

The Anti-Nuclear Movement in Germany

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When I began researching the history of nuclear technology 35 years ago, it never occurred to me to give a lecture on today's subject. At that time there was strong resistance, rooted in a broad swath of the French (or more precisely, Alsatian) population to nuclear energy projects, more readily recognizable than in Germany. This is important to remember. Beyond that, I was also at that time an enthusiastic supporter of nuclear energy, and my original goal was to use the example of nuclear technology to expose the sluggishness of West Germany's government, which wasn't promoting the technology of the future energetically enough. As I gathered more and more information on the risks of nuclear technology soon thereafter, I came upon today's subject. Then it all seemed so simple: nuclear technology is very risky, and thus it's no wonder that heavy resistance was mounted against it. This doesn't really require much explanation. What *does* need to be explained, on the contrary, is why resistance is weaker in other countries than it is in Germany. In the 70s and 80s, sociologists tended to subsume the anti-nuclear movement under the "new social movements" category—a concept then imported from the U.S.—and to throw it on the same pile with the new women's movement, the new peace movement, and movements seeking the equality and inclusion of marginalized groups. I thought that this lacked specificity and told us little as a sociological generalization, leaving open a great opportunity for the historian to confront his or her concrete thinking. To that end, my impetus was pedagogical: the history of the nuclear energy controversy should bring the problems of nuclear energy into contestation, and should not be restricted to rehashing universal sociological constructions. The concept of the "new social

movements” was, moreover, bound up with theories concerning the “post-material,” “postmodern” world. Thus far I have never been able to adopt the position that we live in a post-material world. And the nuclear energy controversy had little to do with “post-material” values, but rather with very real ones: health, safety, and the proper role of public support for energy production.

My habilitation work, “The Emergence and Crisis of the German Nuclear Sciences,” argued that the protest movement could not be explained by any *Zeitgeist* and that nuclear technology was not simply a bogeyman for its detractors, and thus did not merely fulfill a symbolic function, as the nuclear lobby always alleged. Rather, my argument was that the controversy emerged according to the particular inner logic of the development of nuclear technology in Germany. The crux of my thesis can be brought together under three simple headings:

While the German nuclear sciences at first preferred to develop their own reactors, a preference buttressed by a strong initial consciousness that densely populated Germany required reactors with far more stringent safety standards than in the United States, American light-water reactors have prevailed since 1967 at the latest, despite being appropriate only for more sparsely populated areas (which don’t really exist in Germany) due to high residual risks.

Until the 1960s, the risks of nuclear energy were discussed with remarkable openness in expert circles. Yet as soon as billions became invested in light-water reactors, restrictions on discourse came into play, and discussion concerning maximal risks was suppressed. Thus, it makes sense that discussions which no longer took place in competent expert circles would make their way into oppositional public discussion.

As long as nuclear energy was a vision for the future, one could project all kinds of wishes and fantasies onto it (and in fact, the Germany of the 1950s, like many places in the world, experienced a veritable nuclear euphoria). That stopped precisely at the moment when nuclear power plants became a looming reality. This was quite sobering; as soon as a nuclear power plant was put in someone’s backyard, they began asking themselves, in a spirit of deep distrust, how long they could rely on nuclear security precautions in a worst-case scenario.

All in all, is it not entirely unsurprising that broad resistance to nuclear power plants has existed in Germany since the early 1970s?

New questions in retrospect and through international comparison. The controversy surrounding nuclear technology has in a certain sense been the biggest public controversy in the history of the German Republic, based on: (a) its duration, which lasted from Wyhl (1975) through Chernobyl (1986) and beyond, which contradicts all the theses concerning the short-lived quality of various “fashions” in today’s mediasphere; (b) its intensity, as the largest anti-nuclear demonstrations far exceeded the size of the demonstrations of the 1968 student movement; and (c) the sheer quantity and diversity of those who took part, as well as the occasionally elevated level of argumentation. What I find intellectually alluring about the controversy in particular is the attempt to straddle the gap between the social and natural sciences. In an emotional sense, I was only somewhat engaged and never

experienced any exceptional level of Angst. Today's younger generation knows very little about the controversy, and even older generations have already forgotten a great deal. When a "Renaissance for Nuclear Energy" was recently proclaimed, everything appeared to be starting all over again. In hindsight, one can only marvel at the extent to which critical consciousness was taken for granted in the 70s and 80s. But through trips abroad and engagement with other countries, it became clear to me that the gravity of the controversy in Germany demands explanation. In Germany, we had only an ambiguous, skewed picture of the development of nuclear energy in other countries. In cooperation with the Non-Proliferation Research Circle of the Heidelberg Evangelical Student Group, and through the Munich colloquium "France and Germany: Research, Technology and Industrial Development in the 19th and 20th Centuries," I set myself to the task of engaging with developments in France and other European countries. Since the 1990s, a number of trips to the U.S. have given me a more nuanced picture of the American scene; around the same time, a Taiwanese student did her doctoral work with me on the nuclear energy conflict in Taiwan; and last autumn, a trip to Japan prompted me to contemplate analogies and contrasts between German and Japanese developments in a more devoted fashion.

