

DOCUMENT RESUME

ED 305 673

CS 506 562

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 TITLE Nazified Science: The Shifting Relations between Scientific and Political Discourse.
 PUB DATE Feb 89
 NOTE 26p.; Paper presented at the Annual Meeting of the Western Speech Communication Association (Spokane, WA, February 17-21, 1989).
 PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142) -- Historical Materials (060)
 EDRS PRICE MF01/PC02 Plus Postage.
 DESCRIPTORS *Discourse Analysis; Foreign Countries; *Nazism; *Politics; Racial Discrimination; Rhetoric; *Science and Society; Science History; *Scientific and Technical Information; *Scientific Methodology
 IDENTIFIERS Discourse Aims; Germany; Rhetorical Strategies; Scientific Theories

ABSTRACT

In an effort to deal with a single aspect of a multifaceted interaction between technical and social discourse, this essay examines the movement of scientific discourse between the realms of politics and science. The paper addresses the effects on scientific methodology wrought by the Nazi employment of science as a basis for racial politics. The discussion focuses on characterizations of science by Nazi scientists and propagandists at the time. Analysis of these primary sources, the paper argues, indicates that as scientific discourse becomes appropriated for audiences and purposes beyond the arena of technical scientific disputes, the nature of scientific activity alters to accommodate these changes. The paper points out that on a more general level, when the discourse of specialists is employed in political contexts and finds a broader audience than other specialists, rhetorically induced methodological consequences ensue which alter the nature of the specialized field. The paper concludes that if the worst horrors in human history were conducted in the name of science or for the sake of a biological ideal, then the greatest service rhetorical analysis can render is to lay the groundwork for prevention through understanding. (Fifty-five notes are included.) (MS)

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Presented at the
Western Speech Communication Association Convention
Spokane, Washington
February 1989

CS506562

Nazified Science: The Shifting Relations Between Scientific
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Abstract: Although the distinctions between technical and public spheres of discourse have been drawn theoretically, few efforts have been made to observe the repercussions of blurring these discursive realms. This paper addresses the effects on scientific methodology wrought by the Nazi employment of science as a basis for racial politics. The discussion focuses on characterizations of science by Nazi scientists and propagandists at the time. The analysis of these primary sources indicates that as scientific discourse becomes appropriated for audiences and purposes beyond the arena of technical scientific disputes, the nature of scientific activity alters to accommodate these changes. More generally, when the discourse of specialists is employed in political contexts and finds a broader audience than other specialists, rhetorically induced methodological consequences ensue which alter the nature of the specialized field.

Nazified Science: The Shifting Relations Between Scientific and Political Discourse

Since the horrors of German National Socialism were recognized, the question of how supposedly civilized humans could participate in or permit such atrocities has repeatedly been posed. One of the most incomprehensible aspects of Nazism, however, is not simply that an entire populace fell prey to demagoguery. A truly alarming element of the National Socialist phenomenon is the interconnection between the Nazi political agenda and science. Of course, the juxtaposition of science and politics is alarming in this case because of the gruesome biomedical experiments conducted in the name of science. But a concomitant shock resulted from discovering that scientific principles and procedures were rewritten to move science out of laboratories and into the public forum, thus shattering hallowed conceptions of science as somehow quarantined from ideological agendas.

In this essay, I will examine the movement of scientific discourse between the realms of politics and science [*Wissenschaft*]. Although the distinctions between technical and public spheres of discourse have been drawn theoretically, few efforts have been made to observe the repercussions of blurring these discursive realms. This paper addresses the effects on scientific methodology wrought by the Nazi employment of science as a basis for

racial politics. The oscillation of science between these discursive spheres provides an historical case study of what Farrell describes as the relationship of social knowledge and technical knowledge.¹ While technical knowledge aims at understanding a reality external to discourse, social knowledge aims at establishing a consensus among social actors in a public forum. As far as science is concerned, this distinction is more a chronicle of the discursive communities working to shape the meaning of epistemic contentions than an inflexible dichotomy between scientific and non-scientific knowledge claims.² The analysis of Nazi rhetoric demonstrates how scientific discourse can be understood more as a resource to be employed rhetorically than as an invariant core of theoretical doctrine or procedures circumscribed by a community of scientists. In fact, Nazi science is an excellent example of how conceptually vague and even self-contradictory doctrines might have reduced the movement's appeal to other scientists, but strengthened its rhetorical flexibility.³

¹Thomas B. Farrell, "Knowledge, Consensus, and Rhetorical Theory," *Quarterly Journal of Speech* 62 (1976): 1-14.

