

Industry's Uneasy Relationship With Nature

by James Sievert

There is an inextinguishable tension and insecurity in industry's relationship with nature. On the one hand, technology and capital have given industry an illusion of illimitability in the exploitation and manipulation of nature for profit. Nature waits passively as industry asserts its will. At the same time, however, industry finds it crucial to demonstrate the alleged similarities between the workings of nature and the workings of industry. Industrial spokesmen portray pollution as a basic act to both nature and industry. In the 1960s, for example, the Ford Motor Company's "Six Myths About Air Pollution" was an obligatory handout at dealer showrooms. The booklet paid homage to the wondrous works of nature and man. Each had created the towering cathedrals of Sequoia National Park and Chartres respectively. But in creating, both nature and man give off effluents, an unavoidable, "natural" occurrence, Ford claimed. The booklet asserted, moreover, that volcanoes, geothermal activity, and forest fires caused by lightning produced much more air pollution than automobiles did. (Incidentally, Ronald Reagan's misinformational one-liners included the one about more environmental toxins being emitted by nature than by every industrial facility on the planet). Nature, the great benefactor, was also the great polluter. Industry, in a sublime act of artistic mimesis, could only follow nature's laws and act accordingly, and therefore pollute. However, the Ford Motor Company's wistful paean to nature/industry solidarity betrays a deeper anxiety over the unnaturalness of industrial excess. In psychoanalytic terms, for example, industry's overdetermination to speak with nature (the other) — to insist on their similarities and compatibilities — "is equivalent to not speaking the truth: it is (breaking) the sword of speech, (coming) to terms with the 'counterpart' instead of fighting with him; therefore, in its sharing of bread rather than death with him, it is to lie, to hide the nocturnal truth of desire" (Borch-Jacobsen, 1991: 103).

Modernization and technology have given industry the sense of limitless possibilities. But the accompanying societal and environmental upheavals of modernity have created an underlying anxiety at having transgressed limits. Hence industry's claim that it is merely acting as its counterpart nature does, a tenuous justification that has a pedigree much earlier than Ford's 1960s panegyric to the automobile and nature. One can look to nineteenth-century Germany for the earliest examples of the deliberate linking of the works of industry and nature. Historically, Germany experienced modernity in ways distinctively more shattering than other European countries. The industrial statistics tell a bookful. In the 1870s Britain produced four times as much iron as Germany, and twice as much steel. By 1914 Germany's steel production equaled that of Britain, France, and Russia combined. British coal consumption doubled between 1861 and 1913, while in the same period Germany's increased thirteen and one-half times. In electrical manufacturing the value of German production was twice that of Britain's in 1913, and ten times that of France. As for demographics, in 1870 Germany's population was two-thirds rural. By 1914 it was two-

thirds urban (Eksteins, 1989: 110-111). Advances in science and technology spearheaded the unprecedented growth. The chemical industry in Germany — especially with the discovery that artificial dyes could be manufactured out of a heretofore useless product, coal tar — was at the forefront of a new relationship with nature. Carl Duisberg, the energetic and influential head of Bayer Co., proclaimed at the turn of the century that “the manufacture of dyes has been taken out of the hands of nature and given to chemists. The radiant shine of their products outdoes anything that nature can offer” (Andersen and Spelsberg, 1990: 11). German chemists were not only victorious over nature, however. Artificially produced dyes from German factories also destroyed the Anglo-Indian trade in indigo, and the mostly French-dominated trade in madder for red dyes. The tribute, as the Germans called it, that had to be paid to foreign, less inclement climates, had ended. If nature would not cooperate with Germany, chemists could bypass nature in the laboratory and factory.

In the late nineteenth and early twentieth century, with their various titles of *Verein*, *Bund*, or *Verband*, many industrial and technical interest groups had formed in Germany to declare not only industry's victory over nature, but industry's affinities with nature as well.¹ Staffed by the kinds of techno-specialists whom Dilthey and Weber had decried in their lamentations against the specialization of European society and work, these groups differed from today's lobbies perhaps only in scale. Specialists wrote books under hire for these various interest groups. Often scientists or professors from universities spoke out on behalf of one group's or another's message. Kenneth Barkin noted this trend in his book on German industrialization: “around the turn of the century it became increasingly common for professors to abandon their lectures for appearances before nonacademic audiences” (Barkin, 1970: 10).

