German anthropology of the years 1890–1914 had in fact little interest in Jews, except insofar as they were on a few occasions used as an argument in the controversy on the permanence of types (Kollmann 1900b:3). Of the several thousand articles published in the four main anthropological reviews during this quarter century, there were only six dealing with Jews—the other five were by Samuel Weissenberg, a Ukrainian Jewish physician educated in Germany who with the financial backing of the Rudolf Virchow Foundation had studied Jews in Central Asia, the Caucasus, Crimea, and the Near East (Kiefer 1991:39–52; Weissenberg 1895, 1909).

A similar pattern of resistance by physical anthropologists was evident in the face of the efflorescence of Pan-Germanism and *völkisch* movements in the 1890s. Like anti-Semitism, Pan-Germanism and *völkisch* ideology were at first political and cultural (Stern 1961). The idea of the "German race" was not so much a biological concept as a synonym for ethnicity and political community, an ambiguous catchword mobilizing the public around the idea of a permanent specificity of the Germanic *Weltanschauung* and a correct way to behave in society. Until the beginning of the 1890s even Jews, if they converted to German nationalistic norms, could be assimilated. It was only then that the lineaments of a comprehensive philosophy of racism began to permeate Germanic and anti-Semitic movements, becoming well-defined "race theories" at the turn of the century (Chickering 1984:234).

When the first waves of Teutonic racism swept Germany in the 1890s, established anthropology reacted as critically as it had against anti-Semitism. At the 1894 national meeting of anthropologists, Virchow attacked the "Pan-Aryan dogma," speaking of the "blood superstition" of "nativist fanatics" as a "residue of prehistorical times," a "resurgence of the very old idea of the inferiority or even wickedness of barbarians or allophylen" ("foreign stocks") (*CoB* 1894:178–79, 1896a:16–17). On several occasions, he ridiculed "our enthusiasts, the Pan-Germanists," who tried to find Teutonic tribes in every important prehistorical site; for him, the "advantage of modern anthropology" was that it kept "as far as possible from pure hypothesis," striving instead "to help objective truth to gain recognition and to respect only such truth as science" (*CoB* 1897:70, 75).

Virchow's racial liberalism is well known. But far from being alone in the battle against Teutonic racism, he was supported by most of his leading colleagues. His second-in-command, Ranke, maintained his hostility to Teutonic or Nordic Race theories until his death. Writing for a Munich weekly in 1908, Ranke argued that headform was not a racial character (Geus 1987:13–14); his last book review, in praise of Friedrich Hertz's anti-racist *Rasse und Kultur* (1915), warned against the theories of racial antagonism that were "recently growing up in a alarming manner," and urged the need to instruct the public on how the works of Gobineau and Chamberlain "contradicted the real scientific facts" (*AA* 1917:73).

Julius Kollmann, the third most influential of the German physical anthropologists, was equally outspoken. At a general meeting of the German anthropological society in 1892, he insisted that all European races were "equally gifted for all cultural tasks." Playing off against each other the advocates of dolichocephalic and brachycephalic superiority, Kollmann suggested ironically that anyone "who wants to practice anthropology with a political flavor" was free to choose between the two (1892a). A decade later, when Chamberlain advertised his *Grundlagen des neunzehnten Jahrhunderts* in a popular Austrian

cultural review, Kollmann immediately retaliated in the same journal with a denunciation of the "madness of racial purity." Attacking the notion of a "Germanic race," he insisted that race "no longer determined the life of nations." While it might be politically "convenient" for a nation to believe in the "unity of its race," it was in fact a "fairytale"—a "meaningless and "deadly word" which had caused a great deal of "disaster" (1900a).

Others besides these institutional leaders also tried to shield their anthropological society and to alert the German public against such tendencies. In 1903, when the amateur anthropologist and Teutonist Ludwig Wilser painted the tall, dolichocephalic, fair-haired, blue-eyed, white-skinned "master race"—the *Homo Europaeus* of the French anthroposociologist Vacher de Lapouge—as an "incomparable great influence" on "the civilization and evolution of our continent," Herman Klaatsch was "commissioned by many of his colleagues" to protest officially against "a speech which disparages the dignity of science" (*CoB* 1903:186–87). Similarly, Aurel von Török, who held the chair of anthropology at Budapest, denounced Lapouge's "fantastic speculations" and "fairytales" (1906b:115–16). Rudolf Martin, in taking up his post as director of the Zurich Institute, spoke for many of his colleagues by condemning as "unscientific and misguided" the attempt to "tug anthropology into politics" (1901:13, 17).

Following Virchow's death in 1902, the task of politically controlling the "scientific truth" was taken over by Felix von Luschan. Condemning those "completely fanatic men" who wanted to breed a pure race of dolichocephalic blonds, Luschan insisted that all the greatest European civilizations were the product of cross-breeding; only "incurable chauvinists still speak of an Aryan race" (1905:1, 1912:55). In his continuing correspondence with his "dear friend" Franz Boas—with whom he had worked at the Königliches Museum für Völkerkunde—he complained about race theorists such as the national-racist prehistorian Wolff, a disciple of the Pan-Germanist archeologist Kossina (and "notorious head of the criminal anti-Semites"), who in a prehistorical review had referred to the Jewish linguist Sigmund Feist as a "mongrel man of civilization" and a "world-citizen of the red and gold International" (Wolff 1914:309; LuP: FL/FB, 6/16/14).

The resistance of established anthropologists to Aryan, Teutonic, or anti-Semitic racism was facilitated by the fact that, until 1910, most "race theoreticians" were either outsiders or did not hold central positions in the German anthropological society. Until the founding of Buschan's and Schwalbe's new reviews in 1896 and 1899 (*CeB* & *ZMA*), the main anthropological journals were controlled, directly or indirectly, by the liberals Virchow, Ranke, and the ethnologist Adolf Bastian. Virchow was particularly concerned to control the scientificity and "political correctness" of all anthropology published in professional journals, and thanks to his huge personal influence, was able to bar

access to those he considered politically or scientifically undesirable "amateurs" (cf. Andree 1976:I, 127). This situation was acknowledged even by racial theorists, one of whom commented that in the field of racial biology, "two groups are facing each other: the so-called race theorists and the scientific anthropologists." The former were usually described by the latter as "dilettantes who indulge in imaginative hypothesis and whose work consequently cannot claim a scientific value" (Driesmans 1904:241). And indeed, an analysis of the social status of the eight main German theoreticians of race during the 1890–1914 period indicates that only one of them (Otto Ammon) was an established figure in the institutionalized anthropological community.

The race theorists may be seen as three concentric groups. The largest embraced the countless "philosophers of race" and theoreticians of racial anti-Semitism who were completely outside of and rejected by the established anthropological community. Among them were Ludwig Schemann, Gobineau's apostle in Germany, who was a philologist and historian; Willibald Hentschel, advocate of the stud-breeding of the "Aryan race," who was a successful biochemist; and Houston Stewart Chamberlain, the most notorious of all, who remained an essayist, despite a doctorate in biology and brief study of anthropology under Carl Vogt at the University of Geneva (Nagel-Birlinger 1979: 25; Löwenberg 1978; Field 1981). None of these men published a single line in an anthropological review. While Schemann did attempt to establish contact with anthropologists, most racial theorists cared little for established science. Chamberlain in fact poked fun at craniologists and prided himself on his dilettantism (1913:lxviii–lxx et passim).

A second group included those at the margins of institutional anthropology, whose work was often published in sociological or medical reviews. In contrast to the first group, whose writings were not even reviewed in anthropological journals, these scholars were important enough to be taken into account scientifically, either positively or negatively. Among them were the anthroposociologist Ludwig Woltmann and the founder of German eugenics Wilhelm Schallmayer (Hammer 1979:8–30; Weiss 1986, 1987a), both of whom were physicians knowledgeable in anthropology. But although they had personal contacts among established anthropologists, and Schallmayer was a nominal member of the German anthropological society, neither man published in established anthropological reviews. Another who may be included in this group is Alfred Ploetz, organizer of the "Race hygiene" movement in Germany, who had studied medicine and psychiatry and did research on heredity; although he joined the Berlin anthropological society in 1903 (Weindling 1989:134), he did not in the pre–World War I period contribute to anthropological reviews or textbooks.

The third group of racial theorists—most notably, Otto Ammon and Ludwig Wilser—were active members of the German anthropological society and

did work of the sort conventionally done by physical anthropologists (anthropometrical surveys, morphological studies, etc.). As the founder of anthroposociology in Germany, Ammon promulgated a Darwinian racial sociology that interpreted social class in terms of physical characteristics. Although he had no established university position, Ammon was quite influential by virtue of his classic anthropometric surveys of Baden and his position as general secretary of the anthropological commission of the Karlsruhe Anthropological and Archeological Society (Lichtsinn 1987:3–5). However, as the result of a financial dispute in 1889, Ammon effectively withdrew from the German anthropological society, refusing to attend meetings for the next twenty-one years. His coworker Ludwig Wilser, although serving for a time as president of the German Society of Natural Sciences, was a very difficult personality, constantly involved in disputes (even to the point of actual duels); although he made numerous contributions at the annual meetings, his bombastic style left him a marginal figure in the liberal and academically cautious environment of the German anthropological society.

Viewed as a single group, the racial theorists—each of them a *Privatgelehrter* without professorial status—were clearly marginal to the small community of established physical anthropologists and medical anatomists. Even those who were nominally members were without significant institutional positions within it. Throughout the period of Virchow's dominance, then, the anthropological establishment of Germany actively maintained what was in contemporary terms an "anti-racist position." From a present perspective, however, there were serious qualifications of this racial liberalism, especially when it came to those groups who did not share the "white" skins of European peoples; and with Virchow's passing, the nationalism of German anthropologists also began to take on a more imperialistic, pessimistic, and Darwinian character.

Colonialism, Nationalism, and the Retreat from Racial Liberalism

In the period of belated imperialist expansion that began under Bismarck in the early 1880s, substantial numbers of "colored people" in Africa and Oceania came under German colonial rule. The attitudes of liberal anthropologists toward this historical process and the peoples it encompassed were complex and contradictory. Liberal anthropologists generally condemned the inhuman treatment of "inferior races." After a member of the Parliament in 1892 displayed in the Reichstag an instrument used on German ships for the corporal punishment of Negroes, Virchow presented it at a meeting of the Berlin anthropological society with the clear intention of horrifying his colleagues (VhB 1892:80). However, his early pacifist and anti-militarist opposition to Bismarck's colonial policy was sometimes cast in racial medical terms: he

thought that "our vulnerable race"—the "Teutonic race"—could not "racially" acclimatize in tropical countries (1885:237, 1887:297; Vasold 1988: 362–63). And as an anthropologist, Virchow quickly appreciated the opportunities that colonialism provided for the collection of anthropological data. The ambiguity of his position is evident in remarks he made to the annual meeting of the German anthropological society the year East Africa officially became a German colony:

> Now that we have become a nation of navigators and our imperial colonies have very quickly increased, we are prompted to take care of our new fellow countrymen, to establish spiritual relationship with them and to learn to value them, at least as far as their heads and brains are concerned. As we can obtain very few skulls, we cannot saw in pieces all those we receive. Thanks to the precious help of the government and of some travellers, I have been able to obtain until now some dozen skulls from our Eastern and Western African colonies. . . . Dr. Stuhlmann investigated on a spot where a fight took place between two tribes. One of his assistants collected a certain number of heads on the scene, packed them in a bag and had them carried on the back of a boy to Zanzibar. As one could expect, they banged and bumped against each other during the trip, and their condition, when they arrived in Berlin, left a lot to be desired. Such are the conditions with which one has to reckon. (Virchow 1891:122)

This combination of generous humanitarian feeling and callous scientific utilitarianism was quite typical of the time. A similar tension is manifest in the more strictly scientific writings of German physical anthropologists about non-European peoples.

The harsh verdicts of slightly earlier times regarding Negroes, Asians, and Australian Aborigines in fact tended to disappear in German anthropological literature of the turn of the century. Assertions like the Austrian Friedrich Müller's, in his *Allgemeine Ethnographie*, that "[T]he Negro can be trained [like an animal], but it is exceptionally rare that he can be really educated" (1873: 155), are atypical of German anthropologists of the 1890–1914 period. When such animalizing views were expressed in German anthropological publications, the authors, characteristically, were not Germans, and very often Anglo-Saxon. German anthropologists of course shared the general European feeling of cultural superiority, but, as humanitarian monogenists, they expressed it in a softened manner: "these so-called 'savages'" were "perhaps, in many aspects, children—but they are men like us, spirit of our spirit" (Ranke, in *CoB* 1906: 107). In general, German physical anthropologists sought to protect the "lower races" from such "animalization," regarding it as the "speculation" of "ape-fanatics." Savages—"our human fellows of faraway countries"—should not be degraded to the status of "speculation objects" (Ranke, in *CoB* 1898: 8); the "missing link" of the "ape theory" was still missing, and the theory itself remained a "pure speculation" (Virchow 1876:172).

As these references suggest, what was at issue scientifically, besides monoge-

nism, was the status of Darwinian evolutionary theory. In the 1860s, Darwinians were eagerly looking for "traces of our ape ancestors" in present populations, for "links" between man and anthropoid apes, and very frequently Negroes, Veddas, and Australian Aborigines were depicted as such. For Carl Vogt, most of the characters of the Negro reminded us "irresistibly of the ape." For Ludwig Büchner, the "Ethiopian race" connected man "by a number of the most striking analogies with the animal world": his "long arms," "disgusting odor," and "shrieking voice" all linked him "to the ape" (in Hunt 1863: 46, 49). According to Ernst Haeckel, Negroes used their feet as hands just like the "four-handed" monkeys (1889:684), and the "lowest races," such as Veddas and Australians, were "psychologically nearer to the mammals (apes, dogs) than to the highly civilized Europeans" (1904:430; Gasman 1971:40). Even Schaffhausen, despite his "moral" monogenism, suggested that "savages" did not stand up like civilized people did, but were a little bent over like monkeys, using their feet for grasping in a manner similar to their ape-like ancestors (1890:123).

In general, however, the positivistic non-Darwinian monogenism which prevailed from 1870 to 1895 in institutional physical anthropology was sceptical of such views. Büchner, a physiologist turned philosopher, and Haeckel, a zoologist, were marginal to the German community of physical anthropologists; Vogt, exiled in Switzerland, could not hold a leading position in the German anthropological society, though he had helped to found it; Schaffhausen's Darwinism was quite atypical. For positivistic medical academics like Virchow, such animalizing statements were based methodologically on purely "philosophical speculations" about human origins (Virchow 1879:191). Their opponents' scientific vision was distorted by "ape-spectacles"—as in the case of pathological human microcephaly, which Vogt had wrongly interpreted as "ape atavism" (Vogt 1866; Virchow, in *VhB* 1895:349–50). In reaction, they insisted upon the human character of the "lower races." From a purely anatomical viewpoint, Virchow felt that the skulls of Negroes did not have a "low simian form"; and if Australians seemed to show a morphological relationship to apes, it was not so great that "the Australians are closer to the ape than to us. They will ever remain men in our sense" (1876:172). Similarly for the tribes of Tierra del Fuego: "that they are savages in other respects, or, if some prefer, barbarians, should not prevent us from admitting their purely human constitution" (Virchow 1887:291–92).

For much of the period, monogenist German physical anthropologists could also rely on ethnology in their resistance to the dehumanization of savages. Adolf Bastian, in particular—"the founder and main pillar of German scientific ethnology"—engaged in a "thirty years war" for "the equality and human dignity of all cultures, even for "the despised and neglected 'savages' one thought could be considered as half-animals" (*CoB* 1896:91). More detailed

ethnographic studies, and the increasing use of ethnographic photography, also led some physical anthropologists to question "what was repeated again and again in the handbooks" (Kollman 1900a:76–77, 1900b). During this period one can in fact observe within anthropological literature a semantic evolution in the designation of "exotic" people. While the term "savage" continued to be used as an adjective—as in "savage tribes"—when used as a substantive it was placed in quotation marks or preceded by the qualifier "so-called" (Virchow, in *VhB* 1892:837; Ranke, in *CoB* 1891:33). And with the discovery of the Benin civilization and its beautiful bronzes in Black Africa in the late 1890s, Luschan suggested that African Negroes could no longer be thought of as "savages" or "half-apes." On the contrary, savages had very complex cultures, very different from each other (Luschan 1902:169, 1910:121; cf. Malgorzata 1990:15–16). Indeed, with growing ideological discontent about the effects of industrialization and urbanization, there was a tendency to return to romantic idealizations of the more "authentic," "natural," and "healthy" *Naturmensch* as opposed to a *Kulturmensch* threatened by "degeneration" with increasing civilization. Thus Ranke saw "sexual immorality" not as a "general infantile disease of humankind, but a product of increasing culture" (*CoB* 1893:83–84), and Rudolf Martin, after a journey to Malaysia, spoke of its "innocent" inhabitants as an "ideal for us" (1900:20).