²CF. Walter M. Carleton, "What Is Rhetorical Knowledge? A Reply to Farrell--and More," *Quarterly Journal of Speech* 64 (1978): 313-328.

³The notoriously unclear, even incomprehensible, tenets of so-called 'Aryan science' are summarized in Alan D. Beyerchen, *Scientists Under Hitler* (New Haven, CT: Yale UP, 1977); Steffen Richter, "Die »Deutsche Physik«," *Naturwissenschaft Technik und NS-Ideologie: Beiträge zur Wissenschaftsgeschichte des Dritten Reichs*, ed. Herbert Mehrrens & Steffen Richter (Frankfurt am Main: Suhrkamp, 1980) 116-141.

The flexibility of Nazi science as a rhetorical weapon comprises one facet of a broader concern. By examining the relationship between science and Nazi racial politics, I hope to establish a concrete historical foundation for understanding rhetoric of inquiry. If rhetoric of inquiry is understood as dealing with how discourse travels through and beyond specialized academic or technical communities,⁴ then this essay gives an account of the changes such journeys instigate in communities of specialists. As a result, scientific discourse should not be construed as a phenomenon occurring only within bounds set by technical specialists, but as one among many rhetorical resources which can be marshalled by forces operant in the public realm. The binding [*Verbindung*] of science to racial politics in Nazi Germany demonstrates how science is appropriated for uses beyond the parameters of scientific inquiry as practiced or stipulated by scientific researchers and theorists.

My examination of Nazi rhetoric proceeds in three parts. First, I explore the place of scientific, specifically biological, thought in Nazi racial beliefs and practices. Second, I disclose the impact of National Socialist political agenda on scientific procedures and assumptions. The concluding section suggests directions for further research on how scientific and political discourse

⁴As in John Lyne & Henry F. Howe, "'Punctuated Equilibria': Rhetorical Dynamics of a Scientific Controversy," *Quarterly Journal of Speech* 72 (1986): 132-147.

can intermingle, demonstrating the permeability of specialized discursive realms.

The Centrality and Role of Biological Racism

Political regimes, no matter how repressive, require some measure of public support.⁵ In fascist Italy, Mussolini grounded his rule at least partly on pledges to restore the lost glory of the Roman empire and the Italian renaissance.⁶ Ayatollah Khomeini justifies his governmental system by appealing to religious authority, specifically the holy prophets and the Koran.⁷ In the case of Nazism, scientific principles in the form of racial science [*Rassenkunde*] were often employed as warrants for racial prejudice and anti-semitic practices. This combination is indeed unusual, for while history and religion have been interwoven with political systems for centuries, in Nazism "an utterly novel principle for the public order, scientific racism," emerged.⁸

The relationship between science and Nazism lies much deeper than incidental connections, however. At its root,

⁵For the role of consensus in Nazi Germany, see Ian Kershaw, "The Führer Image and Political Integration: The Popular Conception of Hitler in Bavaria during the Third Reich," *Der "Führerstaat": Mythos und Realität*, ed. Gerhard Hirschfeld & Lothar Kettneracker, intro. Wolfgang J. Mommsen (Stuttgart: Klett-Cotta, 1981) 155.

⁶Cf. Benito Mussolini, speech delivered at the Politeama Rossetti at Trieste, *Mussolini as Revealed in His Political Speeches*, sel., trans., & ed. Barone Bernardo Quaranta di San Severino (London: J. M. Dent, 1923).

⁷Cf. Ayatollah Ruhollah Khomeini, *Islamic Government*, trans. Joint Publications Research Service (New York: Manor, 1979).

⁸Tim Mason, "Intention and Explanation: A Current Controversy about the Interpretation of National Socialism," *Der "Führerstaat": Mythos und Realität* 28.