When I think back, I underwent three phases. In the first phase, I was amazed at how quickly the controversy surrounding nuclear technology in neighboring countries dissipated; the second phase began with the discovery of just how many countries had public controversy and protest movements against nuclear projects for quite some time in spite of everything, not only in Germanic but also in the Romance-language countries of Europe as well—France, Italy, Spain, Portugal—in addition to South Korea and Japan, not to mention Australia. After the catastrophe of Chernobyl, and over the course of the collapse of the Soviet Union, protest began to stir in the East as well. In Germany and in many other countries the conflict over nuclear energy became a catalyst for the environmental movement.

In spite of all of this, and herein lies my third phase of insight, if one takes all of the aspects put together—intensity, duration, extent, political influence—one is forced to conclude that the controversy in Germany possessed a singular magnitude. Dieter Rucht also came to this conclusion on the basis of intensive quantitative research.¹ An overview put together by the Australian Timothy Doyle, "Environmental Movements in Majority Worlds—A Global Perspective," which distinguishes between six different types of environmental movements based on their respective goals, puts Germany in the "anti-nuclear movements" category, though there was also a strong movement against nuclear projects in Australia.

Germany's special status in this regard is particularly consequential if one also relates it to another of Germany's special statuses: the history of its Green party in relation to the other Green parties of the world. Even from the perspective of sympathizers, the German Greens often came across as ridiculous. In a 1,137-page document that recently appeared on the Green faction in their first legislative period (1983–1987)—which in its indiscretion is unique amongst publications on the history of German parties—the Greens not infrequently appear as if they're playing in political kindergarten. Yet seen from a distance and in international comparison, their

impact was in no way ridiculous. The “International Guide” *Green Parties* by Sarah Parkin in 1989 from *Heretic Books* forces us to recognize that the German Greens, in spite of their inner tensions and political follies, are really the only Green party in the world that has participated in anything resembling Great Politics. And so it has more or less remained, at least in appearance (thus, NGOs stand front and center in the literature on the environmental movement, not the Green parties.)

Between the special status of the German Greens and the German nuclear energy controversy, there exists an obvious connection, for the Greens emerged above all out of the anti-NPP [nuclear power plant] movement. When they came into being at the end of the 70s, the question was whether one was for or against nuclear energy, and it was on this basis that it was decided who belonged and who was seen as an opponent (even if the alarm concerning the great “forest death”² brought confusion into the ranks). This, too, underscores the relevance of the question of why the controversy concerning nuclear energy reached its apex in Germany.

What is to be done with these findings? How can they be explained? How can one methodology attempt an explanation? What research should one rely on? All of this is difficult to determine. Transnational comparisons are underdeveloped in general, particularly in the historical sciences, with their strong orientation toward the nation-state. But a study that transcends the nation-state is also not easy: it is time-consuming but nonetheless often remains superficial. Well, then, let’s give it a preliminary try! A comparison involving every country in the world is of course impossible. I will thus select three countries for comparison, which are for many reasons especially relevant and illuminating: France, the U.S. and Japan. On the basis of these and other comparisons, I wish to venture a few hypotheses that could explain the special gravity of the nuclear conflict in Germany. But a final, empirically unambiguous answer I do not have.

Germany in Comparison

Germany-France

Today, very few people are aware that the first large European demonstrations against a planned NPP took place not in Germany, but rather in France, on April 12, 1971 in the Alsatian town of Fessenheim. This resistance was ultimately unsuccessful, but the 1974 demonstrations against the lead chemical factory in Marckolsheim, Alsace, were successful. French traditions of *action directe* and of agrarian resistance, as well as regional Alsatian traditions, may have been highly significant, and determining which historical background condition was of particular importance is not to be overlooked.

Exemplary instances from beyond the Rhine of occupying construction sites were certainly significant for the planned NPP at Wyhl on February 18, 1975, where an anti-NPP protest in Germany appeared for the first time as a militant mass movement and forcefully made its way into media headlines. (In 1974, an undertaking by the Battelle Institute found that among roughly 10,000 German press articles on nuclear energy, only a minuscule fraction were critical—despite what was so often asserted later, the primary impulse did not come from the media!) As early as December 28, 1971, today

long forgotten, representatives from a reported 50 anti-nuclear initiatives in a variety of countries met in Strasbourg, and at the time observers already believed they could declare that “after a period of ‘spontaneous’ and individual action, the transition to an organized concentration of coalitions is already underway.”

To the present day, there is still no well-established international history of the anti-nuclear movement. Today, we see only partially how resistance gathered. Later, when France became the unquestionable stronghold of nuclear energy, it became fashionable to construct an ideal-typical contrast between Germany and France: France as the land of rationality and belief in Progress, Germany as the land of romanticism and uneasiness toward modernity. The German nuclear lobby in particular relished polemicizing against the supposed German tradition of hostility toward technology. I don’t want to exclude the possibility that there’s perhaps a tiny bit of truth in this constructed contrast. But a mountain of evidence comes forth that doesn’t fit this picture. Ideal types in the Weberian sense are thought constructions, not reality. The history of German technology in no way documents any hostility toward technology. And, as already shown and against what many Germans believe, *vive l’atome* was in no way the only prevailing opinion in France. There was rather a great deal of protest there, and public opinion polls show that unease vis-à-vis nuclear technology was not much less widespread in France than in Germany.