But despite this softening of judgment, and despite the humanitarian liberalism, monogenism, and anti-Darwinism of the German anthropological community, most anthropologists continued, without any sense of contradiction, to hold a hierarchical evolutionary view of races and cultures. Accepting the generalized cultural progressivism of their day, they assumed that there was an evolution from savagery to full humanity—an evolution reflected in the traditional German dichotomy between *Naturvölker* and *Kulturvölker* ("nature peoples" and "culture peoples"). *Naturvölker* were people who were "poor in culture" or even entirely "without culture" (Luschan 1911b:66; Wohltmann 1891:30; Melk-Koch 1989:7). According to the liberal ethnologist Rudolf Steinmetz, who sharply criticized Teutonic race zealots at the turn of the century, ethnology as a discipline included "all phenomenon of the life of people without culture" (*culturlos*)—which was also Bastian's definition of the scope of ethnology (Steinmetz 1903:139).

Within this progressive linear framework—and despite the prevailing anti-Darwinist monogenism—cultural hierarchy was often assumed to have physiological and racial correlates. Thus Virchow, in a study of the skulls of "inferior human races," argued that brow ridges, though generally missing among races who were "the carriers of the highest cultures," were frequent among Australians, "who, objectively, have remained at the lowest level of culture," and who, even "after they came into contact with the Whites have not shown the slightest tendency for a higher form of civilization" (1880:16–26). Simi-

larly, Virchow concluded (after having measured three skulls and comparing these to the results of other anthropologists) that the Veddas of Ceylon showed the "most striking contrast to the brain proportions of civilized races": "If we add to this the apparent very low ability of Veddas for mental development, the almost complete lack of any ideal orientation of thought, the incapacity to count and still less to make calculation, . . . then the question arises whether we are not dealing with microcephaly in the pathological sense of the word" (1881:131). So also, in the case of Ranke: despite his attempt to maintain the "lowest races" within the sphere of humanity, in this generalized evolutionary frame there was no absolute breach between anthropoid apes and man but rather a gradual progress: "the more the brain develops (in respect to the rest of the skull), the more the form becomes relatively human" (Ranke 1891:117–18). The generalized progressivist and evolutionary thinking shared by both Darwinians and "transformist" monogenists made it difficult, to deny some linkage between "low human evolutionary stage" and "apes." Somewhat reluctantly, Virchow admitted that the orbital arch of the Australians could be considered as a "pithecoid" or "simian" character, placing them (on a purely morphological level) "between orang-outang, and gibbon" (1880:25, 1896a: 9–11, 1896b:158). Ranke, who had long thought that Darwinian "ape-theories" had nothing to do with positive science, argued in the 1890s, on the basis of relative proportions of facial and cranial portions of the skull, that Australians and Papuans constituted the "most extreme form of the human skull" in the series from human to animal morphologies (1897:140–44).

What was problematic was the reasons for such differences, and whether the gap between lower and higher races was unbridgeable. An old but still current scientific question in the beginning of the 1890s was whether the "lowest savages" were a "primitive race in its original low level of evolution" or whether they represented the "degenerated remains of a more evolved population" (Virchow, in *ZfE* 1892:252; cf. Virchow 1881). In contrast to Darwinians, Virchow tended to attribute characteristics like microcephaly to pathological "degeneration," and optimistically to assume that it might be reversed (1892: 24, 32–33). Ever cautious, and inclined to express himself negatively rather than positively, he thought that no one had yet proven scientifically that blacks were "incapable of culture"—the more so since it had taken a very long time for Europeans to rise to civilization from a similarly low cultural state (1876:172–74, 1892:24–25).

For the most part, however, the implicit hierarchy was simply taken for granted by German anthropologists, whether or not they were Darwinian. And generally it was always the same peoples who occupied the bottom rungs of the ladder: the aborigines of Australia and Melanesia, and the Veddas of South India (Virchow 1892:23). African Negroes, in the German liberal view, were big children with all the innocent qualities and shortcomings of their age. They could understand practical things but could not grasp abstract ideas;

easily excitable, and liable to commit atrocities when "enraged," they required strong control (Luschan 1906:894).

German physical anthropologists were, however, generally too cautious to display their hierarchical assumptions in any fixed schemes or visual representations such as Haeckel's phylogenetic trees. And because these assumptions were rarely clearly defined, they remained open to reshaping. More important than hierarchy was the commitment to empirical method, and sometimes the purely craniometrical point of view could in fact contradict European ethnocentrism. Thus, after studying some skulls of Masai and other African tribes from a comparative anatomical viewpoint, Virchow remarked: "the concept of inferiority cannot be as easily applied to the factual circumstances as the theory suggests" (*VhB* 1893:495). Some German anthropologists were quite willing to have European races share first place in mankind's hierarchy, or even to give it to another race. Thus Ranke noted of Mongol skulls that they were "not only near the best European skulls but even often exceed them" (1897: 140). Similarly, in a speech on "culture and the brain" before the German anthropological society, Buschan argued that Chinese brain capacity exceeded that of Germans—explaining the difference in neo-Lamarckian terms as the result of a higher level of education (1904:130).

In the middle 1890s, after three decades of "eclipse" in German physical anthropology, the Darwinian perspective was strongly reasserted, and the fundamental question of the "hierarchy of races" and "existence of superior and inferior races" acquired again a central position in anthropology (Bartels 1904a:139; Stratz 1904b:193–94). Introducing the first number of his *Zeitschrift für Morphologie und Anthropologie*, Gustav Schwalbe, one of the main representatives of the second generation of this Haeckelo-Darwinian stream, insisted that the hierarchy of races was one of the crucial questions of evolutionist anthropology (1899:6).

For this new generation of Darwinists, the static and sterile "old craniometry" had to be replaced by a dynamic biological history of mankind, with human races organized in a genealogical tree, and traces of human ancestors sought among "living fossils" today (Alsberg 1906; Sarasin 1907:237–43; Luschan 1911:16)—a development signaled by the increasing use of the term "primitive." Such evolutionary thinking made it difficult even for those who fought against Aryan and Teutonic racism to escape a hierarchical point of view. Commenting on the First Universal Races Congress held in London in 1911, the same Kollmann who had defended the humanity of the Australian Aborigines now found the "equality" of colored races "incompatible" with the results of science. Reflecting the same widely prevalent view, even Franz Boas acknowledged, on the basis of the "correlation of anatomical structure and physiological function," that it would be "erroneous to assume that there are no differences in mental makeup of the Negro race and of other races" (1911: 272, 1909:328–29). And for those embracing the new Darwinian approach

in German anthropology, the implications of racial evolutionary hierarchies were even more radical: the replacement of the previous humanitarian ethics by a biological and selectionist materialism more concerned with the inequalities of evolution than the universal brotherhood or spiritual unity of humankind.

Just as the progressive "anti-racism" of German physical anthropology was increasingly compromised by its attitude toward colonialism in the 1890s and its rapproachment with Darwinian evolutionism, so did the liberal nationalism of the German anthropological community change character toward the end of the century. Like Virchow, most of the leading anthropologists of the 1865–95 period were liberal, individualistic, confident of "Progress" and of the emancipatory value of "Science" (Smith 1991). They were also, however, strongly patriotic nationalists. The huge anthropometric survey Virchow undertook after 1871 was presented as a national task, an "anthropology of the Nation" (in Weindling 1989:54). Although he was critical of Pan-Germanist archeologists who tended to annex the unknown prehistorical past to the German nation and relate the greatness of all ancient and modern European nations to the achievements of Teutonic tribes, Virchow nevertheless admired his Gothic ancestors: a "powerful" and "iron" people that "we certainly may claim as German" (*CoB* 1891:67–68, 77–78). Similarly, Ranke proposed to erect, beside the new national parliament building which symbolized the political unity of Germany, a national museum which would illustrate the "development of the Teutonic tribes, from their very beginning to their merging in the new German Reich, in order to instruct the public, to promote science and to strengthen the love for motherland" (*CoB* 1892:78).

For the most part, however, Teutonic nationalism was manifest in German prehistorical archeology and folklore (*Volkskunde*) rather than in physical anthropology (Virchow, in *CoB* 1897:67; Henning, in *CoB* 1900:95). A major result of the first extensive anthropometric surveys was the conclusion that physical races were not something "national" (Kollman 1891:43–44). Quite the contrary, the various types established by physical anthropology in all European countries cut across the "existing political and linguistic units" (Virchow 1877:2). Moreover, leading German anthropologists generally did not assume that certain of these European "types" were superior to others. When Quatrefages, after France's defeat of 1870, wrote a tract against the "Prussian race," expelling it from the original Teutonic (and "Aryan") populations, and concluding that German national unity was founded on an "anthropological mistake," Virchow answered that national unity had nothing to do with the results of anthropology:

> Should we ask everyone, now that we build our State, to which ethnic group he belongs? To which race he is related? No, M. de Quatrefages, we do not carry on

such politics. Modern Germany is no longer the land of the old Teutonic tribes. (1872:301–2, 317–18)

In his *Beiträge zur physischen Anthropologie der Deutschen*, Virchow saw the recurrent but fruitless attempts to find national "types" as the result of political considerations "foreign to science." In a period when each European nationality was striving to build its own state, politicians sought criteria of self-identification, and because language could change several times in the history of any one population, they were inclined to look for a "deeper, more natural, physical background." But "happily," science had not made itself subservient to these endeavours. On the contrary, the diversity of "types" in each country shattered all the dreams of a biological foundation to nations (1877:2).

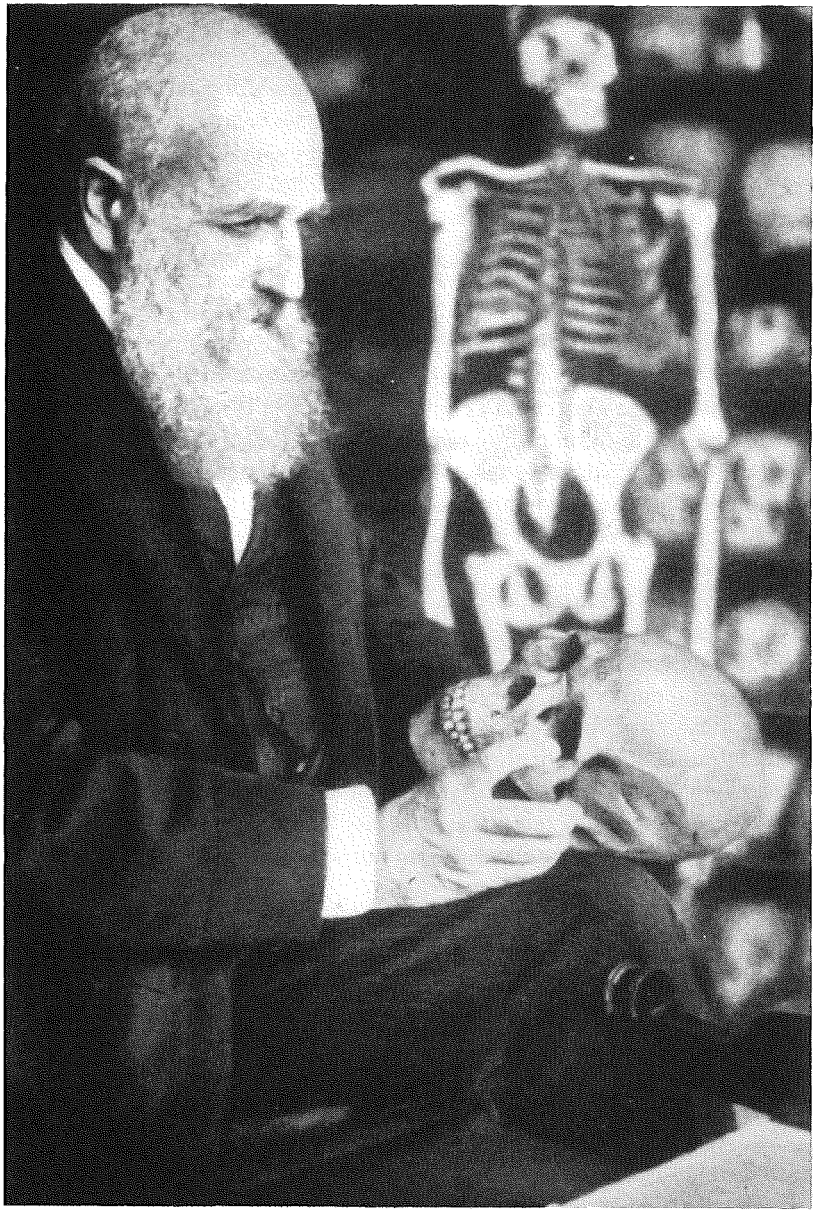
Rather than "scientizing" national unity, physical anthropology expressed its national pride through the achievements of German science: the preciseness of German anthropometry, the discoveries made by German paleoanthropologists and archeologists of human fossils and prehistoric sites, and the size and richness of ethnological collections in German museums. In his presidential address to the German anthropological society in 1891, Virchow was proud to announce the slight superiority that German archeology had gained over other European nations in only a few decades (*CoB* 1891:67–68). After a trip to France for the International Congress of Prehistorical Archeology and Anthropology he admitted that Parisian museum collections of skeletons were richer than those of Germany's decentralized university institutes, but insisted that German anthropologists, "working harder, with more patience and more method" on the material they possessed, had progressed a "little bit further" than their French counterparts (*CoB* 1900:72). Nevertheless, Virchow had close contact with liberal and radical French Republicans, and good relationships with French anthropologists like Léonce Manouvrier, one of the radical leaders of the Paris anthropological society (Andree 1976:II, 122–23; Jenssen & Ruprecht 1990.

In the 1880s, however, German nationalism took a new course, and there was a turn in academic circles away from the liberal ideals of the *Vormärz*. Students who were to provide the next generation of the German educated elite were the first to convert to the more radical and anti-Semitic nationalism. In 1880, a liberal professor prophesied: "If I am not mistaken, a national-chauvinist generation . . . is about to emerge" (in Jarausch 1982:271). This change of atmosphere among academics, combined with the spreading of anti-Semitism, was reflected in 1888 in Virchow's defeat by a national conservative in the election of rector of the University of Berlin. In 1893, Virchow's Liberal Party, which had previously split into two wings, disappeared from the political scene. Faced with a Marxist Social Democratic Party which had become the country's largest political force in 1890, German academics championed the

conservative alternatives of "State Socialism" or "organic nationalism." In the 1890s, German nationalism became increasingly imperialistic, militaristic, pessimistic, and biologically oriented. Germany was perceived as losing ground in the "struggle for life" of the world's imperialistic nations. With a declining birth rate, the new industrial Germany felt threatened by its Slavic neighbors and minorities in Eastern territories; now an importer rather than an exporter of population, it accommodated about two million immigrant workers in 1906. Eastern European Jews fleeing discrimination and pogroms poured into German towns and universities, heightening the fear of "national disintegration" (Jarausch 1982:211; Kampe 1988:54–107).

In this context, the nationalism of German anthropologists began to change its character. By the 1890s, the founding liberal generation was already in its seventies, and most of them were dead by the turn of the century (Andree 1969:79, 85, 97–98). While the survivors maintained their leadership and political control over science until after 1900, they were soon to be replaced by a new generation, less democratic and more Darwinian, which was to control German anthropological institutions and research for the next several decades. The contrast may be illustrated by comparing the two successive "ideological guarantors" of the discipline at the turn of the century: Rudolf Virchow and Felix von Luschan, who as holder of the Berlin chair was to be the leader of institutionalized physical anthropology after Virchow's death. Both men were progressives, but their liberalism was of a different blend, in each case symptomatic of its time. Virchow—a militant pacifist whom French newspapers called the "peace Apostle"—had opposed Bismarck's colonialism and military budgets, viewing warfare as an evil that would return civilization to barbarism, and condemning social Darwinian justifications of war as the mouthings of "people poor in spirit" (Jenssen & Ruprecht 1990). By contrast, Luschan was a "liberal imperialist" who took for granted the existence of the German overseas empire, and the reality, necessity, and virtue of imperialist competition.