Nazism was predicated on a biological hierarchy of races, a scientific consciousness Robert Jay Lifton aptly describes as a "biocracy."⁹ Even if the general populace did not embrace the scientific basis of racial theories as a doctrine, scientifically grounded racial thought clearly found its way into the everyday discourse and conduct of Germans and was incorporated as a foundation of action and belief.

Although some doubts have been raised about the centrality of Nazi racial doctrines in persuading Germans to support Nazism,¹⁰ there is broad agreement that National Socialism depended on a regularly reinforced and 'proven' racial consciousness expressed and understood biologically.¹¹ Moreover, Nazi leaders, scientists, and administrators consistently reaffirmed the biological grounding of Nazism long before the 'final solution' was implemented. Hitler attributed Germany's greatness to "her racial attitude" and military might, and designated racial preservation as "the grandest and most sacred task of

⁹ *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (New York: Basic, 1986) 17.

¹⁰ Milton Mayer, *They Thought They Were Free* (Chicago: U of Chicago P, 1955) 198.

¹¹ Henry Friedlander, "The Manipulation of Language," *The Holocaust: Ideology, Bureaucracy, and Genocide*, ed. Henry Friedlander and Sybil Morton (Milwood, NY: Kraus International, 1980) 107; John Langdon-Davies, "Nazi Science and Ourselves," *Forum* May 1934: 310; George L. Mosse, ed., *Nazi Culture: Intellectual, Cultural, and Social Life in the Third Reich*. Trans. Salvator Attanasio (New York: Grosset & Dunlap, 1966) xxvii.

man."¹² Hans Schemm, a member of the Bavarian cabinet, claimed: "national socialism is applied biology," a quote also attributed to Rudolf Hess during a 1934 Party meeting.¹³

Nazi scientists, prone to understand reality in scientific terms, were often receptive to, if not enthusiastic toward, a political biocracy. A Nazi physician admitted: "We wanted to put into effect the laws of life, which are biological laws."¹⁴ University faculty, medical doctors, and other highly educated Germans recognized the persistence of biological thinking in German culture and extended "the natural laws discovered for plants and animals" to human heredity and consequently, racial thought.¹⁵ Dr. Heinz Müller, editor of a series of books titled "Political Biology," contended that "National Socialist politics ought to be only biological, i.e., that which takes into account the laws of life. Everything else in German life ought to be subordinated to this principle."¹⁶ Propagandist Kurt Gauger emphasized the biological overtones of key Nazi principles such as *Volkestum*, repeatedly citing "Volk-biological" theories of

¹² Adolf Hitler, *My New Order*, ed. Raoul de Roussy de Sales, intro. Raymond Graham Swing (New York: Reynal & Hitchcock, 1941) 430, 408.

¹³ Quoted in Max Weinreich, *Hitler's Professors* (New York: Yiddish Scientific Institute, 1946) 34; Lifton 31.

¹⁴ Lifton 31.

¹⁵ Arthur Gütt, Ernst Rüdin, Falk Ruttke, *Gesetz zur Verhütung erbkranken vom 14. Juli 1933* (München: Lehmann, 1934) 13.

¹⁶ In Friedrich Burgdörfer, *Völker am Abgrund* (München: Lehmann, 1936), quoted in Weinreich 28.

psychopathology.¹⁷ Hans Löhr, medical director of the University of Kiel hospital, identified the political environment as the "National Socialist biological state structure."¹⁸ It is apparent that a scientific, more specifically a biological, consciousness underlay National Socialist thought and action. The next section addresses the understanding of science involved in this consciousness.

The Methodological Issue

In order to grasp the Nazi version of science, it is important to understand the tradition against which it was framed. In the Western world, science has been understood as a dispassionate investigation of natural phenomena. Methods of scientific research, despite their diversity, share a de-emphasis on the individual performing the research. The research methods employed should theoretically be replicable by anyone in a similar experimental environment, and the personal, national, or racial circumstances of the investigator are considered irrelevant to the methods employed and immaterial to the

¹⁷Lecture at Medical Congress for Psychotherapy, Bad Neuheim, 1934, *Politische Medizin: Grundriss einer deutschen Psychotherapie* (Hamburg: Hanseatische, 1934) 23-27. The German term *Volk*, central to Nazi thought, is left untranslated. *Volk* carries the meaning of popularity or commonality, as does its English cognate *folk*. In German, however, it has since the late nineteenth century carried biological-racial overtones of a populace united by common racial heritage and character. See Joseph W. Bendersky, *A History of Nazi Germany* (Chicago: Nelson-Hall, 1985) 41-42. Analogous to the French *le peuple*, *Volk* is an aggregate term used to invoke consciousness of a unified mass of people, as with "the people" in American public address.