Three distinctions between France and Germany are evident and could partially explain why opposition in France was far less effective than in Germany. First, France is far more sparsely populated than Western Germany. Second, France is in possession of far smaller coal reserves. In the 1960s, solar power projects in the Pyrenees and tidal power projects in the Atlantic aroused public attention. But ultimately their significance was more symbolic than real. Third, France was a nuclear power, and because of this fact nuclear technology already had a broad-based organizational apparatus at its disposal, which the German Atomic Commission could not approach in the slightest. And on top of that, nationalistic motives were bound up with nuclear technology in De Gaulle’s France, which also certainly existed in secret in Germany but dared not speak its name in public there.

Atomic bomb production was not only an initial advantage for the “peaceful atom” but also a burden. It exercised a drag on reactor development, which stood in tension with the requirements of the energy economy. Out of “national” motives, the CEA (Commisariat à l’énergie atomique) under De Gaulle insisted on the gas-graphite reactor line, while the EdF (Electricité de France) would very much have liked to adopt cheaper American light-water reactors as the German economy had done at the time. Was this situation advantageous for French critics of nuclear technology? As it seems, this was the case circa 1970, with the end of the era of De Gaulle and the shake-up in the authority of Gaullist nuclear politics—but not for long. A French journalist a few years later was asked by a German nuclear opponent why so little criticism had been brought forth in the French public. He countered that in French society, the atom bomb had been controversial for so long that people were simply too sick of talking about it to make much of a fuss over nuclear technology.

If protest against nuclear energy in France remained more or less stalled, French centralism, according to all appearances, was the decisive factor. In the name of

expanding protest, there must not merely be a reason for indignation, but also a chance of success. This was far more obviously the case in Germany than in France. In the 1960s, the nuclear sciences were terrified of French bureaucracy and French *planification* and as a consequence were mistrustful toward Euratom (Europäische Atomgemeinschaft), which initially bore the nickname “European Society for the Peaceful Production of the French Atomic Bomb.” In the 70s, however, they began to envy French centralism.

German approval procedures for NPPs possessed one decentralized element, at least formally: town hall meetings. There was no forum for critics who lived with NPPs in their backyards. Indeed, these town hall meetings frequently proved themselves to be nothing more than a farce, since the construction of NPPs had already been settled on by the state governments. But it was precisely this experience that set critics, who didn’t think they were being taken seriously, into a rage and destroyed trust in the integrity of the approval procedures. And the experience with the police! The protesting German students of the ’68 revolts believed that the German police forces were, in principle, especially brutal, because they were full of former National Socialists. Whoever took part in demonstrations against the Brüter project in France encountered precisely the inverse of what they expected. As it was stated in the brochure titled “Against the Nuclear State,” with texts by Wolf Biermann, Klaus Traube and Guenter Wallraf: “In comparison with Malville, Brokdorf was a walk in the park. With smoke, gas and grenades, the police opened fire as if it was wartime.” In the 70s, I lived wall-to-wall with a man from the political police, who had frequently been on duty at anti-NPP demonstrations. He confessed to me that there were many police officers that sympathized with the protestors and were frustrated with their assignments. In France, the situation was apparently different. Dieter Rucht’s quantitative comparison between German and French protest doesn’t reveal everything: in France, the struggles were repeatedly larger and more daring.

In and of itself, that should have meant a chance to become heroes for brave NPP opponents. But in the late 70s, the era of the Che Guevara cult was over. The environmental movement was filled with a new pathos of *life* and was interpreted as an opportunity for martyrdom only to a very limited extent. When the teacher Hartmut Gründler incinerated himself on the steps of Hamburg’s Petrikirche on Penance Day in 1977, he failed to pass into collective memory, in stark contrast with his exemplar, the East German pastor Oskar Brüsewitz, who incinerated himself in Zeitz (East Germany) in August 1976. For radical Christians, a martyr was a saint; in contrast, the veneration of saints was foreign to the anti-NPP movement.

Germany-United States

Most German opponents of nuclear power were unaware that the earliest impulses of the German nuclear energy controversy came from the U.S. Holger Strohm, who authored the first comprehensive German compendium of anti-NPP arguments (“Peacefully into Catastrophe,” first in 1973, then followed by multiple further editions) was the chairman of the German chapter of the *Friends of the Earth*, and he came upon his information sources via his American connections.