As far as dark-skinned races of the colonial world were concerned, Luschan's position was in some respects similar to Virchow's. On the one hand, he castigated European colonists who treated them brutally, insisting on their common humanity: "[T]he more we now learn to know those 'savages' [*Naturvölker*], the more we realize there is never a border that sharply and surely differentiates us from [them]" (LuP: lecture "Allg. Phys. Anthrop."; 1902: 169). On the other hand, like some other anthropologists of his generation, Luschan had close connections to colonial institutions. In 1896 he contributed to the organization of the first German exhibition promoting German colonialism (Weindling 1989:54; Smith 1991:162–73; LuP: Deutsche Kolonial-Austellung), and he saw anthropology as a potential contributor to successful colonial policy (Luschan 1902:171, 1906:892–94).



Felix von Luschan, Virchow's spiritual successor, and holder of the Berlin Chair after 1900, in the period of his turn toward eugenics, imperialism, and colonialism. (Courtesy of the Institut für Geschichte der Medizin der Frei Universität, Berlin.)

Luschan was particularly impressed by the colonial policy of Great Britain, which he held up as a model. Invited in 1905 to attend the British Association for the Advancement of Science meetings in South Africa, he commented on the recent transformation and modernization of the country: "before, bullock carriages, rebellious porters, insubordinate tribal chiefs; now, a dense railway network with luxurious express trains and perfect sleeping and restaurant wagons; then, shy and often hostile natives; today, obliging and communicative [ones]." The native African was "good and natural," but had an "essentially childish psyche"; brutal treatment was not only inhumane, but bad colonial policy: "[T]o one who has studied him the primitive man is easy to guide and 'to twist round one's little finger' like a little child." To postpone the inevitable extinction of the Bushmen, Luschan advised the British to gather them in reservations, where they could be given sheep to kill from time to time, in order to save cattle-raising white farmers from their depredations. Such preservationism was already undertaken for plants and animals, and it ought to be possible also "for the last remnants of the Bushmen." Luschan advocated a similar reservation policy for the German colonies in Oceania, to preserve "real Polynesians" for future ethnological study (1906:892–95).

If Luschan was paternalistic to natives who were quiet and docile, he was actively fearful of their rising political consciousness, and of the "color threat" posed by Asian and African demography. He condemned the immigration of "profligate and perverse" Chinese workers to European colonies, and worried that the Black and "colored" population was increasing more rapidly than White colonists, and might threaten European colonial interests and power. Worried by signs of incipient Pan-Africanism, which was financially supported by American Negroes, he felt it was necessary "either to nip it in the bud or at least to direct it into channels which are not so hostile against our own interests" (1906:892–95).

When the First Universal Races Congress brought together anti-racist white and "colored" intellectuals from all over the world in London in 1911, Luschan was one of a number of German anthropologists who were involved. As honorary vice president, he gave a talk on the "anthropological view of race," in which he argued that each human type was different by virtue of its adaptation to its surroundings, but was not "necessarily inferior." Criticizing the equation of "savage" and "colored people," he suggested that the only "savages" in Africa were "certain white men with '*Tropenkoller*'" ("tropical madness") (1911:13–22).

On the other hand, Luschan—who was at this time president of the Berlin Gesellschaft für Rassenhygiene (Race Hygiene Society)—felt that the most serious problem was the "question of racial mixture." While a "certain admixture of blood" was "always a great advantage to a nation," he saw a great "danger to civilized nations" in the immigration of "coarser or less refined elements," including the "constant migration of Eastern Slavs" in Germany.

Quoting David Livingstone, Luschan felt that a mixture of Europeans with the "greater part of foreign races" was not desirable: "God created the white man and God created the black man, but the devil created the mulatto." Although neither eugenics nor "applied anthropology" yet offered reliable statistical information on "the moral and intellectual qualities of half-castes," it was nonetheless anthropologically better to have a "separate evolution" of both Whites and the "so-called colored races": "racial barriers will never cease to exist, and if ever they should show a tendency to disappear, it will certainly be better to preserve than to obliterate them" (1911:22–23). Although he fought against white American prejudices, and thought the cultural promotion of blacks was America's most important duty, he later advocated the construction of a "pure Negro Republic" in the South of the United States as the best way to avoid mixed marriages and "free the rest of the Union from undesirable elements" (in Rusch 1985:451).

After the Races Congress was over, Luschan (along with his "good friend" Boas) was one of three Western anthropologists who contributed to the published proceedings (Boas 1912). But in reporting to the German anthropological society, he dismissed the venture as bringing together a "large number of colored scholars from all over the world, theosophians, esperanto-people, idealists, peace-dreamers struggling to form an ill-assorted unified whole" (*CoB* 1911:179).[3]

Unlike Virchow, Luschan had no high opinion of "peace enthusiasts." Reacting to such endeavors as the International Peace Congress in the Hague in 1899, he spoke of "perpetual peace" as "an absurd utopia" and general disarmament as "the summit of mindlessness" (LuP:K15 "Heeres Ersatz," 23). A decade later, in a moment of naval competition between imperial Germany and imperial England, of international crisis between the Austrian and Russian Empires after the annexation of Bosnia, and between colonial France and colonial Germany over the control of Morocco, he suggested that "we will have always to be prepared for war and in the best case it will be only possible to postpone it. Perhaps the better armed we are, the longer we will be able to postpone it" (1909:205). In 1910, he warned of the danger of international disarmament and peace treaties for the "national existence" and security of Germany (1910:101). Granting that "the brotherhood of man" was a fine ideal, Luschan felt that "the struggle for life" was a "far better one"; national and racial antagonisms, in fact, kept mankind from becoming "like a herd of sheep" (1911:23).

Luschan's biologistic justification of war represented a "break with the

3. When German anthropologists received an invitation for a second World Race Congress in 1914, Fischer complained to Luschan that "the last time, by giving our signatures, we all fell into a trap": "now this swindle must stop," and "we should speak our opinion once and for all" (LuP: EF/FL 1/19/14).

humanitarian tradition" of German physical anthropology based on a secularization of Christianity (Sandmann 1990). Both Virchow and Luschan were scientistic, believing that "Science" was both the crux of "Progress" and a solid foundation for human politics (Mann 1969:5; Massin 1993b). But whereas Virchow rejected Darwinism, Luschan converted to this modern "philosophy of nature." Although he was not Pan-Germanist, he shared Pan-Germanists' fears of Slavic immigration and their concern for a better-armed Germany and a pro-birth eugenics policy in order to survive in the international "struggle for life." On a visit to Australia on the eve of war in 1914, he suggested that youth should be brought up imbued with the "ideal of a young and virile Nation, ready to conquer the Universe, fearing nothing and fearing inferior races less than the rest" (LuP: "Culture and Degeneration," 12).

However, despite his move toward Darwinian nationalism and eugenics, Luschan remained traditionally "liberal" in rejecting Nordicism, Aryanism, and anti-Semitism. Others of his own generation and, more important, of the generation born in the 1870s that was to come to the fore in the 1920s (including Eugen Fischer, Theodor Mollison, and Otto Reche) went a step beyond to embrace the Nordic doctrine of the anthroposociological school as a means of strengthening Germany in the "competition for world supremacy" (Buschan 1900:69–71).

The Crisis of Classical Physical Anthropology

If physical anthropology in Germany at the turn of the century became more susceptible to racial theorizing emanating from without, it was, paradoxically, because within the discipline itself, as elsewhere, the dominant mode of inquiry into racial differences seemed to many to have led into an epistemological, methodological, and conceptual blind alley (Mühlmann 1946:96–99; Stocking 1968:163–69). The intense activity of the anthropological societies, created for the most part in the midst of the positivistic period by anatomist physicians and centered basically on physical anthropology and descriptive anatomical techniques and measurement, had led to an inflation of the number and precision of anthropometric surveys. But the huge amount of work accumulated during the three decades from 1860 to 1890 did not result in any major scientific breakthrough. Anthropologists themselves, as well as scientists from other disciplines, started questioning the value of physical anthropology—which a St. Petersburg anatomist saw as no more than a mass of incongruous cranial measurements and the introduction of esoteric words of Greek origin (Lesshaft 1896). At a joint meeting of the German and Vienna anthropological societies in 1889, Virchow ended his presidential speech by pointing out that, two decades after its institutionalization, anthropology had in fact

retrogressed. Much of what was regarded as clear and definite when the Berlin society was founded in 1869 had been called into question (in Luschan 1912: 53). Addressing the Berlin society in 1896, Virchow noted that "for a long time, our field has not undergone so much inner controversy as in the past year. When we look to the coming period, it immediately appears we are in deeper confusion than we have been for a long time" (*CoB* 1896:76).

The discipline's claim to scientific status had been based largely on its veritable equation with anthropometry—the careful measurement of different human anatomical features, in substantial populations, for comparative study, in order more precisely to characterize human racial groups. Among these anatomical features, the most important was the human cranium, and from 1842, when the Swedish anatomist Anders Retzius used the ratio of width to length to distinguish dolichocephalic from brachycephalic heads and skulls, craniometry was the privileged mode of anthropometric inquiry. According to Virchow, the skull was critical because it enclosed "the most important organ of the body, the brain, and developed in a recognizable relationship to this organ (1892:3). Retzius's followers in France and Germany improved the metrical aspect and expanded the index categories, combining the cephalic index with the facial index and the facial angle to sort out different types of dolichocephals and brachycephals (Blanckaert 1989). Similarly, the number of facial index classes increased, from two with Virchow in the 1870s to nine with Kollmann in 1895 and twelve for Weissenberg in 1897 (Weissenberg 1897: 49–54).

The summit of craniometrical study was reached in 1890, when the German-speaking Hungarian anthropologist Aurel von Török, holder since 1881 of the first anthropological chair at the University of Budapest, made 5371 measurements on a single skull (Eickstedt 1940:178–79). But after having calculated 178 indices and more than 2500 angles, triangles, and polygons of determination, Török cast doubt on the whole venture: "to be honest and open," he could not say "how many of those measurements" might "prove useful" in determining "the general craniometric characters of the cranial form" (in *AA* 1891:284). Török was not alone in questioning his own craniometrical enterprise. By the end of the 1880s, craniometry was perceived by many physical anthropologists as in a state of "crisis," and they seriously wondered if they should "measure further or not" (Schmidt 1888; Hovorka 1898:289).

In this context, there were various attempts at reform. In 1892, the leading Italian anthropologist Giuseppi Sergi proposed the replacement of the cephalic index by a set of rather complicated categories based on morphological polygons, dividing long heads into "ellipsoid," "ovoid," or "pentagonal" and short heads into "sphenoid," "spheroid," or "platycephalic" (Sergi 1892). In 1909, Otto Reche, director of a section of the Hamburg Museum für

Völkerkunde (and later a zealous Nazi anthropologist), proposed to replace the cephalic index by the index of the length of the occiput, which he felt was what really distinguished the "dolichocephalic races." Adopting a new classification urged by Carl Toldt, the president of the Vienna anthropological society, he contrasted "plan-occipital" and "curvo-occipital" skulls (Reche 1911).

None of the reform attempts, however, were successful in reestablishing paradigmatic consensus. Many of the fundamental problems confronting physical anthropology were evident in the debate in the early 1890s between Török and Kollmann. Török's herculean quantitative treatment of a single skull, although initiated as an attempt to save the discipline, was contained in a 1500-page critique of the current status of craniometry, in which he called into question not only the value of the cephalic index, but also two of the major postulates of the venture: the French paleontologist Cuvier's "law of correlation," and the assumption that there was a homogeneous "pure type" corresponding to every "original race" (Török 1890, 1891).

Kollmann replied to Török's critique in a long speech at the national meeting of the German anthropological society in 1891. Dismissing "the jumble of Török's measurements" as "a dead end from which he himself could not find the way out" (1891:37, 1892b:3), Kollman maintained that the European population included two "completely different" and racially hereditary types of face—one long and narrow (*leptoprosop*), the other short and broad (*chamaeprosop*)—and that by virtue of the law of correlation, each type showed a harmony in every part, which was revealed by numerical ratios. To test the validity of this law, Török had instructed a collaborator to examine 150 skulls in his Budapest collection, only one of which showed the required correlations (Kollmann 1891:42–43). Kollmann defended his position by arguing the high degree of crossbreeding in Europe. The extensive pigmentation surveys initiated by Virchow in Central Europe in the 1870s and 1880s had proved that between a half and two-thirds of the people were "mixed-race." It was not surprising that this general race-crossing would be evident in a series of facial skulls. Even so, a correlation between facial index and cranial forms could still be found, revealing the presence of underlying "pure types." To find these, however, one should not work on random series as Török did; one must select "typical skulls" of the different established "races." To make sure of finding the correlated "type," one had to survey only "skulls of a unique type" (Kollmann 1892b:3–4).

In rejoinder, Török attacked the existence of Kollmann's five craniological European "races," declaring the dominant craniology "a tedious pastime" that achieved nothing but "self-deception" (1891:60–61). In response, Kollmann justified his racial taxonomy by appeal to authority: they matched, with different names, the historical races established by the great names of German and French anthropology. He then withdrew from the debate, and the *Correspon-*

denzblatt declared it closed, as far as its columns were concerned, on the grounds that it had taken a personal turn (*CoB* 1891:41, 61, 1892:2).

Kollmann left the debate without suffering too much damage, due both to his own authority and the fact that the Virchow-Ranke-Kollmann triumvirate which dominated the German anthropological society until 1900 was—as Luschan commented privately—a "Société d'admiration mutuelle" (LuP: K13). Török, however, kept up his attack on Kollmann and the dominant craniology in articles extending into the first decade of the twentieth century. According to Török, physical anthropology had reached a dead end because the whole craniometrical program was based on a wrong premise: the notion that the arithmetic mean would reveal the "type" of the "race." Within this paradigmatic frame, the more the measurements and indexes of a group of individuals neared the arithmetic mean value, the more those "racial types" were supposed to be "pure" and "free from crossbreeding"; the more individuals diverged from this ideal average, the more they were regarded as "crossbred." Török insisted that it was impossible for "a single mortal" to decide "merely by means of a series of craniological measurements, if he is dealing with 'racial purity' or 'blood crossing,'" and that "the use of the arithmetic mean does not make the thing the least bit more feasible." Craniometry was in fact "doomed to degenerate into the wizardry of a deceptive fortune-telling by skulls" because it rested on "a vicious circle." The whole approach, in fact, took for granted what it was designed to demonstrate: the existence of "pure races"—phenomena which "until now no one has succeeded in discovering . . . on the whole planet" (1901:402–3, 421).

> [O]ne briskly speaks of "pure" and "crossed" races as the most obvious things. . . . One chases headlong those "pure" races which, like will-o'-the-wisps, are the more elusive the more one tries to catch them. "Pure blood" races do not exist anywhere but in the fantasy of anthropologists—unfortunately too many of them. (422)

Török traced the flawed orientation of craniometry back to Retzius, who thought that each original race had a homogeneous headshape. In this typological perspective, the present huge variability of European populations was assumed to result from race crossings: "This idea was as such the fundamental hypothesis on which all the theory of dolichocephalic and brachycephalic races was based" (1906a:233–34). But logically, if the race-crossing hypothesis was correct, then the more one went back to remote times or the more one dealt with "primitive" isolated tribes protected from crossbreeding, the more one should find greater homogeneity of head shapes in comparison to present civilized nations in which a great deal of crossbreeding was historically documented. In fact, however, the prehistorical Swedish skulls studied by Gustav Retzius (son of Anders Retzius and founder of the Swedish anthropological

society), which supposedly represented the "purest" Teutonic stocks, were very heterogeneous. Similarly, primitive tribes "still virgin from any contact with civilization" showed a variety of head shapes as great as the "most civilized Europeans"; conversely, it was quite possible for the most crossbred race to show an apparent "type." Thus the race-crossing hypothesis had no empirical foundation (Török 1906a:233–34).

In Török's view, Anders Retzius and his first followers could be optimistic about the future of his approach, since at that time there was still little evidence. But the more anthropologists learned about the different races of the earth, the less possible it was to "confirm the existence of 'pure' races." Unfortunately for science, however, rather than subject the theory to a proper criticism, craniologists preferred to save the whole scientific edifice by calling upon "blood-crossing" (or, in Kollmann's terms, "penetration") as "a *deus ex-machina* [to] help us out of trouble at any moment." But the impossibility of discovering even the smallest exclusively dolicho- or brachycephalic race was not primarily due to "blood-crossing." The real cause was "purely and simply that Retzius's hypothesis, according to which each stock should show one and only well-defined craniological form" was "fully inconsistent with the regularity of the law of variation of cranial shapes" (1906a:235, 1906b:116).