¹⁸*Über die Stellung und Bedeutung der Heilkunde im nationalsozialistischen Staate* (Berlin: Nornen-Verlag, 1935) 35.

results obtained. In short, "the investigator's wishes and wants, his aesthetic, moral, or religious predilections, his faith in or desire for a particular conclusion, have been carefully eliminated as determining factors...."¹⁹ Joseph Priestley summarized this attitude from a scientist's perspective. The scientist, whom Priestley designated as a philosopher, is "uninfluenced by motives either of policy or gain" and should "embrace the interests of the whole species" irrespective of cultural differences.²⁰ A theorist more contemporary with the Nazis, Alfred North Whitehead, stated clearly the concept of science the Nazis vehemently combatted. Recounting the historical origins of science, Whitehead distinguished twentieth century scientific activity from previous scientific research on the basis of universality. Western "science...is transferable from country to country, and from race to race, wherever there is a rational society."²¹

The focus of controversy perhaps most clearly indicated how the Nazis diverged from their non-Nazi counterparts. Non-Nazi scientists deplored Nazi attacks on scientific objectivity, a National Socialist position which will be discussed at length in the next section. The American Association for the Advancement of Science, for example, found it necessary to pass a resolution to counter the Nazi

¹⁹Max Otto, *Science and the Moral Life*, pref. Eduard C. Lindeman (New York: Mentor, 1949) 96.

²⁰Joseph Priestley, *Priestley's Writings on Philosophy, Science, and Politics*, ed. & intro. John A. Passmore (New York: Collier, 1965) 263, 264.

²¹*Science and the Modern World* (New York: Mentor, 1925) 11.

linkage between race and science: "Science is wholly independent of national boundaries and races and creeds...."²² The racial notion of science will receive further attention, but the Nazi attempt to intertwine national and racial interests with scientific activity is especially interesting from a rhetorical standpoint.

Nazi science seems to transgress long-standing boundaries presumed to separate scientific from non-scientific discourse. According to what could be considered the received view of scientific inquiry, an implicit schism has been perceived between scientists and non-scientists. This differentiation was revealed on a theoretical level, for instance, when Walter Carleton pointed out how Thomas Farrell's distinction between social and technical knowledge depended on a clear-cut separation between scientific and lay communities.²³ On an empirical level, the lack of effective communicative interaction between scientific and lay communities intensified perceptions of incompetence and mismanagement during the Three Mile Island nuclear accident.²⁴

The attitude that scientists remain aloof from non-scientific communities while simultaneously serving the public at large has generated strong reactions within scholarly circles. It has become increasingly popular and

²²Manifesto signed by 1,284 scientific workers, in "Intellectual Freedom," *Science* 88 (16 Dec. 1938): 562.

²³Carleton 314.

²⁴Thomas B. Farrell and G. Thomas Goodnight, "Accidental Rhetoric: The Root Metaphors of Three Mile Island," *Communication Monographs* 48 (1981): 271-300.

perhaps necessary to engage in "demystification of the socio-political role many intellectuals have purported to play in modern Western society."²⁵ Investigations into the history and sociology of science have also yielded insights which call into question science's status as an autonomous discursive realm. Polanyi, Kuhn, and Ziman indicate that scientists act in accordance with decision-making guidelines and social demands extending beyond the closed doors of laboratories and scientific colloquies.²⁶

Given the currency of pointing out shared ground between scientific and lay discursive activity, it seems odd that there would be objections to the principle of linking science with politics or with other arenas of public discourse. The Nazis, however, did not simply tarnish the image of pure scientific research by coloring it with political overtones. Their approach to science was far more drastic than sullyng it with a Nazi *Weltanschauung*. The Nazis exploited a synergistic relationship between science and public policy. On one hand, science was infused with a political agenda. On the other hand, science itself was redefined as a component of National Socialist *Weltanschauung*, so public policy became infused with scientific-biological assumptions. Science "cannot and may

²⁵Eva Etzioni-Halevy, *The Knowledge Elite and the Failure of Prophecy* (London: George Allen & Unwin, 1985) 119.