A particularly revealing document is *The Pollution of Waterways*, a book prepared in 1898 on behalf of the river commission of the Association for the Promotion of the Interests of the German Chemical Industry (*Der Verein zur Wahrung der Interessen der chemischen Industrie Deutschlands*). Contributors included hundreds of scientists, with the book's final shape coming from the pen of a lecturer from the Royal Technical College in Berlin, Konrad Wilhelm Jurisch. The opening page of the book contains its statement of purpose: “The most comprehensive, clearly-stated, and objective portrayal possible of the problems relating to the disposal of factory waste water, and especially to show the role that rivers play in this” (Jurisch, 1898: i).

The tone of the book is set by the following three themes: (1) by scientific analysis of Germany's rivers one can determine their capacity for self-cleaning; (2) because this self-cleaning is a natural act, the discharging of effluents into rivers is itself a natural act; (3) any common sense reader, though he may lack the scientific and technical skills, can also come to this conclusion. Thus after twenty pages of an impressive array of figures regarding the major and minor rivers of Germany, including data on velocity, fall per meter, and volume of water at various points along the rivers, the average reader no longer need have any doubts about the necessity in the use of waterways as industrial canals: “Now that necessity and purposefulness of using rivers for the discharge of industrial waste has been recognized as a natural and irrefutable truth, there still remains the fact that the form in which this discharge to the rivers takes place can vary greatly and must be determined in each individual case” (Jurisch, 1898: 77).

What, then, is that form to be? With major rivers such as the Rhine, it is merely a case of discharging the effluents at the right time and place for the river's self-cleaning quality to take effect. In the case of smaller rivers, “a fair balance must be maintained between industrial interests and fishing interests,” which must be done in consideration of “the general well-being of the people as a whole.” Well-being of the people is, of

¹ There was even a group with this ominous name: the Commission to Do Away with the Abuses of the Regional Culture Protection Movement.

course, a code for the unfettered growth of industry, for there was little doubt in Wilhelmine Germany that well-being meant building the fleet, overcoming Great Britain in steel output, and setting up overseas colonies — in short, finding a place in the sun. Klaus-Georg Wey has noted, regarding the chemical industry's claim for the importance of creating economic wealth, that "the government has seldom denied the claim that an industrial concern's capacity for production must be maintained at all costs" (Wey 1982: 39).

One of the more interesting aspects of *The Pollution of Waterways* is its attempt to portray industry as an essential, natural part of the environment. This need for the chemical industry to present itself in such a way belies, however, the industry's own underlying fear that they were not being perceived as natural and essential by people who lived along waters polluted by chemical waste. At one point, for example, it is claimed that: "Just like a living being, the (chemical) industry produces a quantity of waste material which must be disposed of one way or another in order to create space for new life to emerge" (Jurisch, 1898: 57). By putting the issue in these terms, the chemical industry was able to disavow responsibility for its effluents, since, as a living being, it was also endowed with not only the right, but the biological necessity, to produce waste. How that waste was to be disposed of mattered little — "one way or another." What mattered was getting rid of it so that the inexorable evolution of life could push on. In his book, *The Social Creation of Nature*, Neil Evernden (1992) has noted how the position of the polluter is always considered untenable because the polluter has clearly done something "unnatural." "The polluter is condemned not only for a physical pollution but also, implicitly, for a moral pollution that is revealed by the physical pollution" (Evernden, 1992: 7). The German chemical industry attempted, in a clever move, to show how "natural" excrement is.

Not only, however, did the chemical industry portray itself as a living being with biological rights, but also as the healer of wounded rivers. Through chemical reactions with organic matters in the rivers, the chemical pollutants could actually have a beneficial effect. For example, the chemical industry's report stated that the pollution of the Main River caused by Frankfurt's sewage canals "would be much more pronounced were the Main not fortunate enough to receive the effluents from a whole series of factories, the mineral content of whose waste waters have a disinfecting effect" (Jurisch, 1898: 79).

These claims by the chemical industry form part of a larger circle of ideas that gripped the German scientific, intellectual, and industrial communities in the late nineteenth and early twentieth century, arguments having much to do with the German perception of society and nature. One of those arguments was the debate carried out on the topic of *Kultur* and *Zivilisation*, with *Kultur* representative of the German tradition of the soil, forest, family, and *Volk*, while *Zivilisation* was what the despised Enlightenment had brought to Germany in the form of reason, positivism, and scientific thought. Related to this *Kultur-Zivilisation* dichotomy was *Der Streit um die Technik* (the debate about technology) which engaged many scientists, engineers, and intellectuals. This controversy centered around the notion of whether technology belonged to *Kultur*, to the artisan traditions of handicraft and guilds that existed before the capitalistic alienation and division of labor, or whether it belonged to *Zivilisation*, that is, to the realm of men using scientific reason to build machines that harnessed nature and saved labor.