Taken seriously, the double conclusion of Török's critical analysis signaled the end of nineteenth-century racial craniometry. On one hand, the cephalic index—the most frequently used craniological implement for anthropological surveys—was irrelevant for racial differentiation (1906a:215–30). On the other hand, on the basis of the most detailed craniometrical study ever attempted in the history of anthropometry, Török could not find a more significant and valuable craniometrical parameter for race classification. It seemed that craniometry, taken by itself, did not provide an adequate basis for racial taxonomy. What was noteworthy about Török's critique was that it was purely internal. It came from a renowned craniologist who did not call on any external argument, such as the possible influence of environment or other factors; and although it became a personal conflict, it did not seem motivated by any specific ideological orientation. Nor was it the only expression of disillusion with traditional physical anthropology.

The discipline's difficulties were, in fact, exacerbated by various efforts of reform. None of the methodologies intended to save it were generally accepted, but simply intensified the methodological debate. At the 1891 meeting of the German society, Ranke suggested that in spite of the number of talents who had dedicated themselves to this discipline, craniology had not progressed much since Virchow's groundbreaking work in the 1850s (Ranke 1891: 115)—or, as he remarked later, even since the time of Blumenbach. Ranke suggested that there were two insoluble problems: on the one hand, the head shapes of the whole of mankind were distributed in a continuous series "in

which the most extreme members were connected by gradual and uninterrupted transitions"; on the other, the great individual variability within each ethnic group surpassed the differences among the various "racial types" (1897: 139–46). And in the year before his death, Virchow himself doubted that any of the present participants in the field could expect to see its final consolidation within their lifetimes, wondering even if by "mere measurements, it would ever be possible to close the question" (1901b:137–39).

If members of the "old school" only gradually lost faith, many younger anthropologists were quickly convinced that craniology had reached a dead end. Paul Ehrenreich, a disciple of Virchow who later became docent of ethnology in Berlin, felt that craniology was "a complete fiasco"; despite the "endless series of numbers published each year on cranial and corporal measurements," agreement could not be reached "on any single question" (1897:5–9). In 1898, a since forgotten doctoral student urged anthropologists to "come to their senses" and recognize that "any attempt to classify mankind with the help of craniology is doomed to fail" (Wohlbold 1898:148–51). In 1904, Paul Bartels, an assistant at Berlin anatomical institute, remarked that craniometry had fallen into "disrepute" with representatives of other scientific disciplines (1904b:83). In 1911, the Polish anthropologist Stanislaw Poniatowski, working at the Zurich Institute of Rudolf Martin, suggested that given the number of errors produced by arbitrary classification of the cephalic index, "its full abolition would be a great step forward for anthropology" (1911:54).

It was not simply that the cephalic index seemed to many an arbitrary and unreliable classification; there were those in this period who argued that the phenomenon it alleged to index—headform— was itself unstable. The intergenerational plasticity of headform discovered by Franz Boas in 1908 in his study of immigrants to the United States was not an unprecedented result in the German anthropological tradition. Virchow, with whom Boas had studied, had previously insisted on "the possibility of change in cranial indices" (Ackerknecht 1953:236). And although, like Virchow, most turn-of-the-century German anthropologists on the practical level worked implicitly within the framework of static "types," many were, paradoxically, theoretically convinced of the plastic character of headforms and races. Both monogenists and polygenists shared the Lamarckian assumption that the level of culture could influence the volume of the brain and thus the size and shape of the skull. Schaffhausen, a Lamarckian Darwinist, had argued that "the head shape of the same ethnic group [*Volk*] does not remain unchanged, it is changeable"—if not with climate, then with civilization, which made skulls broader (1890:127–28)—and Klaatsch, Buschan, Ranke, and Alsberg all concurred (Buschan 1904: 127; Alsberg & Klaatsch, *CoB* 1911:101). Prior to 1900, there were not that many German advocates of the complete fixity of races since prehistoric times. Kollmann, the main proponent of the "persistency of races," noted that in

Germany his adversaries were much more numerous than his supporters (1898a:116–18). Responding to the charge that this belief contradicted his professed Darwinism, Kollmann adopted the mutation theory of De Vries, and spoke instead of the "temporary persistency of races" (1902). For the more consistent Darwinian Gustav Fritsch, constancy was the result of an interaction between the biological unit and its environment, and would continue only so long as the environment was stable (1898:161).

Virchow himself took an intermediate and sometimes contradictory position in this debate, depending on whether he opposed ultra-Lamarckian monogenists, Darwinists, Weismannists, or polygenists. In his 1887 speech on "Transformism" at the meeting of German naturalists and physicians, he declared that "ethnical dolichocephaly and brachycephaly are in a high degree hereditary": "[N]obody has ever proved that a dolichocephalic race could become brachycephalic" (1887:294–96). At the 1899 national meeting of anthropologists, he recognized that "his friend" Kollmann had partially proved the permanence of races since "diluvian times." But although he thought the advocates of permanence and of mutability both had good arguments, Virchow felt that both rested "on the ground of opinions" rather than "hard facts." Although his own research tended also to demonstrate their durability, he felt that an "absolute permanency of types" was "somewhat unlikely" (*CoB* 1899:81).

The failure of craniometry and the dispute over racial plasticity could not but have an inhibiting impact on what for decades had been the ultimate goal of physical anthropology: racial classification. Concluding as early as 1887 that "in the present state of our knowledge, all attempts to separate mankind in clear-cut groups (races or varieties) each having bodily properties not found in others, can have only a provisional value," Ranke himself refused to "increase the number of schematical classifications that cannot be precisely founded on a scientific level" (1887:II, 236). Otto Schoettensack, a prehistorian and paleoanthropologist who taught anthropology at the University of Heidelberg between 1904 and 1912, told students that "endeavours to classify mankind based on physical characteristics are countless," but could "not give very satisfying results" (SkP: "Volk II," 7). Paul Ehrenreich thought it was impossible to establish a purely somatic classification; although the three major "races" (white, black, yellow) were obvious, even these still lacked "scientific precision" (1897:5–39). The second generation of German Darwinian anthropologists at the turn of the century were particularly critical of all the previous attempts at racial classifications (Stratz 1904a:22). Gustav Fritsch, a comparative anatomist and physiologist at Berlin University, spoke in 1910 of the "total misery of our present racial classification." With the number of major races getting bigger and bigger and "our insight in the objective reality becoming smaller and smaller," Fritsch decided he would give up trying to establish a

new "closed" and static system (1910:580–82). In a lively debate at the Berlin Anthropological Society in 1910 following Fritsch's attempt at an "open" evolutionary racial classification, Luschan suggested that "in the [current] state of our research," racial classifications belonged "rather to the realm of faith than that of knowledge" (ZfE 1910:927).

In 1912, Erwin von Bälz, back from Japan where he was the private physician of the Emperor Mitsu Hito, cast doubt on the possibility of any racial classification at the annual meeting of the German anthropological society. He began by rejecting any linguistic-based classifications such as those used by the zoologist Haeckel or the ethnologists Friedrich Müller and Paul Ehrenreich: "race" had nothing to do with linguistic systems. But the choice of physical taxonomic criteria seemed to rest on the arbitrary decision of the researcher. The founders of anthropology thought the color of skin was the clearest scale to divide mankind, but some people of India were as dark as African Negroes, despite the fact that they differed in other significant physical respects. After this had come headform, but craniometry, too, had failed to provide a reliable classificatory criterion. The craniological schemes of Sergi were "procrustean beds" in which real skulls could not be placed without violence. Similarly, the artificial geometrical combinations of cephalic and facial indices Kollman used to define his races often united ill-assorted individuals any layman would recognize as different. So also with hair form; during his thirty years in Japan, Bälz had noticed a non-negligible rate of curly hair in a "race" which was supposed to possess only sleek hair. Although the evolutionary classifications of the Darwinians Fritsch and Stratz and the "inferential-geographical" classification of Deniker seemed more fruitful, Bälz thought that this "highly disputed question" might never be solved in a satisfying manner (1912:110–13)—a position shared by Ranke's successor as professor of anthropology at Munich, Ferdinand Birkner (1912:532).

The skepticism of racial classification was paralleled by a growing suspicion of the central concept of physical anthropology: the very idea of "race" itself. Paradoxically, with the assimilation of statistical methodology by anthropological schools of the second half of the nineteenth century, the reality of races as physical entities was seriously compromised; constructed as statistical types, races lacked any precise biological definition (Virchow 1887:279; Stocking 1968:57). "Race" was now a pure construction of the mind and could never be fully achieved in an individual. In Virchow's terms, it was the ideal picture of a characteristic local population drawn from a multiplicity of individual variations around a mean; individual variations were in turn circularly defined as those variations which remained "within the typical norm" (1892:4, 22).

For supporters of the "inductive method," this transformation of the basic concept of physical anthropology under the influence of statistics led to a growing "nominalism" (Mühlmann 1986:99), which was reflected in the

gradual substitution of the term "type" for that of "race." Virchow declared in 1896 that "the concept of race, which has always carried with it something undetermined, has recently become highly uncertain" (1896a:3). Luschan told students in his course on "general physical anthropology" at the University of Berlin that the word *race* was "just a word and a word behind which there is no clear concept" (LuP: K12, "Allg. Anthrop.," 1, 3). Török, concerned that people continued to speak lightheartedly of "races" despite the fact that the concept was scientifically dubious and the existence of human "so-called races" in a zoological sense had never been proved, urged that the word *race* be erased from the scientific vocabulary of physical anthropology (1890:14, 580, 1906b:117).

Even the concept "type" was called into question. After a few unfortunate experiences (e.g., "typical Teutonic skulls" which turned out to be "Slavic"), Virchow became very cautious (1900:110, 1901a:86). He thought it was impossible to fix the limits of variations within a definite stock and go back from those variations to the original specificity of the stock in a way that would enable anthropologists to define with certainty members of the different stocks: "the type was such a variable thing" (1901b:136; *CoB* 1896:80). The Russian anthropologist Koroptschewsky concluded that not only had "race" become "gradually a vague concept for a group without any scientific value," but that "type" was equally "very indefinite and nebulous" (*CoB* 1896:68).

With racial classification, "race," and "type" now seriously under question, physical anthropology was deprived of its central task, object, conceptual frame, and, consequently, the justification of its existence. The more purely positivistic anthropometry without "race" which was manifest at the end of the Wilhelmine period in Rudolf Martin's *Lehrbuch der Anthropologie* (1914) had lost much of its allure. Indeed, during the first decade of the twentieth century, physical anthropology seemed in danger of vanishing from the scientific field. If it did not do so, this was surely in large part because of its changing relation to Darwinism, to the new science of genetics, and to eugenics—as well as its eventual scientific adaptation to Germany's new political atmosphere.

The Eclipse and Revival of Darwinism in Physical Anthropology

Despite the positive reception of Darwinism elsewhere in German intellectual and scientific life (Montgomery 1974:89; Kelly 1981), it was a very marginal stream in institutional physical anthropology prior to 1895 (Friedenthal 1900: 495). One of the few important Darwinian anthropologists in Germany was

Schaffhausen in Bonn—who in 1880 was described by a conservative journal as the only speaker at the general meeting of anthropologists who was "in cahoots with the theory of descent of Darwin and Haeckel," and who in 1857 was the first to interpret the skeletal remains of Neanderthal as ancestral to modern man. Until his death in 1893, Schaffhausen engaged in a lonely "35-year war" against Welcker, Mayer, and particularly Virchow, who had diagnosed the Neanderthal and a few other prehistorical skulls as pathological (Zängl-Kumpf 1990:24, 152–206, 277–85). At a time when "diluvial" skulls were quite scarce, it was very difficult to prove their non-pathological character against the opposition of Germany's leading pathologist.

For decades, Virchow did everything possible to save the "firm land" of physical anthropology from the "overflow" of the "tidal wave" of Darwinism agitating academic biology and the "half-educated" German public (*CoB* 1891:78), using his institutional power to bar Darwinians from positions of influence. In his 1894 presidential address to the German anthropological society, Virchow argued that the question of evolution in general did not concern anthropologists, and that the problem of human origins had been treated in an essentially speculative manner: "in this way, some people arrived at the Ape-theory; but it would have been just as possible to arrive at another theromorphic theory, for example, an Elephant-theory or a Sheep-theory." When no ape was discovered as human ancestor, the upholders of the "Ape-theory" had turned to "half-apes," anticipating that future geological discoveries would justify their speculation. Opposing "cool-headed anthropologists to Darwinists," Virchow insisted that anthropology could not allow such a methodology and remain scientific (*CoB* 1894:83–86). As Ranke suggested before the same audience, Darwinism was a "philosophy" rather than a science because it rested on the "deductive method," which did not want so much to "learn from nature as to teach nature." Thanks to "our master Virchow," that approach had for several decades had no footing in German physical anthropology (*CoB* 1894:177).

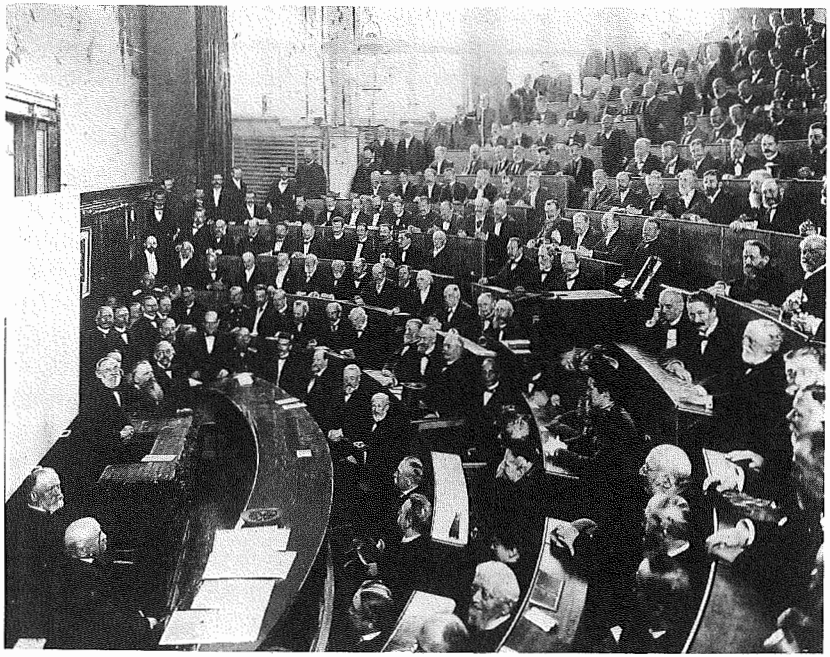
As Kollmann noted in 1905, the "eclipse of Darwinism" in German physical anthropology had been the result of two related factors: the critical reaction of Virchow, the most powerful figure in German anthropology, and the lack of sufficient evidence (1905:9). A third, more political background factor was the association of Darwinism, in the minds of both liberal and conservative anthropologists, with subversive ideas of radical materialist "philosophers" and socialist "terrorists" threatening the social order (Kelly 1981:55–74). However, when a series of new skulls were discovered in the last decade of the nineteenth and the first decade of the twentieth century, Virchow's position became difficult to maintain. In Europe, these included those of Spy in Belgium (1886), Krapina in Croatia (1899), Heidelberg in Germany (1907), and

Le Moustier (1908) and Combe Lachapelle (1909) in France. Even more important, however, was the discovery in Java in 1891 of *Pithecanthropus* by the Dutch anatomist Eugene Dubois (Theunissen 1989).

Initially, the reaction of German anthropologists to Dubois' discovery was quite cool. Many of them thought it was simply a reopening of the "Microcephal battle" they had won against Vogt and the first generation of Darwinists (*CoB* 1897:85). When Dubois' work was discussed at the Berlin anthropological society in 1895, Wilhelm Krause suggested that the tooth and the skull belonged to a big ape and the femur was that of a pathologically deformed man. (*VhB* 1895:78–80). Luschan, Waldeyer, and Virchow were also dubious, the latter speaking of Dubois' interpretation as "fantasy going far beyond all facts" (*VhB* 1895:81–87, 435–40). At the 1896 national assembly Virchow refused to recognize *Pithecanthropus* as a transition form, arguing that it was a now extinct giant gibbon (*CoB* 1896:81–83); and Ranke, who was frequently Virchow's parrot, saw the transformist interpretation of *Pithecanthropus* as evidence of the continuity of the romantic *Naturphilosophie* "under the leadership of Darwinism" (*CoB* 1896:25).