²⁶Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago: U of Chicago P, 1970); Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: U of Chicago P, 1962); John Ziman, *Public Knowledge: The Social Dimension of Science* (Cambridge: Cambridge UP, 1968).

not escape a single detail of the foundation our Weltanschauung upholds," not because of strictures imposed upon science from without, but from the fact that scientific activity springs from the vibrant inner character of the German Volk.²⁷ Reich Minister of Science, Education, and Popular Culture Bernhard Rust affirmed that the Nazi "insight into the linkage of science with the Volk is the statement of a fact, not a demand which we import to it from the outside."²⁸ The situation, then, went beyond the employment of science as a means to add credibility to racial theories. National Socialism instigated the use of science as "political" science,²⁹ a move with far-reaching implications for the conduct of science and for political discourse.

Scientific Objectivity

The Nazis employed a series of rhetorical stratagems to reconstitute scientific methodology into politically useful procedures. The Nazi ploy was not only to "inject racist ideology into the content and conduct of each scientific discipline,"³⁰ but to attempt to revamp the very conditions of scientific investigation. Nazi scientists proudly proclaimed the transformation: "The reform of science does

²⁷ "Vergewaltigung der Wissenschaft?" *Das Schwarze Korps* 23 Feb. 1939: 13. Cf. Bernhard Rust, in Bernhard Rust and Ernst Krieck, *Das nationalsozialistische Deutschland und die Wissenschaft* (Hamburg: Hanseatische Verlagsanstalt, 1936) 21-22.

²⁸ Rust 19-20.

²⁹ Hans E. Friedrich, "The Case for Nazi Science," trans. from *Deutsche Allgemeine Zeitung, The Living Age* 352 (March 1937): 23.

³⁰ Beyerchen 152.

not come from its new tasks or new practical achievements, but from its new foundation in a living idea of humanity."³¹

One of the primary reconstructions involved the trenchant denouncement of scientific objectivity.³² According to the Nazis, scientific procedures and problems sprang from the inner essence of the *Voik* inhabited by the researchers. The character of the *Voik*, especially its racial composition, also was a necessary and sufficient determinant of the values upon which scientific activity relied.³³

Mathematician and astronomer Bruno Thüring claimed, in the spirit of Lenard's linkage of scientific progress to racial character, that a cursory examination of great scientists shows how scientific activity depends on racial character.³⁴

The characteristics of the racial community infused scientific methods and affected the scientists themselves. Nazi scientists typically attacked the supposition that science was value-free, noting that even the positivistic conception of progress relied on a faith in teleological improvement rooted in the Enlightenment.³⁵ Bruno Löhr explained the Nazi view of scientific objectivity: "The concept of an 'unbiased and objective' science, aiming at

³¹Rust 22.

³²Cf. Beyerchen 155; Alice Hamilton, "The Plight of the German Intellectuals," *Harper's* Jan. 1934: 160, 164.

³³Beyerchen (123) claims that these assumptions were shared by Nazi scientists as a whole. See, e.g., the preface to Philipp Lenard, *Deutsche Physik* (München: J. F. Lehmanns, 1936), where he argues the case for science being racially conditioned.

³⁴*Deutsche Mathematiker*, ed. Theodor Vahlen (Leipzig: Kommissionverlag von S. Hirzel, 1936).

³⁵Rust 14-15.

'absolute truth' based on pure reason, which arose in the liberalist period, has today entirely lost its reason and justification for existing, since we now have come to understand that a realistic science is always based on a personal contemporary-historical premise."³⁶ In short: "Scientific respectability depends on the racial soul."³⁷

This denial of objectivity forced criticism of Nazi views to occur on the Nazis' home court. Non-objectivity deprived argumentative opponents the opportunity to appeal to juridical standards outside Nazi beliefs. Ortega recognized this lack of objectivity in the moral sphere as characteristic of mass-consciousness, which he claimed Nazism and fascism epitomized. The member of the masses "accustoms himself not to appeal from his own to any authority outside him. ...[T]he mass man would feel himself lost if he accepted discussion, and instinctively repudiates the obligation of accepting that supreme authority lying outside himself."³⁸ The Nazi opposition to objectivity carries the argumentative benefit of letting presumption rest with the ideological habitat surrounding science. If a scientific dispute reaches an impasse, the Nazis frequently retreated to ground where opposition was impossible. For example, Nazi science failed to obey standard canons of scientific inquiry because it "finds a meaning of life in the organism of *Volksstum*, the spirit in the blood and in the

³⁶ Löhr 27.