Strangely, the American origins of the nuclear energy controversy have been long forgotten, even amongst American environmental historians themselves. In the American “Encyclopedia of World Environmental History” (2004)—in three large volumes—nuclear technology and the anti-nuclear movement are only marginal themes. The reactor catastrophe at Chernobyl, a world-historical caesura on the German environmental scene, doesn’t even have a special article devoted to it. In the recently published collected volume *Natural Protest—Essays on the History of American Environmentalism* (published by Michael Egan and Jeff Crane), one finds nothing on anti-nuclear protest, and the same goes for *Major Problems in Environmental History*, published by Carolyn Merchant as a wide-ranging primary source. Even a collected volume specially devoted to the environmental history of St. Louis (*Common Fields*, published by Andrew Hurley in 1997), says nothing about St. Louis’ status in the 60s as a center in the campaign against nuclear testing and also against public nuclear sites. For a German environmental historian, for whom the nuclear problem is their primary subject, this is an entirely mysterious state of affairs, and American colleagues shrug their shoulders and cannot explain the enigma.

That might be at least partially accounted for by the differing orientations toward environmental-historical research in Germany and in the U.S.: in Germany, environmental history emerged in disciplinary retreat from the history of technology, whereas in the U.S. it emerged in retreat from “Western History”³ and not at all in reaction to the risks of modern technology. But that’s not all. Between nuclear conflicts in the U.S. and in Germany there exists an obvious temporal disjuncture.

In the U.S., the conflict had already reached its peak in the 60s. Afterwards, there was a direct carryover from the protest movement against nuclear weapon tests in the atmosphere to protest against public NPPs. One connection was protest against the “Plowshares” program (a play on the Biblical expression “swords into plowshares”), a public program that intended to use atomic weapons to build a new Panama Canal (“Panatomic Canal”) without locks through the isthmus of Panama at sea level. Criticism of NPPs sharpened in the late 60s, when experiments showed that the reliability of emergency cooling systems during severe reactor breaches is limited. In the middle of the 70s, in contrast, at the apex of the nuclear conflict in Germany, things had already gotten quiet in the U.S. Indeed, there had been in principle no pullout from nuclear energy, yet *de facto* no new NPPs were ordered. The main reason appears to have been cost. Under the Carter Administration, the U.S. government turned against Schnelle Brüter and reprocessing facilities for reasons of anti-proliferation, and against precisely those projects—like Kalkar and Gorleben—that became targets of especially strong protest.

Under these circumstances, there still existed very little incitement to large protest movements in the U.S., even after the serious breach at Three Mile Island in March 1979. Indeed, because the international Gorleben Symposium met in Hannover at precisely that time, under the direction of Carl Friedrich von Weizsäcker, Three Mile Island may have had a stronger impact in Germany than in the U.S.

Yet one more distinction between the U.S. and Germany deserves our attention at this juncture: from the beginning, leading scientists in the U.S. stood at the forefront

of criticism of nuclear projects. None other than David Lilienthal, after 1945 the first chairman of the AEC (Atomic Energy Commission) and previously a charismatic large-project organizer of the New Deal, completed his transformation into a nuclear energy skeptic. The Union of Concerned Scientists, which emerged out of criticism of nuclear weapons, also partially became a brain trust of critique of NPPs. Gofman and Tamplin, promulgators of criticism of the AEC (which was later dissolved), had been leading experts on nuclear technology. Even more important presumably was the biologist Barry Commoner, whose head graced the first environmental issue of *TIME* in February 1960: "Ecologist Barry Commoner—The Emerging Science of Survival—Environment: Nixon's New Issue" (The first environmental issue of *Der Spiegel* in the same year lacked such an identifying figure!). For Commoner, everything was bound together: protest against atomic testing, against the Vietnam War, and against public NPPs, and all of it on the basis of his broad ecological competence.

The German anti-NPP movement was lacking authorities of comparable scientific reputation. The German atomic physicists who had raised their voices against the nuclear armament of the *Bundeswehr* in the "Göttingen Manifesto" in April 1957 at the same time enthusiastically proclaimed their support for the use of the "peaceful atom" and remained in support during the following years. In comparison with the U.S., this seems an important structuring factor for the German protest movement. In the American public, the impression could arise that among experts there are enough critical minds that one can trust. Presumably, that was a reason why there was indeed a great deal of critical literature on nuclear technology but nevertheless few large demonstrations. In Germany, in contrast, the impression emerged much more strongly of a tightly enmeshed "Establishment" of science, economics and politics, a situation in which the self-initiative of the public was demanded. There was a great deal more room for a militancy that required no regard for academic reputation whatsoever.

On the other side: at the apex of the German nuclear conflict, as strange as it sounds, the bomb was not a central theme. The bomb emerged as an issue mostly in the context of atomic apologetics, which occasionally argued that the true danger came from atomic weapons, and that public NPPs had unjustifiably taken on a representative role. Out of the "Göttingen Manifesto," criticism of the nuclear armament of the *Bundeswehr* stood in a context that dressed up the "peaceful atom" as a counterpoint to the bomb. This first began to change after 1980, when the new peace movement merged with protest against the Wackersdorf nuclear reprocessing project.