However, when leading anatomists, paleontologists, and zoologists in England, America, and France sided with Dubois, the positivistic anti-Darwinian fortress built by Virchow, Ranke, and Waldeyer began to crack after 1895. More and more voices started challenging the official rejection of Darwinism. At the 1899 national meeting, Hermann Klaatsch suggested that "in circles of specialists the conceptions of the theory of evolution, including man, have indisputably won the day." Unfortunately, "some leading anthropologists" had accepted the popular notion that this would be proven scientifically only when the "missing link" between ape and man was found. But the phylogenetic relationship of man to primates could also be demonstrated by embryology and comparative morphology. From this point of view, man in fact occupied an intermediary position between the anthropoids and the less specialized lower apes, which Klaatsch explained in terms of sexual and natural selection. In contrast to the anthropoid development of strong muscles and other bodily weapons for the struggle for life, man had instead developed intellectually, during a long period in which the pressure of natural selection diminished in favorable environments. This development could be reconstructed through comparative morphology, which Klaatsch felt would provide much more interesting results than the "much too one-sided anthropometry" which was now "fortunately overcome" (1899:154–57).

Responding to this pro-Darwinian attack on the "one-sided anthropometry" he had practiced for thirty years, Ranke noted the "deep contradiction" between Klaatsch's "painting rich in imagination" and "the conceptions and method of research generally defended in our society." In the absence of "hard facts," an appeal to zoology, paleontology, or anatomy was no more than mere



Rudolf Virchow (standing at the podium), at a gathering of German scientists on the occasion of his 80th birthday in October 1901. (Courtesy of the Bildarchiv preussischer Kulturbesitz, Berlin.)

"fantasy" (*CoB* 1899:157). Two years later, in 1901, Virchow offered the swansong of positivistic anti-Darwinism in his penultimate speech to the annual meetings of the German anthropological society. Responding to an essay by Gustav Schwalbe which disputed the pathological character of the Neanderthal skull and linked it to other recent discoveries (*CeB* 1901:339–41), Virchow insisted on what seemed to him pathological traits, including a chin that could still be found in patients of psychiatric hospitals. When Virchow (now over eighty) blundered by ascribing a fracture to the leg rather than to the arm, he overrode Klaatsch's immediate correction by insisting arrogantly on his authority as pathologist and denying the right of a mere anatomist to contest his judgment (1901a).

Defending the absent Schwalbe against "our honored old master" Virchow, Klaatsch argued that the similarities between the Neanderthal skull and the skulls of Spy greatly reduced the possibility that its unusual characteristics were pathological. The further argument that one or two specimens was not enough to reconstruct a race or a species ran counter to the ruling methodology in paleontology, where nobody would doubt the existence of Archeopteryx even though only two fossils had been found (*CoB* 1901:89–91).

Faced by a new generation of Darwinian anthropologists, Virchow was on the verge of losing his long battle against Darwinism in anthropology. With his death in 1902, the field was open for Klaatsch, Schwalbe, and their cohort, the more so since Virchow's close supporters, most of them medical anatomists, lacked the new generation's knowledge of paleontology. A year later Waldeyer evoked the "never too highly praised doctrine of Darwin" and his "immortal work" in his presidential address (*CoB* 1903:68); in 1909, in a speech for the fiftieth anniversary of the *Origin of Species*, he argued that the animal origin of man had been definitively demonstrated by the paleoanthropological studies of Klaatsch, Hauser, and Schoettensack (Waldeyer 1909). During the intervening decade, books, articles, reviews, and lectures on Darwinism sprang up like mushrooms after a sudden shower; in 1902, the 50,000 copies of Klaatsch's *Entstehung und Entwicklung des Menschengeschlechtes* were quickly sold out. Ranke, who had previously included such works only under zoology in his annual summaries of literature, began to include them under anthropology. Reviewing all lectures on anthropology and related disciplines in German universities in 1903, he found more devoted to Darwinism and other evolutionary tendencies than to pure physical anthropology. Anthropological studies from an evolutionary perspective were becoming so sophisticated that it was difficult simply to reject them; in 1908, Ranke even described the popular illustrated atlas *Vom Urtier zum Menschen* by the Darwinian ecologist Konrad Guenther as a "splendid work" (*CeB* 1909:131–32; *CoB* 1908:89). Schwalbe and Klaatsch, who had to keep a low profile during Virchow's reign, became two of the most important men of the German anthropological society, with Schwalbe responsible for directing planning for a new anthropological survey of the German Reich (Schwalbe 1903). Although there were numerous reactions against the specific Darwinian mechanism of random variation and selection, by 1908 German anthropology was celebrating the jubilee of Darwinism, and in 1910 Gustav Fritsch could claim (although with some exaggeration) that most of the more famous scientists had rallied to Darwin's evolutionary theory (*CoB* 1908:83; Fritsch 1910:581; cf. Bowler 1983, 1986).

The surrender of a large segment of German physical anthropology to "Darwinism" entailed the methodological defeat of the inductive positivism that had prevailed since the 1850s. Virchow's opposition to Darwinism did not reflect a lack of respect for Darwin as scientist; it reflected more specific issues of scientific methodology, and secondarily of politics. As a cellular pathologist, Virchow felt that an understanding of the evolution of races and species had to be based on serious research into our cellular mutability, rather than nebulous theories on "the ascent of Man." He was inclined to accept the transmission of secondary bodily modifications—the inheritance of acquired characters—and to explain change in terms of direct environmental influences

causing "pathological" (i.e., non-identical) cellular variation (Churchill 1976). He regarded the phylogenetic trees constructed by Darwinians like Haeckel as "deductive and speculative constructions" that went far beyond what was allowed by "positive facts" (*VhB* 1894:510). Honest anthropologists had to admit that on many points they "did not know" (*CoB* 1896:80–81).

It was commitment to this *docta ignorantis* that caused the anthropological establishment to resist Darwinian interpretations of paleoanthropological findings, as well as August Weismann's new theory of heredity of the germ plasm—though the latter was also resisted because most physical anthropologists before 1900 were neo-Lamarckians. In the face of the explosion of turn-of-the-century biological theories of evolution (De Vries, Semon, Eimer, etc.)—many of which were theoretically daring, given the scarcity of facts at their disposal (Bowler 1983, 1986)—German physical anthropology under Virchow's leadership was at once both empirically cautious and scientifically sterile. The same empiricism and methodological caution carried over also to issues of race. In a "positive" physical anthropology in which Neanderthal and Java Man were rejected as products of unproven theories, there was no place for an emotional metaphysics of race based primarily on theoretical constructions, to which the search for hard facts took second place.

However, the increasing accumulation of paleoanthropological evidence for the common origin of man and anthropoid apes, along with the indirect and progressive victory of Weismann's theory of heredity with the introduction of biometry, the emergence of Mendelian genetics in 1900, and Johannsen's concepts of "genotype" and "phenotype" in 1909, gave support to Haeckel's and Weismann's pleas for a hypothetical-deductive methodology (Kollmann 1886: 679; Haeckel, 1908; Churchill 1968:112, 1974:21, 27; Mayr 1985:323–24). The ultimate success of Darwinian paleoanthropology over Virchow's critical inductivism at the turn of the century opened the door to a more flexible attitude toward non-inductive approaches.

In the new epistemological context, any hypothesis was legitimate insofar as it could be fruitful and was not too conspicuously political. In anthropology, the shattering of the paradigm of the period 1860–95 brought to an end the consensual control of anthropology by a limited number of recognized authorities, and opened up a new phase of competing paradigms and heterogeneous approaches. In 1896, Virchow had warned his colleagues that he would not always be around to guard anthropology against "speculations" (*CoB* 1896: 84), and with his death no other anthropologist had the stature to fill the vacuum of authority he left. In such a dispersed environment of scientific crisis, any new theory had greater chances of gaining some acceptance from one or the other rival faction. There were too many doors, and too many of them were open, to keep the politically sensitive "science of race" under control.

The introduction of the Darwinian paradigm in physical anthropology itself

led to a new set of political attitudes and values. Darwinism was not only a scientific guideline providing a methodology and orientation of research but also a "new *Weltanschauung*," a new philosophy of life with political implications (Schwalbe 1910:465). It proposed a model of biological evolution—humans included—based on inequality and the hard mechanisms of "struggle for life" and "natural selection." Insisting on biological evolutionary inequality, Darwinian anthropologists made much harder judgments of "backward races" than monogenist humanitarians: "modern science cannot confirm the exaggerated humanitarianism which sees brothers and sisters in all the lower races" (Klaatsch, in Bowler 1896:138). Darwinian scientists worried about the disastrous consequences of impeding "natural selection" in modern human societies, and praised the "cleansing power" of "selection." A coherent political ethics based on Darwinian biology implied a "healthy selfishness" for "superior" types, and the prevention of mixed marriages, if not the elimination of "inferiors" (Fischer 1910:28, 1913:302–4). If the Darwinism of the 1860s and 1870s could combine with optimistic social reformism or liberal *laisser-faire*, neo-Darwinism was politically pessimistic, and required therapeutic interventionist state politics, in tune with the growing illiberalism of the German elite. Followed to their logical conclusions, these biological theories of society demanded a rationalization of human sexual reproduction which was possible only in a technocracy directed by biologists and physicians, in which the state enforced a collective biological therapy (Weingart 1987; Weiss 1986, 1987a).

Society, Politics, and the Study of Human Heredity

These neo-Darwinian understandings of society made up only one form of the biologism which characterized European human and medical sciences from 1860 to World War I—a period in which biological concepts, methodologies metaphors, "laws," and hereditarian attitudes had a powerful influence in the "softer" scientific disciplines (Mann 1969:17). In the age of positivism, modernity was synonymous with science, and the science most pregnant with meaning was biology. "Organicism," "social Darwinism," "social Lamarckism," "hereditarianism," "criminal anthropology," "anthroposociology," and eugenics were in fact the various and sometimes competing facets of the same general phenomenon in the "age of the natural sciences" (Mann 1973; Weindling 1981).

In Germany, this "biologism" had first been advocated by materialist radicals and liberals who opposed the conservative Christian cosmogony (Gregory 1977). Science was used as a political weapon to refute the biblical conceptions of the traditional society—and as a result biology was banned from

schools between 1882 and 1908 (Hanstein 1913:233–37). But it spread nevertheless through the university and through popularization, affecting various ideological camps from the most conservative imperialists to the most orthodox Marxists (Kelly 1981; Merten 1983:96–103). In the medical and human sciences, it influenced sociology, psychology, economics, historical sciences, criminology, pathology, and psychiatry (Mann 1969, 1973, 1983; Weindling 1989). The turn of the century was the high point of the imperium of biology, so much so that even those who had no reason to be delighted by this scientific imperialism acknowledged the fact. The theologian, church historian, and rector of Berlin University Adolf von Harnack deemed biology the central science, because it ranged from the "most elementary observations" of animal life right on through "the so-called human sciences" (in Hanstein 1913:233).

Within this pervasive biologism, quite divergent viewpoints could be accommodated. What might be called the "cerebralist" notion that there was a correlation between the size and shape of the brain on one hand and the level and form of mental activity on the other was shared by both neo-Lamarckian environmentalists and neo-Darwinian racists. In either case, large brains went with civilization and small brains with savagery (Nyström 1902:219; Woltmann 1903:295). The difference lay in the fact that neo-Lamarckians were optimistic about the beneficial influence of culture for the future development of small-brained peoples, while the neo-Darwinians thought they were barred from progress unless subjected to systematic selection. Even such critical observers as Virchow and Ranke could share some aspects of the cerebralist assumption; reminding his students to be wary of it in one chapter of his handbook, Ranke nevertheless remarked in the next on the influence of "culture and unculture" on the development of the skull (Ranke 1894:I, 557; II:224; Virchow 1892:23). Despite their encompassing biologism and their shared cerebralist assumptions, however, differences between neo-Lamarckians and neo-Darwinians were of considerable consequence, both scientifically and ideologically, when research and speculation about heredity became a central focus of biological thought in the last decade of the century. Prior to the 1890s, the inheritance of acquired characteristics was widely accepted in the scientific and medical communities, and anthropologists were no exception; it was a rare anthropologist who supported Weismann's new theory of the continuity of the germ plasm (*CeB* 1911:13). But when biometry and the rediscovery of Mendel's principles transformed the terms of the discussion of heredity after 1900, some anthropologists began to look to these new tendencies for a solution to the impasse in physical anthropology.

Among them was Franz Boas, who remained a member of the Berlin Anthropological Society, and who in 1899 hoped that Galtonian biometry would lead to a "definite solution of the problem of the effect of heredity and environment" (in Stocking 1968:173). In Germany, anthropological journals began publishing articles on biometry, which in 1909 Luschan believed might

rescue anthropometry from its dead end (1909:201, 108). However, the first biometric studies on the inheritance of the cephalic index led to divergent results and interpretations, and a number of scientists, including Boas and the eugenicists Wilhelm Weinberg and Heinrich Poll, concluded that biometry alone did not easily distinguish between similarities induced by heredity and by environment. In a speech to the Berlin anthropological society in June, 1912, Boas concluded that statistics by themselves could only point to a biological problem, which could only be solved by a biological methodology (1913a:4, 18, 22). In this context, a number of anthropologists turned to Mendelism and the genealogical study of alternating traits.

As early as 1905, Luschan had insisted on the necessity of establishing laws of heredity through race-crossing studies (Luschan 1905:4; Lehmann-Nitsche 1906:115). In 1911, Eugen Fischer, a disciple of Weismann at Freiburg, presented to the German anthropological society the first results of a study he had undertaken in 1908 of the "Rehoboth Bastards" in German Southwest Africa, in which he defended the study of human heredity as a solution to the difficulties facing physical anthropology. Although anthropologists referred constantly to "race" and "crossbreeding" to explain phenomena, their knowledge of the biological processes involved was "close to zero." Fischer argued that "anthropobiology" would provide a solid scientific foundation by focussing on the mechanisms of racial inheritance and diversity (1911, 1912, 1913:1).

The integration of Mendelism and biometry and the shift from physical to biological anthropology were encouraged by three factors, each closely related to political issues. First, the dispute over the plasticity of headform (reopened in 1911 by the results of Boas' study—results which no one could adequately explain) threatened the whole edifice of anthropometry: what was the value of a statistical treatment of "type" if little was known about the racial or environmental character of the features being measured? Although Fischer, like Luschan, accepted Boas' results, he believed that an answer to the relative influence of environment and heredity could only come from a comparative biometric analysis over several generations of families transferred into different environments, along with Mendelian studies of hybrids that would indicate which precise cranial features were hereditary (1914:26–29).

A second factor easing the conversion to a genetic paradigm was the national or social eugenic concerns about the scope of heredity in the transmission of pathological and racial "psychological characteristics." According to Luschan, there was "not a single social problem whose solution does not require the knowledge of the laws of heredity." Whether it was feebleminded-ness, the "born criminal," the "Jewish question," or the consequences of alcoholism and venereal disease for "the future of the race," the key to the issue was heredity. While the state could enforce vaccination because of its obvious utility, it could do nothing about other biomedical problems threatening the

nation's future, because medical scientists were only beginning to understand "the laws of heredity" (Luschan 1905:4, 1906, 1909:201–9).

A third burning political issue concerned the consequences of race mixture for fecundity, health, vitality, and the "mental and moral qualities" of a population (Luschan 1909, 1912:56; Fischer 1911, 1912; Retzenstein 1913). Fischer argued that the new "anthropo-biology" would include this "practical" aspect. Were racial hybrids as fecund as the pure types? What were the physical and psychological consequences of crossbreeding? Did one race dominate over the other? Were racial hybrids superior or inferior to the parents? Should Germany encourage or prohibit crossbreeding in the colonies, or at home between "Teutons and Semites?" Answers to these questions were of vital importance for the future of the nation, and would provide guide lines for the practical application of anthropology: race hygiene (1913:296–306).

It was to answer such questions that Fischer had studied the mixed Boer-Hottentot population of Rehoboth, examining a series of bodily characteristics (headform, stature, pigmentation, etc.) and physiological phenomena (tempo of growth, date of sexual maturity, fecundity). Although most characteristics were complexly determined, in general he felt that the results could be explained in Mendelian terms of dominant and recessive characters (1913:224, 306, 1914:13). Crossbreeding did not increase the number of "degenerate" individuals, nor did it lead to the establishment of a new "mixed" race intermediate between the parental groups. Although the occasional reappearance of apparently "pure" individuals was only the random recombination of separably heritable characteristics which gave the impression of a "pure type," the results seemed to demonstrate the hereditary persistence of various traits (223–27). Fischer's study was widely accepted in the German-speaking community as the first successful demonstration of Mendelian principles in human populations, and established his position as one of Germany's leading anthropologists—heir apparent to Felix von Luschan in the Berlin chair. To younger anthropologists, it provided a new basis for "the science of man"—which, according to the eugenicist Fritz Lenz, should henceforth be conceived as "the science of human genetic differences" (1913:363, 1914:523).