³⁷ Mosse 198.

³⁸ José Ortega y Gasset, *The Revolt of the Masses*, trans. [] (New York: W.W. Norton, 1932) 73, 62, 74.

landscape of a *Voik*."³⁹ This pre-emption against criticism launched from scientific communities abroad resembles a cultural relativism which justifies communicative inactivity, an argumentative quietism easily extracted from statements such as Wittgenstein's comment that philosophy "leaves everything as it is."⁴⁰

The denial of objectivity also is reminiscent of the battle cry raised by scholars such as Kuhn, Ziman, and Polanyi, often echoed by rhetorical theorists who doubt the existence of field-independent adjudicative standards for arguments. Of course, denial of field-independence does not entail rejecting interfield argument. Nonetheless the Nazi hostility to objectivity seems to imply that arguments be posed in terms indigenous to the relevant *Voik*. Put in hermeneutical terms, the critic of Nazism would have to 'go native' and try to combat Nazi rhetoric by showing its internal incoherence and unsuitability for its target audiences.

The problem opponents of Nazism faced was fundamentally one of addressing their arguments to relevant audiences.

³⁹ Joachim Haupt, "Nationalsozialistische Wissenschaft," *Voik ans Gewehr!*, ed. Walter Grubner, fwd. Bruno Loerzer (Wiesbaden: A. Heinig, [1934]) 243.

⁴⁰ *Philosophical Investigations*, 3rd ed., trans. G.E.M. Anscombe (New York: Macmillan, 1958) §124. There is ample textual evidence for Wittgenstein's retreat from political discussion and reform, but the conservative implications are not self-evident. See K. Jones, "Is Wittgenstein a Conservative Philosopher?" *Philosophical Investigations* 9 (1986): 274-287. Jones argues from the philosophical standpoint of whether conservatism does justice to Wittgenstein's philosophy, while I allude to the rhetorical issue of how Wittgenstein's philosophy can be appropriated, regardless of fidelity to the philosopher's work.

Although the Western ideal of an objective, international science was virtually self-evident to scientists operating within a liberal, democratic tradition, anti-Nazi scientists conveyed an unpalatable message to Germans still smarting from the perceived meddling in German affairs authorized and epitomized by the Versailles treaty. Anti-Nazi rhetoric essentially asked the Germans to surrender their national identity in the scientific realm. If, as has been shown above, science and politics were inextricably linked, objective science represented another assault on Germany's ability to determine its own national future. In Hitler's words, "the natural forces...of our people...would one day necessarily reappear,"⁴¹ but only through the efforts of a leader who, rebuffing foreign impositions on national autonomy, would rekindle the Germany's racial consciousness.

The Perils of Theoretical Science

An emphasis on observation and experimentation as opposed to theoretical abstraction was another methodological perspective which characterized Nazi science. Western science was accused of positing a "theory of the abstract theoretical subject" instead of the Nazi ideal of the researcher as "a discerning member of a natural and historical order" to which he or she is bound in "an inner relation."⁴² This procedural orientation was directly linked to racial differences. The Jews, according to Johannes Stark, President of the Physikalisch-Technischen

⁴¹Hitler 121.

⁴²Rust 15.

Reichanstalt at Berlin, were "the chief exponents and propagandists of the dogmatic spirit," which relied on "logical mathematical construction" instead of "appropriate and careful observation."⁴³

When the Nazis addressed international audiences, as did Stark in this case, they downplayed the necessary connections between race and scientific procedure. Elsewhere, however, the message was clear: "Our natural science [is] one of specifically Aryan spirit, and developed against the uncanny opposing views of the world...." Scientific results were "obtained from a unique, vibrant, and creatively generating spirit and blood."⁴⁴ The races capable of inventing new ideas were deemed the bearers [Träger]⁴⁵ of culture, a term which carries the biological connotation of bearing or carrying antibodies or a disease.