We can see some of the ambivalence and division within an industry such as the chemical industry, which naturally had to use capitalistic practices such as cut-throat competition — and then cartelization in the form of I. G. Farben — while at the same time make an appeal to those who saw *Technik* as an artistic enterprise that only became soiled in the hands of greedy industrialists. After all, the German chemical industry was the world model for the synthesis of capitalism and science, business and technology. "The large factories have well-equipped and often model laboratories for

scientific research in which it is a pleasure to work. Nowhere is the alliance between science and technology so intimate as in Germany, and no one doubts this accounts for the pre-eminence of the German chemical industry" (Henderson, 1975: 186). In its report, the Association for the Promotion of the Interests of the German Chemical Industry approached this topic cautiously. In one paragraph, for example, the link is made between industry and *Zivilisation*, only to be followed in the next paragraph by the *Kultur*-affirming notion that the chemical industry is a living body that springs, in a Bakhtinian way, not from the upper, but the lower portions of the body. What could be more human, more in touch with the soul and *Kultur*, than an entity that produces, just like a human, excrement?

The level of industrial development is such an important component in a people's level of *Zivilisation* that one can, with the help of certain elements, reckon the average of the one from the other. Industry and *Zivilisation* have a constant effect on each other. Were they divided, a high level of achievement would be inconceivable from either one.

But in addition, and just like a living being, industry produces a quantity of waste material which must be disposed of one way or another in order to create space for new life to emerge (Jurisch, 1898: 57).

This passage clearly represents an attempt to reconcile not only the extreme economic antagonisms of a rapidly industrializing Germany, but also an attempt to deflect resentment against industrialization. Here *Zivilisation* (industry) and *Kultur* (technology) are not shown as two antagonistic elements, but as a harmonious coming together of *Geist* (mind) and *Leib* (body). This was important inasmuch as many supporters of technological invention wanted to be part of only one side of the equation as "engineers sought to convince themselves that they belonged to the *Kulturnation* (Herf, 1984: 152). In other words, "technology emanated from the deepest impulses of German *Kultur* and not from the disenchanting materialism of Western *Zivilisation* (Herf, 1984: 155).

Thus many scientists and engineers, as part of the *Kulturnation*, saw a link to the Romantic tradition that called for an escape not only backward into the past but, more importantly, inward into the self. Technologists, therefore, could become the consummate *unpolitisch* Germans, working in their clean white wardrobe in the sterilized laboratory, cut off from the mundane occupations of the real world. Dudley Young has described the Good Scientist of the nineteenth century in monastic terms:

Only scientists are capable of understanding (reality), because they are plain men, with no axe to grind, who discover the objective facts in the lab by suppressing their subjective prejudices and fantasies in the almost monastic rigor of experiment. Such men are indeed the true leaders of the culture: unlike poets and politicians who deal in rhetoric, dreams, and prejudice (often for their own profit) scientists renounce all private and egotistical interest as they submit themselves to the facts as given, armed only with "clear and distinct ideas" as Descartes said, sufficient theory (not fiction) to make the facts visible (Young, 1991: 31-32).

For the technologist, the notion of an inner contemplation through observing nature as matter-in-motion was the modern escape from politics into self. But if we look at German inwardness (*Innerlichkeit*) not only as an offshoot of pietism and Romanticism, but as a repressed reaction against authoritarianism, then the engineers' and chemists' withdrawal into the laboratory was not only a retreat inward (*nach innen*) but a submission to the new authority (*Obrigkeit*) — technology. Technology filled "the world with clear, distinct forms that composed a dike against the potential chaos and formlessness of modern liberal politics and culture" (Herf, 1984: 167). Thus, like all authority, technology was at the same time provider and oppressor.

More skeptical thinkers might think it absurd to expect engineers to denounce technology, for it was this very technology which not only provided them with a more than adequate livelihood, but with an outlet for their needs to tinker as well — the essence of *homo faber*. In the increasingly alienated society of the late nineteenth century, the great luck to have a job that paid well and gave some sense of personal satisfaction was not to be given up easily. It was only too simple for engineers to shift the question of technology into an area with which it had nothing to do — the question of *Kultur* — in order to mystify it. "The longing for self-identification, the individual's desire to fulfill his capacities, ironically heightened by the process of alienation, was accompanied by the contradictory urge to belong to something greater than oneself" (Zimmerman, 1990: 8). Engineers and technologists were some of the few who were able to fulfill their capacities and at the same time ascribe their strivings to a greater goal — *Kultur*.