In the U.S., there had always existed a much more direct connection between criticism of public nuclear energy and of nuclear armament. That stood completely in unison with "Ecopax," the fundamental pacifist tendencies of the environmental movement. Just as strange, one finds that anti-nuclear protest, in spite of the charismatic presence of Barry Commoner (who even ran for President in 1980), never became a basic element of the American anti-nuclear movement. The same Michael Egan who co-published the already-mentioned essay collection on the American environmental movement published a biography of Barry Commoner shortly prior to that. There, he put forth the thesis that the American "mainstream" environmentalism of the 70s completed a renunciation of the anti-capitalist/socio-critical world-

view of Commoner. If that is the case, then anti-nuclear protest in the U.S. stood in a context that already belonged to the high point of environmentalism. When analogizing the anti-NPP protests, as well as other environmental initiatives in different countries, it's important to be aware of contexts and time lags of this sort.

Germany-Japan

Here it gets especially difficult. In and of itself, the comparison between German and Japanese postwar history is manifest and not seldom illuminating, for both countries underwent a similar fate: a deep collapse after a phase of megalomaniacal chauvinism and imperialism, and then, after a period of hardship and powerlessness, a spectacular economic comeback. In the German as well as in the Japanese tradition, there's a pronounced nature cult, and both nations shaped up to be forerunners of environmental politics in the ecological era after 1970, although by no means consistently or in every respect.

Japan, however, lacked a great nuclear energy controversy. That's very strange for a number of reasons: Japan is the first and so far only victim of nuclear weapons. When the Japanese fishing boat *Lucky Dragon 5* was hit by the fallout from an American hydrogen bomb test in 1954, this scandal gave impetus to the international protest movement against nuclear weapon tests in the atmosphere. The Japanese mainland, moreover, is far more densely populated than Germany: correspondingly, the residual risk of nuclear technology is higher. On top of that, Japan is one of the most earthquake-prone countries in the world. In the United States, the regional earthquake danger was the key argument of the first initiatives against a nuclear energy project at Bodega Bay in California. For yet another and more unique reason, conditions in Japan were amenable to anti-NPP protest: because the Japanese electronics industry—herein more forward-looking than the German one—from very early on concentrated not on nuclear technology but rather on electronics, nuclear power never had a “national” argument in favor of it. On the contrary: the reactors had to be imported from the United States.

How it is that Japan never experienced a large protest movement in spite of all of this remains to be investigated. It concerns one of those questions upon which one first comes via international comparison. Supposedly, the main reason lies in the fact that no alternative to nuclear energy could be seen from the very start: Japan has no rich coal reserves at its disposal; the dependence on Chinese coal would have been a nightmare; the great oil resources of the world are far removed from Japan; and wind power, even in the land of typhoons, isn't exactly a confidence-inspiring energy resource. That saving energy in the short term is by far the most effective energy resource was understood by the Japanese automobile industry, to their advantage, much earlier than in the German automobile industry (while the Japanese, since the end of the “wooden age” around 1960, preferred to have their interior heating provided by electricity—a scandal in the eyes of European energy conservation strategists!).

And Hiroshima? In Tokyo there is only a small, hidden, and seldom visited memorial for the victims of atomic weapons. The subject was, as one hears, never popular in Japan. The victims had to suffer under discrimination, and a “culture

of memory”—to use a fashionable word—never developed. As Europeans familiar with Japan relate, the Japanese prefer to display a composed cheerfulness and dislike speaking about misfortune and suffering. Whether or not this judgment is tenable in such a sweeping form is open to doubt, as one finds counter-indications in Japanese literature as well. But Arnold Toynbee, the British universal historian, was presumably right in his thesis that cultural successes indeed emerge as a response to challenge and crises. These challenges, however, can't be too strong. In Germany's experience, people became capable, first out of a certain temporal distance, of a creative working through of the terrible catastrophe that was Nazi rule and World War II. From Russia it was reported that the contamination of Lake Baikal, famous for its beauty, gave the environmental movement a strong impetus, but not, however, the reactor catastrophe at Chernobyl—because Chernobyl struck at the core of a Russian national pride founded on leading technologies like Sputnik. Presumably, the atomic catastrophes of Hiroshima and Nagasaki were so immense that they could no longer be processed by many Japanese—only suppressed.

That was in no way the case with other Japanese environmental catastrophes, at least not in the long run. This is true especially for the Minimata tragedy (the contamination of an until-that-point paradisiacal bay on the island of Kyushu, via methyl quicksilver drainage from a chemical plant, with horrendous health damages for residents). The literary documentation of this scandal by the author Ishimure Michiko (*Paradise in the Sea of Agony*, first published in 1969) had a significance for Japanese environmental protest that reminds one of the influence of Rachel Carson's *Silent Spring* (1962) on the American environmental movement.

But we begin to push up on a further important point here: when we ask why there was no great nuclear conflict in a country, we must also inquire whether or not there were also other great conflicts at the time that dominated public consciousness. Everyone that took part in the nuclear energy controversy knows from their own experience that engagement with these issues demands a lot of time and energy, that one cannot take part in diverse multiple environmental struggles at the same time, and that even if one had the time to, the inner *élan* to do so would be lacking.