It was in this context, as well as that of the post-Virchowian loosening of inductive methodological vigilance, that there was a revival after 1900 of the "race" concept in German physical anthropology and human biology. In contrast to the fragile racial "types" obtained through extensive anthropometrical surveys and statistical reconstruction, the new "biological anthropology" sought to determine which bodily or physiological characteristics were inherited according to Mendelian laws and thereby offered support for "the racial nature of the morphologically distinguishable groups of the human kind" (Fischer 1913:2, 227). The first biometric and Mendelian studies on human heredity, carried on in Anglo-Saxon countries from 1901 to 1911 by Pearson's

school and by Davenport and Mendelians on the inheritance of single traits such as eye, hair, and skin pigmentation, were taken to prove the genetic nature of most "racial" traits (Fischer 1914:6). Given the apparent strict inheritance of many "racial" traits, it was assumed that "races" were something real. This conviction was reinforced by studies of tropical hygiene carried on since the 1880s, which indicated that the various European races had differential physiological resistances to tropical diseases (Retzenstein 1913:105–6). It seemed possible that races which could not be firmly distinguished by craniometry might be differentiated by physiology (Révész 1907). The discovery of the ABO blood system by Karl Landsteiner in 1900 also raised hopes for the physiological distinction of "races." A serological study of several different racial groups undertaken in Java by the physician Carl Bruck was greeted in the *Zeitschrift für Ethnologie* as providing, if confirmed, an "inestimable help for the systematization of human races, for which anthropometric differences have proved insufficient" (Bruck 1907; *ZfE* 1907:106–7).

The decline of positivistic empiricism following the surrender to Darwinism, along with the legitimacy given to the inheritance of racial traits by bioanthropological studies, as well as the need for a simple typology in regional and national surveys, led to a renewed interest in racial classifications, notably those of Joseph Deniker, the librarian of the Museum d'Histoire Naturelle in Paris, and of the American sociologist William Z. Ripley, both published in 1900. Drawing on the numerous existing surveys of millions of Europeans, Deniker and Ripley made density maps of the geographical distribution of physical traits in order to establish major "racial types"—six in the case of Deniker, three in the case of Ripley. Although in principle subject to many of the criticisms of previous typologies, these two classifications, combined and modified in various ways, gained a widespread acceptance among German-speaking anthropologists (e.g., *AA* 1902:170–88, 191–201, 1903:289, 1906: 42, 1909:255, 339, 1911:311–14)—even by those who were most critical of the legitimacy of racial classification (Luschan 1905:4; Martin 1914: 220–22).

There was, however, at the turn of the century, a new generation of "anti-racist" scholars (including Hertz, Nyström, Weissenberg, and Zollschan) who looked to neo-Lamarckism to support the plasticity of races. In their view, neo-Darwinism supported the theory of "permanent racial characteristics," preventing any racial progress through social change, and leading to "racial hatred" and "racial chauvinism" (Nyström 1902:642). Aside from its theoretical and methodological implications for craniometry, the debate about plasticity of headform took place in this broader political context. In the tradition of an earlier monogenist environmentalism, the old Ranke, in discussing "the race question," argued that the geographical distribution of head shapes in Bavaria was a result of the transformative influence of mountains and plains (1908).

Such studies of the transformation of head shapes (including that of Boas) were used by opponents of race theories to prove the plasticity of human races in one generation in respect to what had been considered the "safest basis for racial differentiation": the cephalic index (Alsberg 1912:176).

The Lamarckian view was pushed even further in the work of popular anti-racist writers like Friedrich Hertz, to whom neo-Lamarckism meant social progress and hope, while neo-Darwinism implied pessimism, conservatism, or the inhuman use of biological "selection" to improve human races (1915:12). Neo-Lamarckism transformed the "racial problem" into an "illusion" that could be dissolved through appropriate cultural and social integration. Hierarchical cultural differences were not denied, and could even be linked to a biological hierarchy, but they were ascribed to the influence of environment (Zollschan 1911:254–97).

For anti-racists as well as for neo-Darwinian anthropobiologists, the "political issue of the racial question" depended on the outcome of scientific debates over "the question of heredity" (Zollschan 1911:223, 235). According to the biologist Paul Kammerer (later a suicide after the discovery of the "midwife toad forgery"), his own neo-Lamarckian experiments opened "an entirely new path for the improvement of our race"—"a more beautiful and worthy method than that advanced by fanatic race zealots" (in Bowler 1983:94–95). Anti-racist writers were confident that Weismann's theory had received its "finishing stroke" thanks to the "modern" experiments of neo-Lamarckian researchers like Kammerer and Semon (Finot 1906:48; Hertz 1915:15–18).

Over the longer run, however, the alliance of anti-racism and neo-Lamarckism proved counterproductive. Battling on the same scientistic and biologistic field with their adversaries, neo-Lamarckian anti-racists bound the fate of their political fight to what was to be the losing scientific camp. The rapid growth of experimental Mendelian genetics after the turn of the century paved the way for the eventual scientific defeat of neo-Lamarckism. Although more than two hundred supportive experiments were published between 1906 and 1909 in Europe and America, neo-Lamarckians had great difficulty developing an alternative "inductive" experimental framework for the laboratory study of heredity, and neo-Lamarckism fell more and more outside the main stream of genetics—"not because it lacked proof, but because Mendelian genetics proved so much easier to elaborate into a conceptual foundation for the study of heredity" (Bowler 1983:60, 76). Although there were still neo-Lamarckian anthropologists (such as Franz Weidenreich) around in the Weimar period, the scandal of Paul Kammerer's experimental forgery in the 1920s accelerated the disrepute of neo-Lamarckism among German geneticists and professional anthropologists (Hirschmüller 1991). By that time, the third generation of Darwinian (actually neo-Darwinian and Mendelian) anthropologists, men like Fischer, Reche, and Lenz—who were also ideological

Nordicists—could claim they had won the day. The scientific defeat of their anti-racist opponents left them with the monopoly of the "scientific truth" in human biology. Having secured a solid scientific position, they could propagate in German biomedical sciences the theory of permanent morphological and psychological features distinguishing the various "races," the necessity of a "selective" racial hygiene, and the implicit supremacy of the "Nordic race" (Proctor 1988b; Massin 1993a).

"Modern Race Theories" and the Redefinition of Physical Anthropology

In sharp contrast to the racial liberalism and skepticism of Virchowian physical anthropology, the turn-of-the-century period witnessed a major efflorescence of racial thinking elsewhere in German intellectual life. Leafing through newspapers and reviews from 1870 to 1895, looking for articles with the word "race" in their titles, one finds no more than two each year. Suddenly, in 1896, the number mounts to five and keeps growing geometrically to a peak of fifty-one in 1904. From then on "race" ceased to be a marginal theme, and became a public and political affair, with an average of thirty such self-defining articles per year (Massin 1990:128–34). In the first decade of the twentieth century, "race" and "race theories" became a major topic; the liberal sociologist Oppenheimer complained that "racial doctrine" was by this time one of "the most influential theor[ies] of the whole social sciences" (in Woltmann 1906:673). In fact, however, these "modern race theories" (Hertz 1904) had received at first a very mixed reception in the anthropological community.

In the form of the "Aryan Question," racial thinking had for some time been an important factor in disciplines very close to physical anthropology, including linguistics, prehistory, and archeology—many of whose practitioners were in fact members of the omnibus "anthropological" societies of the period, which in the case of the Berlin and national societies encompassed "Anthropologie, Ethnologie, und Urgeschichte." The "Aryans" (like the "Semites") had been initially the product of comparative philology, where they were hypothesized as the speakers and bodily transmitters of the earliest form of the Indo-European language and its attendant culture. Well before the end of the century, however, both linguists and physical anthropologists had called into question the tendency, characteristic of earlier nineteenth-century "ethnology," to equate linguistic and somatic categories. By 1880, positivistic physical anthropology had largely emancipated itself from the "tyranny of linguistics" (Poliakov 1987:289–295). On the linguistic side, even Max Müller, the philologist largely responsible for popularizing the Aryan concept, had acknowledged that "one can no more speak of an Aryan skull than of a dolicho-

cephalic language"—though he continued to speak of an "Indo-European race" to which "all the greatest nations of the world belong" (in Römer 1989: 65, 125).

After 1880, the use of linguistic terms for racial classification by German physical anthropologists became less frequent. Anthropologists were mostly physicians or naturalists, and relied on craniology rather than linguistics; and every anthropometric survey showed that linguistic and national units did not coincide with any homogeneous physical types (Virchow 1886; Ammon 1890). However, the temptation to think in these terms was always present, and craniologists like the anatomist Kollmann had repeatedly to warn both the public and their colleagues: "Anthropology does not know any Germanic, Celtic, or Semitic race, it knows only nations bearing these names" (in Ehrenreich 1897:11). The emancipation from Aryan racial assumptions was imperfect even among the most cautious positivists. Although Virchow in the 1870s had rejected the possibility of identifying prehistorical Teutons, Celts, or Slavs from craniological material, he continued to refer to the "Semitic race," the "Teutonic race," the "Aryan race," and the "pure Aryan," including the Northern European populations under the stocks "which could be called Aryans in the purer sense" (1885:225–29, 1887:297). Even in 1891 he still thought it possible to determine from a skeleton whether an individual was related to the "Aryans or Indo-Europeans" (*CoB* 1891:79–80). And with the "complete fiasco" of craniology in the 1890s, some German scientists in fact sought to reintroduce linguistic classification in anthropology. The ethnologist Ehrenreich proposed replacing the taxonomy of the "white races" based on craniology and pigmentation by linguistic groups such as "Aryans" and "Semites" (1897:12, 29, 38); the Darwinian Gustav Fritsch, in his "open racial classification" of 1910, still used the linguistic concepts of "Indo-European" and "Aryan" (1910:583).

But even more than in physical anthropology, it was in prehistoric anthropology and archeology that specific linguistic groups and "races" were associated with prehistoric "cultural provinces," and in which attempts were made to establish the physical type and original home of the Aryans. Until 1880, most German philologists and archeologists (Virchow included) were convinced of the Asian origin of Indo-European cultures (Young 1968:26). But at the 1882 Frankfurt assembly of the German anthropological society, the controversial Pan-Germanist anthropologist Ludwig Wilser proposed that the original home of Germans and all their Indo-European "linguistic parents" was Scandinavia—unleashing thereby a "storm of protests" (Wilser 1900:146). Pursued by the Austrian prehistorian Karl Penka, the Scandinavian hypothesis reintroduced Gobineau's myth of the blond Aryan into serious academic German science (Penka 1883). Because of its political charge, the Scandinavian-Nordic race theory was a subject of continuing debates and intense research

by both defenders and opponents. Indeed, in the last decades of the century, the question of the original home of the Aryans became such a subject of controversy that William Ripley, surveying European racial thought, concluded that "no other scientific question, with the exception perhaps of the doctrine of evolution, was ever so bitterly discussed or so infernally confounded at the hands of chauvinistic or otherwise biassed writers" (1900:454).

At this time, many of the greatest Indo-European linguists and archeologists were German or Austrian, and investigations and theoretical confrontations had a vibrant patriotic resonance—archeology and prehistoric anthropology more so, perhaps, than the statistical craniometry of contemporary populations. In addition to the original Aryan homeland, they defined the "national past" in relation to a specific territory, documenting, for example, the age of Teutonic (as opposed to Slavic) settlement in the eastern borderlands (Andree 1976:I, 89). Until his death in 1902, Virchow, who was greatly interested in the "patriotic" archeology of Prussia, was able to use his institutional power to channel patriotic enthusiasm into a rigorous methodological framework (Andree 1976:I, 168, II:116–17), and to keep politically "dilettantish" archeology out of the main anthropological and prehistorical journals. By the turn of the century, however, leading German academic archeologists and linguists, despite being critical of any direct identification of race and language, often tended implicitly to accept some sort of relationship, and were in most cases very eulogistic of the "Aryan" conquerors. Although the linguist and archeologist Otto Schrader insisted in 1901 that "we must keep away from the concept 'Indo-European original stock' everything that refers to the concept of 'race' established by anthropologists" (in Römer 1989:65), in a more popular book on *Die Indogermanen* he presented these warrior "conquerors" as the "strong master *Völker* of Asia and Europe" (*CeB* 1912:88).

The discussion of Indo-European origins was complicated by the fact that the several disciplines involved—including linguistics, artifact archeology, and prehistoric physical anthropology—each thought the others not in a position to solve the question, and controversy within each discipline did not allow the other two to draw safely on its results. With the growing specialization, no scientist mastered them all, and each field jealously monopolized its right to speak in its own name and to judge the scientific competency of its own members. Prehistoric anthropologists venturing into linguistics or linguists into prehistory risked their reputations as serious scholars. Communication between the disciplines and clarification of the dispute was made difficult by the fact that linguists generally did not take part in the meetings of the German anthropological society and after 1892 had their own review, *Indogermanische Forschungen*, which was certainly as abstruse to anatomist prehistorians as the anthropometric tables were to Sanskritists. Similarly, archeologists and prehistorians after 1909 tended to publish in Gustav Kossina's *Mannus* or Carl Schuchhardt's *Praehistorische Zeitschrift*.

Within archeology, the political and scientific line separating more "moderate" academic archeologists from amateur Pan-Germanists was not clear-cut. Amateurs were sometimes embarrassing but essential allies, inasmuch as the nationalist halo they created around these disciplines directly benefitted their professionalization and institutionalization. Penka, a retired high school teacher who started publishing in the proceedings (*Mitteilungen*) of the Vienna anthropological society in the early 1890s, was seen by academic archeologists as an erudite but armchair archeologist, and Wilser as a bombastic and biased "dilettante" mixing science with "patriotic rhetoric" (Hoernes, in *CeB* 1910: 358–59). But their Scandinavian theory nevertheless became quite influential, as more and more German scientists began turning to Europe for the original migration site (*CoB* 1908:89; Kraitschek 1910).

A potentially even more chauvinistic hypothesis would have located the original home of the "Aryans" in Germany itself. Proposed by the linguist-philosopher Lazarus Geiger in 1871 (Römer 1989:70), it was taken up by the Pan-Germanist archeologist Gustav Kossina, who, by providing the discipline with the "settlement-archeological method," was to be the most influential Germanic archeologist of the period 1900 to 1930. In 1903, Kossina argued that the Teutons were "synonymous with the ancestral nation of the Indo-Europeans, whose original site coincides with that of the Teutons" (*CeB* 1903: 118). In 1912, when he was professor of Germanic prehistory at Berlin University and director of the Gesellschaft für deutsche Vorgeschichte, Kossina published a book arguing that archeology proved Germany was the motherland of all the stocks that emigrated to produce the great Indo-European civilizations since antiquity, and that the fall of the southern and eastern Indo-European civilizations resulted from the contamination of the "Indo-European noble blood of the ruling classes" (1912:vi). Similarly, Kossina's main rival, the classical prehistorian Carl Schuchhardt, ascribed the Egyptian and Chinese civilizations to European prehistorical influences (Römer 1989:78).

That, of course, was the kind of Gobinesque thinking promulgated by the "modern race theorists" who stood just beyond the borders of German physical anthropology in this period. Almost unread in Germany in the 1860s and 1870s, Gobineau began to emerge from oblivion around 1880 thanks to his encounter with the composer Richard Wagner, who was so taken by the *Essai* that he read it several times. Quickly seizing their master's new fad, the Wagnerian circle of Bayreuth in 1881 devoted three articles to Gobineau in their review *Bayreuther Blätter*, which then became the main tribune of Gobinism and "Teutonic Christianity" in Germany. Among the younger Wagnerians who met Gobineau before he died in 1882 was the philologist and historian Ludwig Schemann, who had given up an academic career to become librarian at the University of Göttingen (Nagel-Birlinger 1979:25). Politically, Schemann combined ultra-conservatism, monarchism, anti-liberalism, nationalism, and Pan-Germanism, and under Wagner's and other influences developed

his own Manichaean blend of anti-Semitism (1925:74). From 1889 on, he labored to spread the word of Gobineau in Germany. Having obtained the entirety of Gobineau's manuscripts, he published between 1898 and 1914 no less than twelve books by or about Gobineau, including the first German translation of the *Essai sur l'inégalité des races humaines* (1898–1901), a five-hundred-page analysis of Gobineau's reception in the world (1910), and a two-volume biography (1913–16).