If, then, engineers and chemists "hoped to lift technology from the alien world of *Zivilisation* to the familiar world of *Kultur*," (Herf, 1984: 161) thereby avoiding such nasty questions as environmental pollution, or reifying such questions, the chemical industry made it clear that its interests would have to take precedence over the environment. "A weighing of interests is imperative, but when two opposing interests cannot be reconciled the greater economic interest must be protected" (Jurisch, 1898: 108). Thus the seamless fusion of industry and technology which occurred in Germany during the great industrial spurt of the late nineteenth century was made possible by industry's justifying its growth as being for the good of the nation, while technologists retreated to their laboratories, confident that "technology had an essence, a life of its own that demonstrated the fulfillment of natural laws" (Herf, 1984: 171).

Natural laws obtained to the chemical industry as well. These laws, however, had more than just the philosophical underpinnings of the technologists; they also mirrored the kind of nationalistic dogma omnipresent in Wilhelmine Germany. The Rhine, like all good German subjects, donated freely its gifts to the nation while enduring burdens. Looking back with nostalgia at the early years of the chemical industry, a Bayer company history personifies the rivers of the Rhine-Main area with a slave mentality: "The rivers carry coal, iron, limestone, and other raw materials. They donate the water needed by industry, and carry away the waste" (Pinnow, 1938: 9).

It is clear from closer examination of this publication from the Association for the Promotion of the Interests of the German Chemical Industry that the industry concentrated its efforts at promoting a pro-industry point of view vis-à-vis the Rhine on several fronts. First, the publication, with over half of its pages dedicated to scientific examination of water flows and chemical content analyses of water samples, attempted to put the issue at a level of specialization beyond the reach of the common person and common sense. For example, the simple question of whether there actually exists anywhere such a thing as "clean water" was now open to doubt. "What is clean river water, and does there actually exist a clean river?" This plays directly into the second point, namely that the pollution of water is as natural an act as the human act of excreting. And the third and most important rhetorical effort was to connect *Zivilisation* and *Kultur*, business and technology, industry and nature, in a way that kept the notion of water pollution at a level of discussion that could be framed scientifically and culturally, but not legally. This was crucial since only through the legal sanctions of a nationwide law against the discharge of wastes into rivers could the chemical industry, in its own eyes, suffer a setback. As Carl Duisberg noted emphatically in 1912: "Heaven save us from a nationwide water pollution control act." (Wey, 1982: 39) Duisberg had little to fear, however, as the federal system of the German Reich gave an abundance of power to the various *Länder* that made up the Reich. The sharing of power, of course, made it all but impossible to implement a

nationwide law regarding the discharge of pollutants into waterways.² "Tardiness in developing legal norms and then in putting them into practice is for the most part a direct result of: (1) the special legal and constitutional situation of the German state; and (2) the special German political culture with its until quite recently weak parliamentary outlook and the dominance of the bureaucracy and the heavy influence of economic interest groups" (Wey, 1982: 230). Thus the chemical industry and other industries were able to operate freely in areas like the Ruhr basin, turning rivers such as the Emscher into company canals for the unloading of wastes. The Ruhr basin effectively developed into an industrial preserve.

A careful study of the origins of industry's angst toward nature, its desire to speak for the other — nature — and thus repress the truth, opens a new path for decoding industry's account of its relationship with nature. In the Exxon Corporation's recent legal battle in Alaska courts over the *Exxon Valdez* oil spill of 1989, Exxon scientists testified to the natural pollution of some of the beaches in Prince William Sound by oil seepage. In its defense at the trial, Exxon showed "a videotape of natural oil seeps . . . to argue that oil in the marine environment was not from the grounded (*Exxon Valdez*) tanker." Studies, according to Exxon, proclaimed Prince William Sound clean and healthy, with oil in the environment coming from natural seeps, not from the Exxon tanker. Exxon's lawyers identified oil seepage at Cape Yakataga, east of Prince William Sound, on the western coast of Cook Inlet and on the Alaska Peninsula west of Kodiak Island, where the "natural release of oil is continuous and significant."³ In their defense of Exxon, the company's lawyers and scientists revealed the underlying angst long typical in industry's forced portrayal of similarities to the natural world: nature, in emitting oil through seeps, was acting like industry — and the *Exxon Valdez*, in emitting 11 million gallons of oil into Alaskan waters, was acting like nature.

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² When it came to economic matters, however, German government moved rapidly: "One aspect of Germany's rapid economic growth in the last quarter of the nineteenth century was the significant role played by the Reich, the Federal states, and the provincial and municipal authorities in promoting the expansion of industry, agriculture, forestry and commerce." (Henderson, 1975: 176)

³ "Exxon Argues Environment Healed from Spill," Reuters News Service, June 30, 1994.

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