This is an elementary dilemma of the environmental movement: the spectrum of environmental problems is immensely wide, and a lot is bound together—yet our powers are limited, and whoever engages themselves must concentrate on a particular task. Why was there no great nuclear conflict in England, although the first big reactor failure—although downplayed for decades—occurred there in Windscale on October 8, 1957? Perhaps because British nature- and environment-protectors were traditionally concentrated on completely different goals: bird protection, struggles against hunters and against freeways, “Reclaim the Streets”? Shortly after Chernobyl, I spoke in private with a student from East Germany. He appeared most dissatisfied with East German relations. Yet at the same time, he explained to me that the German “hysteria” about Chernobyl made him furious: here in East Germany, they're practically choking on brown coal smoke. One would be happy to have more NPPs instead of that; the German anti-NPP protest is typical for a land of luxury. All in all, in order to understand the confrontation with nuclear energy, one does not have to

fixate solely on the ambit of NPPs. Instead, the whole historical scenery of a country must be held in view.

A few explanatory hypotheses

German Romanticism, German Angst?

As I stated before, it was popular in circles within the atomic “community” to ascribe the particular intensity of resistance in Germany to old traditions over which National Socialism cast a dark shadow. But careful! As Martin Bauer already presented in 1993 at a London Conference in “Resistance to New Technology,” which attempted to provide an international overview, “technophobia” is a “misleading concept,” a phantom conjured by the protagonists of new technologies. Germans, Frenchmen, Britons, and Americans have all in turn accused one another of hysteria and hypochondria, but national ascriptions of this sort are to be handled with care. After all, it would have gone better for the Germans if they were more afraid of war in the first half of the twentieth century.

Nonetheless, it appears as if not all national ascriptions are based on projections and prejudices. As I already stated, in international comparison with the United States, it appears as if the German *Reich* in the decade around 1900 was a stronghold of “neurasthenia” in need of therapy. At first, I had hoped to gain insight into a psychic dimension of technological change via my research into neurasthenia, for in the contemporary literature it is a *topos* that modern anxiety has a great deal to do with modern technology. In the patiently produced files of the neurasthenists, I often searched, to no avail, for the “technological” factor—much more often, sexual frustration of various sorts seems to be the cause of neurasthenia. In contrast to what Freud asserted, causes of this sort in a great many cases in no way disappeared into the unconscious.

Incidentally, the care of the nerves was often a matter of a productive drive, which we find again in the endeavor to reform daily life to undertake school reform and to dismantle the “social state.” The philosophy that underlies state social insurance was typical for the “nervous age”: in order to work well, you also have to be able to sleep well. One might get the impression that German engineers and factory inspectors were traditionally somewhat less risk-loving than their colleagues in some other countries. But if that applies, then this disquiet—seen as a whole—was neither an obstacle nor a detriment to technological development. Friedrich Münzinger’s “*Atomkraft*,” the standard work in the 1950s in Germany on reactor construction, is full of warnings concerning the risks of nuclear technology, as one found twenty years later only in the writings of the opponents of NPPs. With a great deal of relish, he determined that many Germans confronted nuclear facilities “more mistrustfully” than “for example, the Americans.” Take note: Münzinger was anything but an enemy of technology, and, all the more, an experienced construction supervisor of large NPPs. In his book *Engineers* (1942), he had argued that exact knowledge of risks belongs in its essence to the competence of good engineers and distinguishes them from the lay public.

And German romanticism? It's tempting to obsess over the way in which environmental protest in Germany was bound up with the old German *Waldromantik* [forest Romanticism] over the course of time. From the beginning, this connection did not exist. The forest was the domain of the woodsmen, who in Germany were proud of a long tradition of sustainable forest management. At first, it appeared as if environmental protectors wouldn't need to care for the forest. The first connection between anti-NPP protest and *Waldromantik* seems to have appeared in the area around Gorleben, where protesters founded an anti-nuclear town, "The Free Republic of Wendland," and lived there in the style of a country commune, hugging tress and climbing treetops when the police vacated the premises. One of the "tree women" at that time, Rebecca Harms, is a representative for the Greens in the European Parliament today.

The alliance between the environmental movement and *Waldromantik* became a broad social current via alarm concerning the "death of the forest," a term introduced with the *Der Spiegel* article from November 16, 1981, "Der Wald stirbt" ("The forest is dying"). But this alarm, which was overwrought in retrospect, scrambled the two fronts together, and is an argument against those who wanted to derive the course of the environmental movement from the logic of environmental discourse: for now coal factories became targets of criticism—a tendency that became even stronger through alarm concerning climate—and many proponents of nuclear energy began to inwardly celebrate. This triumph was spoiled years later by the Chernobyl catastrophe.

Warning: don't dig for the roots!

When one took part in public discussion for and against nuclear energy in the 1970s, one could usually recognized at a first glance which side a speaker belonged to: the whole *habitus* of the opponents distinguished itself in a dramatic fashion. The proponents of nuclear energy were without fail properly dressed, with a gray suit and a tie; the haircut was also proper, and all body language was highly disciplined. Their opponents were as a rule younger, often long-haired and more colorful, at the very least dressed in a more relaxed fashion, and easy-going in body language. All in all this is a perfect exemplar of Pierre Bourdieu's concept of *habitus*. And from this outward example were often culled wide-ranging conclusions, as if we encounter here two fundamentally different cultures, *Weltanschauungen*, and personality types.