When his first attempts to get a German translation of the *Essai* published were rejected on the ground that it was scientifically out-dated (Lémonon 1971:II, 245–47), Schemann in 1894 decided to found an organization to popularize Gobineau's work and secure funds for publication. The Gobineau Vereinigung reached its peak in 1914 with 360 members, including a high proportion of royal highnesses, aristocrats, influential political figures, and university professors (Lémonon 1971:II, 217–31). Through his connection with the president of the Pan-Germanist League, Schemann was able to get copies of the *Essai* distributed free to members, and from then on the League took the lead in the dissemination of Aryan racial theories.

Schemann, however, had only limited success in winning support from the organized anthropological community. Some archeological and philological societies joined (Lémonon 1971:II, 219), but no local anthropological society. The only leading member of the German anthropological society who enlisted in the Gobineau Vereinigung was the convinced Pan-Germanist archeologist Gustav Kossina, who in turn invited Schemann to join his prehistorical society, and organized a discussion of one of Schemann's publications at a meeting of the Berlin section in 1910 (SP: GK/LS 2/19/03, 3/9/03, 2/5/10). Although two Pan-Germanist anthropologists without professorial status, Otto Ammon and Ludwig Wilser, were also participants, the only established academic anthropologist who carried on a correspondence with Schemann was his Freiburg compatriot, Eugen Fischer, who in 1910 predicted that "racial thinking must and will win, even if not exactly in the Gobinian form." While caution "in front of the student youth" compelled Fischer to include "this great forerunner" among "race zealots," he nevertheless promulgated "the racial viewpoint" in his lecture courses (SP: EF/LS 1/16/10), and in a public lecture to an anthropological society spoke of Gobineau's having, "with premonition, sharply formulated and exposed this inequality of mental dispositions" (1910:18). Twenty-two years later, as director of Germany's most prestigious research institute for anthropology and human genetics, the Kaiser Wilhelm Institut für Anthropologie, Menschliche Erblehre und Eugenik, Fischer wrote Schemann that its foundation was "in part the accomplishment of the ideas you have supported for so many years" (SP: EF/LS 10/12/32). But if Fischer's role in the reorientation of German physical anthropology gave to his views, also, a pre-

monitory significance, the fact remains that German physical anthropology did not immediately leap to embrace Gobinism as such.

The opposition between "modern race theory" and established physical anthropology was evident in the work of Houston Stewart Chamberlain, English-born son-in-law of Wagner, whose bestselling *Die Grundlagen des neunzehnten Jahrhunderts* (1899) transformed the "racial question" into a major subject of conversation and debates in German salons and academic circles. Although influenced by the Darwinism of his former professor Karl Vogt, Chamberlain had little use for official anthropology:

> The more you try to find out with specialists, the less you can see clearly. First linguists coined the collective concept of Aryan. Then came anatomist anthropologists. Once the dubiousness of linguistic deductions was proved, one moved on to cranial measurements. Craniometry became a profession and brought a huge mass of interesting material to light, but now "somatical anthropology" seems threatened by the same fate which linguistics underwent. . . . One of Virchow's best students [Ehrenreich] has concluded that it is a sterile pretension to want to solve ethnographical problems by measuring skulls. (1899:268–69, 1913:360–62)

For Chamberlain, race was not "a primitive phenomenon" but a constructed myth, not a hypothetical original purity to which one should strive to return, but an ideal to be achieved by selection (1899:289, 343). The best approach was not through an "objective" criterion such as measurement, but rather by the subjective impression given by the total appearance. If the learned anthropologist, with all his compasses and complicated measurements, could not distinguish between a Jew and a non-Jew, a child would immediately recognize a "pure blood" Jew by running away and crying (1913:679–80).

Given Chamberlain's attitude, it was not likely that "learned anthropologists" would flock to his standard. Although the liberal Kollmann complained in 1908 that the "conceptions of Gobineau and Chamberlain were prevailing almost exclusively" (*PAR* 1907/8:76), in fact, the influence of these two major representatives of the "philosophy of race" on German anthropology was rather less than that of other contemporary currents, including "anthroposociology."

"Anthroposociology" was developed in France by the social Darwinist Georges Vacher de Lapouge in the late 1880s, and in the next decade received a degree of intellectual and institutional recognition within French physical anthropology and the several currents of French sociology (Nagel 1975; Clark 1984; Massin 1992). But in France this period of scientific integration was rather brief; in 1898, Durkheim banned the topic from his review, and the next year Léonce Manouvrier, one of the new leaders of the Société d'Anthropol-

ogie de Paris, published a critique of "The cephalic index and the pseudo-sociology" which definitively ousted Lapouge from French institutional anthropology (Clark 1984:144–45; Mucchielli 1994). From that time on, in France Lapouge was able to publish only in local scientific reviews, and, in Germany, only in Buschan's *Centralblatt* and in the *Politisch-Anthropologische Revue* of the German racialist Ludwig Woltmann.

In contrast to the short-lived success of anthroposociology in France, this new discipline achieved a more lasting integration into organized anthropology in Germany, where it was independently developed by Otto Ammon, a former newspaper editor who turned to archeology and anthropology in the early 1880s. Ammon was general-secretary of the anthropological section of the Anthropological and Archeological Association of Karlsruhe, and when the German anthropological society held its sixteenth congress there in 1885, Ranke entrusted him with the task of investigating the physical characteristics of his fellow countrymen of Baden. Ranke, Virchow, and Kollmann all helped to supervise Ammon's lengthy survey of over 30,000 conscripts, as well as 2200 pupils and their families, and in 1890 his results were first published in a scientific collection directed by Virchow (Lichtsinn 1987:8–10, 21–42). They indicated that the urban populations were more dolichocephalic than the rural, which Ammon interpreted in social selectionist rather than environmental terms as a reflection of the greater aptitude of narrowheads for success in urban life—a result which he later formalized as "Ammon's Law" (1892, 1900).

Although his work won Ammon a certain international recognition, and was taken as a model by a number of regional surveys, Virchow was from an early point critical, complaining to Ranke in 1886 about the unreliability of Ammon's craniometric measurements and his "arbitrary" and "amateur" interpretations (Andree 1976:I, 86, II:410–11). After Ammon was denied an additional promised subsidy for his work at the 1889 national congress because of financial difficulties in the German society, he withdrew in anger from national meetings and did not return for the next twenty years (LuP: OA/FL 5/20/11). When he began publishing his more explicitly Nordic and social Darwinist anthroposociological essays in the early 1890s (1893, 1894, 1895), Virchow in fact denied him access to the forum of the Berlin society (Andree 1976:I, 86), and his work began to be excluded from anthropological journals controlled by Virchow, Ranke, and Bastian. And when Ammon finally published the full report of his thirteen-year project in 1899, Ranke for two successive years failed to mention it in his annual summaries of scientific work (LuP: OA/FL 5/20/11). Over a slightly longer run, however, Ammon and anthroposociology had a quite different destiny in Germany than in France.

The younger generation of Darwinian physical anthropologists, whose liberalism was compromised by aims of national expansion, and who were already

committed to "selection" and "the struggle for life," responded much more favorably. For scientists seeking a new justification for a discipline in crisis, Darwinism provided a bridge toward what are retrospectively seen as "pseudo-scientific" social Darwinian doctrines, rehabilitating to some extent the previous theories of Haeckel, Woltmann, and Wilser, as well as those of Lapouge and Ammon. Felix von Luschan, in a journal Virchow did not control, praised Ammon's book on Baden as one of "the most significant enrichments of anthropological literature in the last ten years," and for showing the way in which "the anthropology of the future should progress" (1900). Georg Buschan published an equally eulogistic review in the *Centralblatt* he had founded in 1896, proclaiming it a "standard work" which presented substantial further evidence for Ammon's previous "theoretical opinions" (*CeB* 1900:18–23). Buschan in fact opened his review to Ammon, his "friend" Wilser, and even to Lapouge as authors and reviewers. Similarly, Schwalbe's *Zeitschrift für Morphologie und Anthropologie* invited Ammon to contribute (*ZMA* 1900:679–85, 1906:56–58) and published other articles on anthroposociology.

Schwalbe was the first important anthropologist to publically declare his sympathy to anthroposociology, at the thirty-fourth Congress of the German society in 1903—significantly, the year after Virchow's death. Adopting the three-race European typology of Lapouge, Sergi, and Ripley (Nordic, Alpine, Mediterranean), Schwalbe cited positively the surveys of Ammon, Lapouge, Collignon, and Livi, and accepted the basic postulates of anthroposociology:

> That a physical race is also equipped with specific psychological and behavioral characters appears more and more obvious to those who want to understand the historical process and not less to those who try to explain the causes of social stratification in one country. The various ways of thinking and behaving in politics and religion will be related to the various types of men, that is, to the various physical races. (1903:74)

Schwalbe was to pursue the issue in his presidential address on "the mission of anthroposociology" at the national congress in 1907 in Strasbourg. Indeed, this speech may be taken as the inflection point in the ideological reorientation of German anthropology from the liberalism of the second half of the nineteenth century to the strong racial biologism of the early 1930s (Massin 1993a). In it, Schwalbe characterized as "absolutely right" the "anthropological theory of history" of Gobineau, Chamberlain, Woltmann, Lapouge, and Ammon. Although he tried to reformulate their ideas in a more acceptable manner, he nevertheless conferred a scientific value on Aryanist, Teutonic, and Nordic race theories, some of which (like Chamberlain's) were notorious as well for their anti-Semitism. Schwalbe also accepted Lapouge's and Ammon's notions of European race psychology: "It is clear that the members of the Nordic race show another temperament, other moral conceptions, a

wholly different type of thinking, another way of seeing the world, than those of the Mediterranean race" (1907:67–68). At the end of the decade, Ammon's scientific exile was ended when Luschan, the new leader of institutional anthropology, personally invited him to take part to the 1911 meetings of the German society.

Ludwig Woltmann, the young Marxist revisionist doctor who converted to Darwinism and racial determinism and founded the *Politisch-Anthropologische Revue* in 1902, did not live long enough to win this recognition. Save for a few Darwinian anthropologists such as Gustav Fritsch, most of its contributors were either non-academic German anthropologists or foreigners. But when Woltmann died in an accident in 1907, several dozen European scholars, ranging from the Marxist revisionist Eduard Bernstein to the Teutonic evangelist Houston Stewart Chamberlain and the Zionist race theorist Leo Sofer, as well as a few anthropologists, contributed obituary comments (*PAR* 1907–8:68). Even Luschan, who had previously refused to be involved (LP: LW/FL 11/20/02), spoke of the "heavy loss for anthropology" (72–73). Moritz Alsberg, a Jewish eugenist anthropologist, thought Woltmann's great merit was to have linked sociology to biology and racial anthropology—a connection of "great practical significance" for state policies (67–68). This broad political spectrum of support for Woltmann's enterprise was possible because in this period many medical social reformers were abandoning pure economic determinism for a new blend of materialism combining biological and sociological influences (Weindling 1989).

After 1900, Nordic anthroposociological ideas began to spread to official anthropological literature. In an article published in the *Archiv für Anthropologie* in 1902, an author adopted the racial psychology of Lapouge and Ammon, contrasting the dominating and "warlike" Nordic race with the "industrious and docile" Alpine (*AA* 1902:174). Between 1900 and 1904, Carl von Ujvalvy, a Hungarian aristocrat convert to anthropology, published no less than six "anthropo-historical" studies in the same review. Despite the fact that he extolled the "Gobineau school" and proclaimed the "inequality of human races," the editors of the *Archiv* valued him as "an excellent contributor" (*AA* 1904:ii). More generally, anthropological surveys began adding appendices relating physical type to intellectual or professional aptitudes (*AA* 1902:195, 208–9, 1903:337–38).

Even more than anthroposociology, it was eugenics which in the long run was to have the greatest impact on German anthropology. Prior to World War I, the study of human heredity was spread among several disciplines, including genealogy, psychiatry, hygiene, pathology, various other medical branches, and demographical or medical statistics; it was first united under the aegis and through the "scientific program" of eugenics at the turn of the century. From the late 1880s, anthropologists had shown great interest in medical

pathology, including studies of the hereditary transmission of such anomalies as microcephaly, acromegaly, polydactyly, etc. (*CoB* 1890:101). At the Berlin society, Virchow and Ascher analyzed a family in which absence of teeth was linked to feeble-mindedness and this "sign of degeneration" was passed on through apparently healthy children (*VhB* 1898:114). In the late 1890s, genealogy, too, became a serious scientific study; in 1898, Ranke noted in his "scientific report of the year," that anthropology had been enriched by this new discipline tackling the most topical questions of the day (*CoB* 1898:83–84). In short, rather than being simply conquered by eugenics from the outside, physical anthropology was predisposed to eugenics by the growing internal interest in questions of heredity, and by the fact that most active physical anthropologists were trained in medicine, a field which early became impregnated by eugenics (Weindling 1989).

German eugenics emerged from the combination of two main factors: the (generally neo-Lamarckian) hereditarian conceptions of pathologies that prevailed in European medicine and psychiatry in the late nineteenth century, and the pessimistic view of the consequences of industrialization and urbanization, including the spreading of what were seen as hereditary diseases and the physiological "degeneration" of the whole population (Weiss 1987a:7–26; Weingart, Kroll, & Bayertz 1988:47–125; Weindling 1989:80–89). To these two elements, the two founders of German theoretical eugenics, the physicians Alfred Ploetz and Wilhelm Schallmayer, added an interpretation in terms of neo-Darwinian "selectionism." Because it was caused by the suppression of "natural selection" through medicine, social hygiene, and social welfare, which allowed "inferior elements" to survive and reproduce, "degeneration" could not be stopped merely by social politics, but required what Schallmayer called a "biological politics" (*CeB* 1907:71).

German eugenics became organized in 1905 with the founding by Ploetz of the Berlin Race Hygiene Society (Doeleke 1975). Ploetz had become a member of the Berlin anthropology society in 1903, and several of its leading members became members of Ploetz's new society, including Luschan, the ethnologist Richard Thurnwald, and Rudolf Virchow's son Hans (Weindling 1989: 134; PP: *Mitgliederliste* 1913). Although Luschan retired as president of the Berlin society in 1912 after a lengthy feud with Thurnwald, who was then secretary, he remained sympathetic to eugenics, urging Australian and American students in 1914 to "make eugenic doctrines part of your religious creed" (LuP: Sozialanthropologie 14: "Hereditary" & "Culture and degeneration"; AP/FL 1/20, 1/22/12; Melk-Koch 1989:84, 132, 150).

In 1907 Ploetz moved to Munich, where he created the Munich Race Hygiene Society, in which he succeeded in involving Karl E. Ranke, a physician and anthropologist interested in biometry who was the son of Johannes Ranke. In 1909, Ploetz was able to announce to Luschan that "the old professor

Ranke," president of the German anthropological society, was also joining the Munich society (LuP: AP/FL 5/30/09). A few months later, the elder Ranke in fact proposed to Ploetz an amalgamation with the Munich anthropological society, and they soon began to hold joint meetings (PP: JR/AP 11/29/09; Weindling 1989:142–43). A third local society was founded at Freiburg, where almost the whole medical faculty staff joined, along with the anti-Lamarckian biologist August Weismann; when Eugen Fischer returned from research in Southwest Africa in 1909, he became president. Among the anthropologists who joined the national society were Gustav Schwalbe, Theodor Mollison, and Rudolf Pöch, holder of the chair of anthropology at Vienna (*Mitgliederliste* 1909, 1913).

It is important to keep in mind that German eugenics was an extremely broad stream uniting otherwise opposing political tendencies, with members ranging from imperialists, race utopians, and anti-Semites on the extreme right over to nationalistic state socialists, like Ploetz and Schallmayer, and orthodox Marxist socialists like Karl Kautsky on the left (Graham 1977; Massin 1995). Although eugenics could be linked on the right wing with Nordicist and anti-Semitic racism, this association was by no means systematic. And if Ploetz sometimes expressed anti-Semitic views in his private correspondence, and in 1910 established within the Munich group a "Secret Nordic Ring," he kept a public distance from Aryan ideologues and did not integrate anti-Semitism in his racial hygiene program (Weingart, Kroll, & Bayertz 1988: 92–93, 195; Weindling 1989:135–38). Like Luschan, he felt that the Jews had played an "outstanding role" in the history of mankind, and placed them on the same cultural level as the "Western Aryans." Far from supporting their cultural or biological isolation, he favored a "full assimilation," as socially and biologically advantageous for the Germans: crossbreeding was a good way to enhance the "racial fitness" of both "races." Reacting in 1895 to the political success of anti-Semitic candidates in 1893, he had suggested that anti-Semitism would "slowly recede in the tide of natural science knowledge and humane democracy" (1895:141–42; Weiss 1987b:202–3).