The emphasis on direct observation and concrete experimental results, as opposed to theoretical abstractions and *Gedankenexperimentieren*, is of course superficially linked to the desire to combat the 'Jewish influence' in science, specifically Einstein's relativity theories. At a more fundamental level, however, the Nazis saw the essence of science--its assumptions, the character of the researchers, its functions--as being generated from the *Voik* which scientists ultimately served. The racial nature of

⁴³"The Pragmatic and the Dogmatic Spirit in Physics," *Nature* 141 (30 April 1938): 771, 770.

⁴⁴R. Thomaschek, "Besprechung von Ph. Lenard: Deutsche Physik," *Zeitschrift für die gesamte Naturwissenschaft* 3 (1937-38): 96.

⁴⁵As in Rust 10.

the linkage between *Volks* and science was often stated explicitly: "Our *Volks* is eternal, that is our belief. The great laws of race are guides of our thought. For us race is not only scientific findings, but the deepest basis of our *Volksstum*, our thought, and belief."⁴⁶ Hans Löhr explained how science and politics met in the *Volksisch* racial community: "*Volks* community and science are not opposed to each other. The concept of *Volks* community [*Volksgemeinschaft*], heretofore regarded only as a political concept, has now also become a basic scientific principle."⁴⁷

Here lies another link between technical and public discursive spheres. Traditionally, Western science is understood as addressing universal problems transcending national and racial boundaries. Aristotle, who could be considered the father of Western science, referred to the paradoxical non-scientific basis of scientific thought:

Since pure science or scientific knowledge is a basic conviction concerning universal and necessary truths, and since everything demonstrable and all pure science begins from fundamental principles (for science proceeds rationally), the fundamental principle or starting point for scientific knowledge cannot itself be

⁴⁶Werner Bänisch, "Rasse, Glaube, Bekenntnis," *Das Schwarze Korps* 17 July 1935: 9.

⁴⁷Löhr 27.

the object either of science, of art, or of practical wisdom.⁴⁸

Although the Nazis would condemn science's universality, they would heartily endorse the conclusion Aristotle reaches. Since the first principles of science are not the subject of practical wisdom, philosophical wisdom, or scientific knowledge, the starting points of science lie in intuitive reason. Compare Rust's comments on the nature of science: "Science...is bound in substance to something which is not itself science," namely the racial character of the *Volk*.⁴⁹ According to the Nazis, intuiting truths about natural phenomena translates into direct observation of how inviolable natural laws [*Gesetze*] of racial superiority operate in everyday life. Hitler expressed a commonplace when he mentioned how the best workers and employers could be chosen: "...nature and reality select best."⁵⁰ This observation in scientific terms amounts to formulating theories after gathering experimental data, not finding data to support theories.

⁴⁸ *Nicomachean Ethics*, trans. & intro. Martin Ostwald (Indianapolis: Bobbs-Merrill, 1962) 1140b.31-35.

⁴⁹ Rust 20.

⁵⁰ Hitler 400. Despite the apparent social Darwinist language, it is important to distinguish Nazi natural selection from the meritocracy proposed by most social Darwinists, such as Herbert Spencer and William Graham Sumner. A crucial difference between the Nazi and liberal brands of natural selection was the Nazi emphasis on racial determination of individual capability. For a detailed examination of social Darwinism in Germany, see Alfred Kelly, *The Descent of Darwin* (Chapel Hill: U of North Carolina P, 1981).

The opposition to theory apparently directly contradicts the affirmation of a pre-existent *Weltanschauung* conditioning scientific activity. Let us recall, however, that the natural roots of scientific and political activity sprang organically from the essence of the *Voik* itself. Objective, theoretical science was attacked as bloodless abstraction conducted by "[t]he rootless intellectual, lacking all understanding of organic development...."⁵¹ Nazi science is truly a linchpin of *Bevolkerungspolitik* (reshaping politics according to racial notions of 'the people'), because the necessities sparking scientific research arise from within the populace itself. While traditional Western science responds to universal needs, Nazi science responds to the call of its *Voik*, whose character is unique among all *Voik* and whose demands cannot be understood, much less satisfied, by researchers from an alien populace (e.g., Jews).