Today, however, many supporters and opponents of nuclear energy are no longer identifiable based on their outer *habitus*. Not infrequently are the opponents older than the supporters. The old anti-NPP fighters have become a generation of parents rendered laughable from the perspective of their children, as in the popular film *Der Tag, als Bobby Ewing starb* [*The Day Bobby Ewing Died*].

But one could have already seen thirty years ago that the nuclear energy controversy was not an expression of a cultural conflict rooted deep in German history. For as late as the 1960s the fronts had been completely different (again and again it arouses unbelievable astonishment when I remember it!). Though many intellectuals, as many polls show, had always been skeptical, at that time nuclear energy was for the typical intellectual an embodiment of progress worth striving for. If one felt

“progressive” or “left,” one took pains to criticize the *Bundesregierung* [federal government] for (supposedly) not pushing this energy of the future ambitiously enough, or of conservatism, indolence, distastefulness from science, and neoliberal economic dogmatism. Erhard Eppler, who advanced to the head of the green wing of the SPD in the 1970s, criticized the *Bundesregierung* in 1967 for not doing enough to support the breeding reactor [*Brüter*]. Robert Jungk, the most eloquent combatant against the “atomic state” in the late 1970s, had previously been an outspoken herald of atomic physicists and inspired the legend of passive resistance of German atomic researchers against the atom bomb project during the Nazi regime.

Additionally in that earlier period, skeptical voices were by no means lacking, but rather to be found where one in retrospect would least expect them: in many prophets of the “social market economy” of Ludwig Erhard, amongst experienced engineers—for example Friedrich Münzinger—or at the head of RWE, the Rheinisch-Westfälisches Elektrizitätswerk (Rheinland-Westphalian Power Plant), the largest electricity producer in Germany by a wide margin. The RWE had developed large brown coal fields in the lower Rheinland at enormous expenditure in the 1950s and 60s: brown coal was its triumph. There, nuclear energy was above all an interrupting force, a potential advantage of competition. When the federal minister of research, Gerhard Stoltenberg, urged and practically begged the RWE in 1966 to finally enter the nuclear fray, he received from the energy giant a written response that was basically a compendium of anti-nuclear arguments of the time. One RWE advisor, Löbl, practically specialized in tearing apart the calculations of nuclear energy optimists. The previous secretary of Heinrich Mandel—in the 1970s the oft-cited “atomic pope” of Germany—complained to me that the cancer from which Mandel died in 1979 had been caused by the eternal obstructionism of the brown coal faction in the RWE directorate. When the RWE in the 1970s had to defend nuclear energy at the front line against the onslaught of resistance, it was not well prepared for the struggle.

Particularly interesting is the question concerning the connection between the student revolts of 1968 and the anti-NPP protest of the 1970s. This is not difficult to answer on the basis of previous research. In the U.S., the continuity was embodied in the figure of Barry Commoner. Even in Germany there are many personal continuities, but as a general rule, the 68ers first became interested in criticism of nuclear energy *after* the manifestation of broad-based mass protest, and initially had to ground this effort theoretically, insofar as it at first sprang only from a spontaneous emotional sympathy for protestors. Amongst the neo-Marxists of the New Left, and not only amongst them, the outlook was widespread that the progress of productive forces furthers societal progress, and this progress is grounded in a growing scientization of industry and technology. This theory was therefore popular amongst intellectuals in the East and the West, if nothing else because it flatteringly credited them with a pioneering role.

The philosopher Ernst Bloch—in 1968 a mentor of the student leader Rudi Dutschke—had in his main work *The Principle of Hope* gushed about the blessings of nuclear energy with almost childlike enthusiasm and had attacked the (supposed) “late bourgeois enmity toward technology” for impeding the leap into the future. He even dreamed of melting the polar ice with nuclear heat and transforming the arctic

coasts into blooming landscapes! This utopia did not stem from him, but rather could be found earlier with the biologist Julian Huxley, a founding father of UNESCO and of the IUCN (International Union for the Conservation of Nature). Today, in light of anxieties about global warming and the rise of sea levels, the blindness of such highly educated people seems incomprehensible. The use of Max Weber's concept of charisma is likely necessary in order to explain it. Nuclear technology was until then an element of a charismatic vision of the future, and whoever was filled with this enthusiasm wiped these concerns aside as trivial and fit for narrow minds alone. However, charisma is by nature transitory, in this case having already died off by the time nuclear energy turned from vision into reality—that is, into a concrete reality, and by that right a costly and risky one.

But that first came about after 1968. On the level of discourse there is no obvious path leading from the student revolts to anti-NPP protest. But that could also be evidence that one shouldn't push the boundaries of discourse theory too far, as has become fashionable in the last twenty years. For on other levels there are evident continuities, namely on that of participating persons and of styles of action. The style of the great demonstrations and takeovers, which brought on confrontations with the police, stems from 1968, just as pronounced friend-enemy thinking and the construction of *Feindbilder* [portraits of the enemy] in the form of Big Capital, state bureaucracy, and scientific authority.