Wilhelm Schallmayer, the first theoretician of German eugenics, was not a Nordicist. Opposing Ploetz's term "race hygiene" because he thought eugenics had nothing to do with anthropological "races," he suggested replacing it by the more neutral term "national eugenics" (1910:375, 384; Weiss 1987a: 103). In 1905 he reviewed favorably Friedrich Hertz's critique of *Moderne Rassentheorien* in Ploetz's eugenical review, and although he criticized the neo-Lamarckian Hertz for his lack of knowledge of genetics, and for tarring eugenics and racial theories with the same brush, Schallmayer "agreed with Hertz on all essential points." He opposed the "politics of racial arrogance" of the "Gobineau school," and prophesied that the "Aryan Gospel" would one day achieve a "disastrous power for our nation and perhaps also for the destiny of

Europe" (*AfRGB* 1905:860–66). In the shorter run, Nordicism was likely to take the eugenic movement in "a direction that leads nowhere or nowhere good" (1910:374; Weiss 1987a:101).

It was possible, in short, for anthropologists and other scientists of rather diverse political views to feel a kinship with the eugenic movement.[4] When Ploetz founded the first German eugenical review, the *Archiv für Rassen- und Gesellschafts-Biologie* in 1904, he succeeded in attracting prestigious collaborators in a variety of fields, providing a forum for all debates on heredity, theories of evolution, racial biology and bio-sociology (*AfRGB* 1904:iii). Until World War I, Ploetz successfully maintained a political balance in his review between Nordicist anthropologists and race theorists like Ammon, Wilser, Kuhlenbeck, Fehlinger, and their opponents, between liberal Jews like Friedenthal and Zionist Jews like Auerbach, as well as between neo-Darwinian, neo-Lamarckian, Mendelian, and biometric biologists. Among the numerous anthropologists who participated in one way or another were (in addition to those already mentioned) Buschan, Fischer, Luschan, and Schwalbe, along with Birkner (University of Munich), Kohlbrugge, (Netherlands), Kollmann, Lundborg (Upsala, Sweden), Pöch (Vienna), Weinberg (Dorpat, Estonia), Weissenberg (Ukraine), and even Franz Boas (who published a rejoinder to criticisms of his headform study [1913b])—as well as leading ethnologists (including Achelis, Preuss, and Vierkandt), prehistorians (Kossina), and other scholars in disciplines at the margins of anthropology. During the first decade

4. The fact that many of the staunchest critics of Aryan, Teutonic, Nordic, and anti-Semitic race theories were Jews (including Hertz in Germany, Finot in France, and Boas in the United States), and that these critics were generally environmentalists, should not hide the existence of a strong current of "biologism" among the Central European Jewish intelligentsia—a phenomenon demonstrating the pervasive influence of "biologism" and "race theories" in the human and medical sciences in German-speaking countries at the turn of the century. Much of this biologistic literature by Jewish scientists and scholars appeared in three main journals: Woltmann's *Politisch-Anthropologische Revue*, Ploetz's *Archiv für Rassen- und Gesellschafts-Biologie*, and the Zionist Arthur Ruppin's *Zeitschrift für Demographie und Statistik der Juden*. Many Jewish anthropologists and biomedical scientists also supported eugenics, and even played a leading role in its propagation. These Jewish physicians were frequently radicals or liberals who supported a type of "reformed eugenics" coupled with social and sexual reforms (Weindling 1989:102–5). Among Zionist scholars, some also asserted the existence of a "Jewish race." Thus Elias Auerbach proclaimed, in Ploetz's eugenical review, that in the whole "Jewish racial history, the strongest resistance to racial mixture came not from the other nations but from the Jews themselves," because the Jews were "more keen on racial purity than any other civilized nation"; quoting Gobineau, Auerbach concluded: "I say that a nation will never die if it remains always composed of the same ethnical components" (1907:361). These Zionist authors sometimes used the same rhetoric against mixed marriages as did Nordicist anthropologists. Thus Ruppin was convinced that "crossing with very different races almost always has detrimental consequences," and hoped "to keep the race pure in the future" (1910:92). For more details on this issue, see Doron 1980, Kiefer 1991, Efron 1994, Massin 1995.

of the twentieth century there was, in short, an increasing degree of overlap between German anthropology and eugenics—which by 1914 was being taught, under one more traditional medical rubric or another, in one-fourth of German universities (Günther 1982:37–67). It was in this context that German physical anthropology took on a new life as a form of biological anthropology with a therapeutic agenda.

Toward a Biological Anthropology Useful to the State

In contextualizing the turn-of-the-century transformation of liberal physical anthropology to Nordic racial biology, we have considered a number of disciplinary, intellectual, ideological, and social processes: the imperfect institutionalization of anthropology; ambiguities and contradictions in the racial liberalism of Virchow and his colleagues; the increasing influence of nationalism and imperialism; the growing disillusion with craniological anthropometry; the revival of Darwinism and the rejection of Virchow's inductive positivism; the emergence of new theories of human heredity and the turn to genetic approaches; the revival of the race concept and of European racial classifications; the Aryanism of surrounding disciplines and the vogue of "modern race theories," including especially anthroposociology and eugenics—with all of these linked to the emergence of a younger generation of physical anthropologists in the power vacuum left by the death of Virchow. Among the various further issues that might be addressed in a more systematic treatment of the transformation, there is one that may be briefly considered here: the claim by the younger, eugenically oriented physical anthropologists that their science might be of great practical utility to the state.

The low level of political and academic recognition of their discipline, which was reflected in the absence of chairs for anthropology in universities, was a matter of great concern to physical anthropologists at the turn of the century (Buschan 1900; Ranke, in *CoB* 1907:98). The usefulness of a science like chemistry was obvious for the industrial development and military power of Germany, but anthropology seemed to most officials a purely theoretical science with no application, a science where the only motivation was, as Bismarck put it in opening the annual meeting in Hanover, the gratuitous ideal of knowledge (*CoB* 1893:79). Physical anthropology had neither the obvious applicability of other "natural sciences" nor the prestige of traditional humanities. In contrast, ethnology could at least claim its utility in colonial policy (Buschan 1900:65; Martin 1901; Luschan 1906). Insisting on its importance in international colonial competition, Waldeyer, in an address at the joint meeting of the German and Austrian societies in Lindau in 1899, urged

that no officials should be authorized to take up positions in colonies without training in ethnology (*CoB* 1899:74). Germanic archeology had for some time been thought of as a "national duty" (Virchow, in *CoB* 1897:67) and an "outstanding national science" (Kossina 1912). But what could physical anthropologists put forward in petitioning the government for more chairs? If anthropologists themselves were convinced of the interest and value of their discipline, they nevertheless realized that it would not be supported by those outside "as long as they do not see it could be profitable for practical life" (Mies 1891:125).

One area of possible social utility had been provided by the application of anthropometry for police identification of criminals, an approach developed in the late 1870s by Alphonse Bertillon (Mies 1891; Kollman 1891:28). But when Francis Galton created an easier and quicker method with fingerprints, the tedious anthropometrical measurement of criminals lost much of its interest after 1900 (Darmon 1987). A second opportunity in this field was afforded by "criminal anthropology," developed by the Italian forensic physician Cesare Lombroso. But although the *Archiv für Criminalanthropologie* was founded in 1897, German advocates of Lombroso were psychiatrists or jurists rather than anatomists or anthropologists—while the latter were often critical of his work (*CeB* 1899:20). Virchow thought it was simply another type of "speculation" lacking any serious scientific basis—a "pure caricature of science" (1896b: 157, 162).[5] Yet another administrative application was the use of anthropometrical surveys for the army and for school administration to determine the size of equipment. But to confine the "Science of Man" to the menial task of measuring criminals or the sleeping bags of conscripts was not very satisfying for scientists who thought that human biology could bring answers to pressing social problems.

It was in this context that scientists found anthroposociology and eugenics so attractive. Already in 1899, Waldeyer was commenting on the necessity of anthropology in the solution of the new demographical problem, which endangered German military strength (*CoB* 1899:74). But the first one really to apply anthroposociological ideas was Schwalbe, who, in the face of lack of enthusiasm in the various ministries, sought in 1903 to promote a new national bioanthropological survey of the Reich. Because of the historical and social significance of the various races, such a survey would be of great importance "not only for anthropologists, but also for . . . politicians and government people" (1903:74). In his presidential address to the 1907 national assembly in Strasbourg on the "Mission of Anthroposociology," Schwalbe

5. With the spread of eugenic thinking in anthropology, this attitude changed. In 1914, Luschan asserted that "as a rule, crime is hereditary disease, generally incurable and often enough also transmissible" (LuP: "Culture and Degeneration," p. 4).

argued that by facilitating the understanding of "the historical process," the new discipline might help prevent the threatening decline of Germany. Anthroposociology had transformed anthropology, until then purely theoretical, into a science "highly useful to the State and to the society." Consequently, the state had the "unimpeachable duty" to offer "its powerful support" to anthropology's efforts "to serve the State and the society" (1907:66–68).

Two years later, in a speech on the "present mission of anthropology" at the meeting of the prestigious Gesellschaft deutscher Naturforscher und Ärtze, Luschan also treated the problem of "applied anthropology." The most vital element for a state, when its "national existence" was under threat, was its "force of defense," which depended upon the quantity and quality of its population. In the struggle for life between nations, "in real war as well as in trade and commerce, the healthier ones, those who are physically and mentally healthy, win." Plato was quite aware of that when he recommended to statesmen the "elimination of inferiors." What, then, should happen to those "inferiors"? In nature, inferior animals were quickly wiped out according to the law of "survival of the fittest." In primitive human societies, individuals who were morally or bodily inferior were also quickly stamped out because they were useless and/or detrimental to the community. But in the case of civilized nations, things were more complicated. An incessant conflict opposed national interest and duty to "sentimental soft-heartedness, false humanity, crass selfishness, private prejudice, and social privileges, all of which protect precisely those who are inferior, and protect them even more, and even more vigorously, the more the culture is advanced, and they protect them always at the expense of the strong, healthy, and pure!" Inferiors of all sorts, the mentally ill, feebleminded, alcoholics, criminal recidivists, beggars, and so on, were increasing faster than the upper classes of the society. The clue to this problem was to be found in "applied anthropology" (Luschan 1909:201–8).

Repeating his warning at the 1910 and 1912 anthropological congresses, Luschan suggested that the "new science" of anthroposociology was "not only of the highest imaginable theoretical interest, but also possessed a direct practical significance, particularly in confronting the question of national suicide and the "degeneration of civilized nations" (1910, 1912:53–54). In his presidential address the following year, Luschan again spoke of "applied anthropology or anthroposociology" as having "vital importance for us as a nation and for the motherland" (*CoB* 1913:63).

If Luschan's "applied anthropology" was not Nordicist, the same was not true of his younger colleague Eugen Fischer. At the 1910 meeting of the Anthropological Society and the Society of Natural Sciences of his academic town, Freiburg, Fischer gave a talk on "Anthroposociology and its significance for the State," suggesting that it had been Gobineau's merit to have argued that European races were not only physically but also psychologically "extraor-

dinarily different." While he considered "race theories" as often exaggerated, he believed that the "core" of the work of Chamberlain, Wilser, Woltmann, Lapouge, and Ammon "is right and will win general recognition." The brains of the various races were "differently organized," and their "whole psychology as well as their cultural achievement are extraordinarily different." The Nordics were the race responsible for "the highest and most intensive cultural achievement in Europe" from the beginning of history to now." Furthermore, the decadence of all European nations was due to the "elimination of the Nordic race." It was already eliminated in Italy, Spain, and Portugal, and France would be next; after that, Germany, "if it keeps on going like it has until now and like it does today!" (1910:18–23).

The only remedy was that offered by the new branch of anthropology called "race hygiene." During the last ten years, Fischer suggested, anthropology had begun to seize problems affecting "our daily life." Like medicine, anthropology had not only a theoretical dimension but also a "technical" and "therapeutical" one. Unfortunately, the warning calls of eugenicists and anthropologists were not heeded by official circles, even though the issues they broached involved the "most fundamental question for the existence of the State," as well as "the future of European nations." Governmental leaders should understand the importance of the teaching of anthropology in German universities, which was in fact the first step in the struggle against this peril. But "before the government takes a step, we have to take charge of this duty ourselves," by creating an International Race Hygiene Society to spread those ideas in the academic and cultivated public, governmental circles, and administration. To accomplish this ideological revolution, it was necessary especially to teach the youth that Germans must give up their "exaggerated humanity" and "pseudomorality," along with their "old and new ideas of expiation and individual hedonism," for a new ethic based on racial biology. Knowledge and will were the two most important things, because "if we have the will, we can do it." To control the future of Germany, it was necessary to control the biology of the nation, since in controlling reproduction "we" would be "masters of nature." "This doctrine will win; the study of race and thereafter the cultivation of certain racial components belongs to the future!" (1910:20–29). The first step to saving "our wonderful German Nation" was for scientists to influence public opinion through teaching and scientific propaganda; after that, laws and practical reform would come by themselves. Academics had only to "teach and prepare" (1910:25–30).

There was more to be done, however, than normal teaching. Fischer was an active evangelist to larger groups of the younger generation. In 1911, at the meeting of the Deutsch-Nationaler Jugenbund, he lectured his young audience on the importance of the "racial factor" in the life of nations, insisting that the race hygienist, like a surgeon for the whole nation, had to be ready to "cut

Eugen Fischer, in the period of his appointment as Rector of the University of Berlin in 1933 and his subsequent rapprochement with the Nazi movement after their seizure of power. (From the *Festschrift* for Fischer in the 1934 volume of the *Zeitschrift für Morphologie und Anthropologie*, courtesy of Robert Proctor.)

ruthlessly in where something was rotten" (1912). The program he proposed was nothing less than an ideological revolution, through both teaching and scientific propaganda, in which the next generation of the German elite was the prime target. With that accomplished, the political revolution would follow by itself. And in 1933, it did.

In 1913, however, the triumph of National Socialism was still two decades in the future. But even before the Great War it could no longer be argued that German physical anthropology, even in contemporary terms, represented an anti-racist tendency. Virchow, whose influence had largely sustained that position, was a decade gone from the scene. Franz Boas—whose physical anthro-

pology was very much in the Virchow tradition—had long since emigrated to the United States, where he had just published what was to be the most influential anti-racist work of the modern anthropological tradition. Felix von Luschan, Boas' friend and Virchow's successor at the University of Berlin, had embraced eugenics and race hygiene. The wave of the future was represented by Eugen Fischer, who was later to be Luschan's successor at Berlin, and who by 1914 had foreshadowed almost all of the ingredients (save Manichaean racial anti-Semitism) of what would later become Nazi "biological policy."

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Abbreviations

AA	*Archiv für Anthropologie.*
AfRGB	*Archiv für Rassen- und Gesellschafts-Biologie.*
CeB	*Centralblatt für Anthropologie, Ethnologie und Urgeschichte.*
CIAPP	*Congrès International d'Archéologie et d'Anthropologie Préhistoriques, Compte rendu,* 1866.
CoB	*Correspondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.*
MAGW	*Mitteilungen der Anthropologischen Gesellschaft in Wien,* 1870.
PAR	*Politisch-Anthropologische Revue.*
PZ	*Prähistorische Zeitschrift.*
VhB	*Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.*
VhG	*Verhandlungen der Gesellschaft deutscher Naturforscher und Ärtze.*
ZfE	*Zeitschrift für Ethnologie.*
ZIAVL	*Zeitschrift für induktive Abstammungs- und Vererbungslehre.*

ZMA *Zeitschrift für Morphologie und Anthropologie.*
ZSDJ *Zeitschrift für Demographie und Statistik der Juden.*

Parenthetic references which do not refer to a specific entry in the list below (e.g., *VhB* 1897:2) refer to texts in journals (see abbreviations above) which are not articles, such as presidential addresses, interventions in debates, "scientific report of the year," book and article reviews, or articles which are otherwise incidental to the topics of this paper.

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The research for this paper involved the consultation of a number of different manuscript archives, including the following, which are cited by acronyms in the text:

FP Fischer File of Freiburg (1900–14, academic letters), Universitätsarchiv Freiburg (Breisgau), Germany.
LuP Luschan Papers, Staatsbibliothek, Berlin.
PP Ploetz Papers, through Paul Weindling, Wellcome Unit in the History of Medicine, University of Oxford.
SkP Schoettensack Papers, Universitätsarchiv, Heidelberg.
SP Schemann Papers, Universitätsbibliothek, Freiburg (Breisgau), Germany.