The contrast between the traditional Western scientific emphasis on universal problems and solidarity in solving them versus the Nazi fragmentation of the world into incompatible, often hostile, *Voikisch* groups, appears in the different approaches to the history of science. Western histories of science usually chronicle recurrent scientific puzzles which persistently defy solution, then are resolved, then these resolutions are refined, modified, or rejected. Typically, these accounts are issue-centered even when they

⁵¹Hitler 192.

are written as personal memoirs.⁵² Nazi history of science, on the other hand, is the history of individuals who personally reshape the course of scientific activity. Philipp Lenard's *Deutsche Physik* is typical in its focus on how researchers direct the flow of scientific activity rather than respond to problems vexing the scientific community as a whole. The researcher's personality arises to control historical events rather than the reverse.

The difference between issue orientation and personality orientation blends well with the pervasive *Führerprinzip*. Scientific research, like political activity, was a triumph of individual will, a bout of "lonely men in history who are not put to trial by historic events but determine the history of the country themselves."⁵³ Of course, this emphasis on individuality contrasts with the simultaneous affirmation of scientific discoveries stemming from racial characteristics which transcend individual will. The logical coherence of Nazism, however, is not at issue here. When technical discourse moves into the social realm, the accurate description and explanation of extra-discursive reality is no longer a primary objective or tactic. The area of concern now becomes how science can help instigate consensual agreement on matters of public concern. By selectively placing the onus of scientific activity on the individual, the history

⁵²Cf. James D. Watson, *The Double Helix* (New York: Signet, 1968).

⁵³Hitler 428.

of science lends a *sense* of personal achievement to scientists who strive to emulate famous exemplars. Granted that *Volks-gemeinschaft* (a racially homogeneous community) was the ultimate goal and foundation of science,⁵⁴ but service to the *Volk* could also bear the stamp--albeit illusory--of individual achievement. The Nazi scientists, therefore, need not suffer the blow to their work incentives dealt by the communist effacement of the individual. Nazi rhetorical tactics preserved the personal gratification element of liberalism while maintaining social solidarity promised by the communists.

Conclusion

The analysis of Nazi rhetoric indicates that as scientific discourse becomes appropriated for audiences and purposes beyond the arena of technical scientific disputes, the nature of scientific activity alters to accommodate these changes. More generally, when the discourse of specialists is employed in political contexts and finds a broader audience than other specialists, rhetorically induced methodological consequences ensue which alter the nature of the specialized field.

This essay has provided a preliminary account of how scientific discourse and political rhetoric interfuse. Undoubtedly much remains to be done. My purpose has been merely to provide an overview of how scientific discourse changes as a result of overlapping with the audiences,

⁵⁴ "Vergewaltigung der Wissenschaft?" 13.

functions, and strategic manipulations involved in political discourse. Nazi rhetoric provides an historical basis for observing points of intersection between discursive communities and for tracing the repercussions of such encounters. As a catalyst for further research, this investigation could be extended to encompass other political regimes (e.g., liberalism or communism) and other disciplines in academic communities (e.g., history, religion, or philosophy).

Only a small portion of the phenomenon of Nazi science has been addressed here. I have sought to examine the changes wrought on scientific procedures and principles when science is explicitly politicized. My comments dealt with how "the conditions of science were ruptured in the storm of the German revolution. Indeed, science itself split in the movement and in view of the spiritual revolution began to question the basis and the justification of its action."⁵⁵ Although I have approached the alterations within science, the other half of the intermixing of science and politics also must be addressed: the impact of scientific language and assumptions on political rhetoric.

Properly speaking, this paper has dealt with a single aspect of a multifaceted interaction between technical and social discourse. Attention to the alterations political concerns instigated in science should now be extended to how political discourse was recast in accordance with scientific

⁵⁵Rust 10-11.

presumptions. Instead of resting content with a self-satisfied condemnation of Nazi atrocities, let us probe the rhetorical strategies which made such crimes against humanity possible. If the worst horrors in human history were conducted in the name of science or for the sake of a biological ideal, then the greatest service rhetorical analysis can render is to lay the groundwork for prevention through understanding.