All the same, it's not easy to imagine the U-turn of the Left against atomic power! It appears that the international context was highly significant around 1970. In Germany, nature and environmental protection had in and of themselves—even if without the concept of the “environment”—a long tradition; they are nonetheless seen up to the present by leftist intellectuals as more or less dubious, if not outright contaminated by National Socialism. Even the highly well-informed *Der Spiegel* treated environmental protection in 1970 as a theme that was completely new to Germans. With the American Earth Day and the founding of environmental politics in the U.S., the prospect of an environmental summit in Stockholm in 1972, the European Year of Environmental Protection, and worldwide many other simultaneous events, nature and environmental protection received an international, “progressive” gloss. A truly old concern became fresh and new. This was what first made the influx of the New Left into environmental initiatives possible and turned environmental protection into a movement. On the basis of no other object could the style of aggressive mass demonstrations become as out of hand as with nuclear construction projects. Later environmental themes no longer yielded ideal targets of this sort.

An explanatory attempt on the level of the problem of elites

The rebellious students of 1968 struggled against the “Establishment” and ordinarily connected this with the notion that the German establishment was especially massive and powerful and demonstrated a special capacity for brutality in the world wars and in the Nazi dictatorship. Even the five-volume *History of German Society* from Hans-Ulrich Wehler, the most influential and most discussed presentation of German history of the 19th and 20th centuries, had an overall tendency to stress the

continuity and consistency of German elites. In international comparison, the question nonetheless presents itself as to what exactly is special about Germany. Even the older democracies are oligarchies when observed from a distance and are typically characterized by a continuity of social elites through political ruptures.

I would presume that Germany in its most recent history, as the inheritor of a history of smaller states going back many centuries, possessed a homogeneous elite to an even lesser extent than France and Great Britain. That brought advantages and disadvantages with it. In a nation with a homogeneous elite, the emergence of a figure like Adolf Hitler as an all-powerful dictator would be difficult to imagine. The relative heterogeneity of the German elite seems to me, however, to be an essential precondition for the nuclear energy controversy becoming longer and more vehement than elsewhere. A clear line is missing here.

In Austria, Switzerland, and in the Scandinavian countries the political elite simply let nuclear power projects die, at least at first, because they became manifestly unpopular. In Germany, on the other hand, there was a strong, highly enthusiastic nuclear “community”⁴ that wouldn’t give up so easily. But there was simply no well-equipped, centrally controlled military-scientific-industrial complex like there was in the other nuclear powers. The opponents of nuclear power plants have often seen the German Atomic Commission (DATK) as a Moloch of “Stamokamp” [“Staatsmonopolktapitalismus,” state monopoly capitalism]. But as I came in contact with the files of the Commission, I realized that this picture was entirely false: the DATK was to a significant extent a poorly organized and badly informed conglomeration of bodies, which was comprised of unsalaried members and over time became less and less capable of controlling the development of nuclear energy. Within the responsible judicial bodies there developed a latent—if also seldom recognized by opponents of nuclear power—brake potential, since the “Würgassen ruling” of the federal court in 1972 interpreted federal nuclear law as providing for the priority of security over economic interests. German federalism hindered the emergence of effective pro-nuclear energy politics in Bonn, as the atomic “community”⁵ demanded more and more shrilly under the pressure of controversy. Rudolf Schulten, the discoverer of the high temperature reactor that bears his name, explained with a sigh in a public discussion with me at the University of Bielefeld in 1987 that in the development of nuclear energy in Germany “everything went against the will of all.” Out of an uncoordinated collusion of divergent interests, what happened is what no one originally wanted. In fact, the bulk of the energy economy had no real need for nuclear power plants at all. When they finally condescended to making them, they ordered American light-water reactors and thereby dashed the original nuclear plans crafted in Bonn. The RWE indeed built the Brüter breeding reactor at Kalkar, but for reasons of cost spoiled the full brute effect and thereby the charismatic quality of renewable energy—upon which the erstwhile “Brüter pope” Häfele finally conceded to the critics that Kalkar was unnecessary as well, to which *Die Zeit* commented: “The father of the Brüter is also becoming its killer.” And that wasn’t the only example of this sort. Many NPP opponents felt that they were stepping on a crumbling front in spite of the difficulty of the conflict. They activated a latent disinterest on the part of

energy economics for Brütters and reprocessing. In the play struggle “ecology against economy,” we must not forget that the environmental movement, in order to be successful, is dependent on latent convergences with economic interests. ■

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- 1 “The Profile of Recent Environmental Protest in Germany” (1999). Paper presented for the workshop on “Environmental Protest in Comparative Perspective” at the 27th Joint Sessions of ECPR Workshops in Mannheim, March 26–31.
- 2 *Translator’s note:* the “forest death” is to be discussed later in the article (section 4.1).
- 3 *Translator’s note:* Radkau uses the English term here and capitalizes both words.
- 4 *Translator’s note:* Radkau uses the English word.
- 5 *Translator’s note:* again, Radkau uses the English word here.