1 Organizations in World Risk Society

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Today's critical debate over—and, sometimes, severe doubts about—risk-management practices ironically follow in the wake of massive endeavors to control and rein in the risks associated with industrialization. Accidents and unforeseen side effects time and again belied the promises of risk management and damage control. The hidden risks of risk models lie under the surface of controllability. Because modern risk management is often designed to maximize predictability, it frequently underestimates the occurrence of unexpected and unlikely—yet nonetheless possible—events, in terms of both the frequency and the severity of hazards. This unfortunate combination is due to the "uncertainty trap" in which many industries are caught: Industries have to be reasonably optimistic so as to base their decisions on rational, probabilistic criteria. Thus they have to look at the most—sometimes maybe the worst—*probable* risk, but not at the worst *possible* risk. The latter perspective, however, characterizes much of the late modern public attitude toward business and science. It is based on a "culture of uncertainty." In order to understand the consequences of this emerging global culture of uncertainty, it is necessary to develop a broader understanding of risk and risk management within the context of social and political theory.

In this chapter, we discuss the emergence of a culture of uncertainty and its consequences for organizations against the backdrop of the theory of risk society. We shall proceed as follows: (1) We will discuss the transformation of late modern society into a risk society—that is, a society increasingly confronted with the undesired side effects of successful modernization. (2) In the process of this transformation, the modern concept of "calculable risk" comes under pressure by the reemergence of

uncontrollable uncertainties that are often due to scientific and technological innovations. (3) That has profound implications for organizations which have hitherto played a significant role both as sources of acceptable entrepreneurial risks and as "trustees" in charge of managing collective risks. (4) In contrast to the past, public scrutiny of organizational decisions is not confined to the national domain anymore. Over recent years, the debate about the uncontrollable risks of industrialization has galvanized a global public that casts a critical eye on technological developments and the benefits of innovation and scientific progress. (5) As a consequence, organizations as actors in the transnational realm face an increasing "legitimacy gap." They make decisions whose consequences transcend any particular time or place—and thereby the regulatory apparatus of the state. (6) It is unlikely that the legitimacy gap can be closed by the development of more sophisticated risk management practices. Rather, organizations have to broaden their own understanding of risk so as to include fundamental uncertainties as part of both their decision-making and their relationships with the public.

Modern Society as a Risk Society

Modern society has become a risk society in the sense that it is increasingly occupied with debating, preventing, and managing risks that it has itself produced.[1] The risks of risk society are neither the results of external, natural forces nor of deviant behavior, but of the societal, usually technology-based pursuit of legitimate and valued objectives. Other hazards and dramas of human life—such as plagues, famines, and natural disasters—may sometimes have consequences just as disastrous as modern megatechnologies. Yet they differ essentially from the "risks" of risk society since they are not based on decisions, or, more specifically, decisions that focus on techno-economic advantages and opportunities and accept hazards as the dark side of progress. Risks therefore presume industrial—that is, techno-economic—decisions and considerations of utility. They differ from other hazards and dangers by their "normal," "peaceful," and often systematic origin in the centers of rationality and prosperity. They differ from preindustrial natural disasters by their origin in decision-making, which is of course primarily conducted by organizations and corporate actors and only rarely by individuals.

The association of risk with decision-making has important consequences: Preindustrial hazards, no matter how large and devastating, were "strokes of fate" raining down on humankind from "outside" and attributable to the external world. Blame and accusations were of course formulated, but they were directed against agencies that could hardly be held responsible. They were thus in the broadest sense "religiously motivated" and not—like industrial risks—politically charged. For with the origin of

industrial risks in decision-making the problem of social accountability and responsibility irrevocably arises, even in those areas where the prevailing rules of science and law permit accountability only in exceptional cases. People, firms, state agencies, and politicians are responsible for industrial risks. The recognized social roots of risks make it nigh impossible to externalize the problem of accountability.

Therefore, it is not the number of dead and wounded and not the financial damage either, but rather a social feature that makes the hazards of mega-technology a political issue: their ultimate origin in decision-making. The question remains, however: Have we not witnessed a period of continual growth in calculability and precaution in dealing with industrially produced insecurities and destruction in the past two hundred years? To be sure, the institutional history of industrial society also is the history of the various regimes for dealing with industrially produced risks and insecurities (Beck, 1996a; Bernstein, 1996; Bonß, 1995; Ericson et al., 2003; Evers & Nowotny, 1987; Ewald, 1986; Lau, 1989). The idea of reacting to the uncertainties of new markets or new technologies with collective agreements—insurance contracts, for instance, which allow the individual person or organization to trade in a small regular premium against the potential losses in cases of dramatic damage—is not particularly new. Its origins go back to the beginnings of trade and intercontinental navigation. But with the growth of industrial capitalism, insurance was continually perfected and expanded into nearly all problem areas of social action. Consequences that at first affected only the individual have become "risks"—systematically caused, statistically describable and thus predictable types of events—which can therefore also be subjected to collective rules of recognition, compensation, and avoidance.

In order to grasp the dialectics of endangerment and insurance, we must not forget that the term *risk* has two radically different meanings. It applies in the first place to a world governed entirely by the laws of probability, in which everything is measurable and calculable. But the word is also commonly used to refer to nonquantitative uncertainties, to "risks that cannot be known."[2] When we speak about "risk society," it is in this latter sense of manufactured uncertainties. These uncertainties, enforced by rapid technological innovations and accelerated societal responses, are creating a fundamentally new global risk landscape. It is characterized by a "culture of uncertainty" that picks up and amplifies the shortcomings of the industrial paradigm of calculable risk.[3] For society as a whole, and for industrial enterprises in particular, that leads to a precarious erosion of the securities hitherto afforded by the legitimate use of expert knowledge to define risks and their acceptability. For a long time, the calculus of risk has provided a sound and socially appreciated connection between the physical, engineering, and social sciences. It can be applied not only to completely disparate phenomena in health management—from the risks of smoking to those of nuclear power—but also to economic risks as well as risks of old age, unemployment and underemployment, traffic accidents, certain phases of life, and so

forth. In addition, it permits a type of "technological moralization" that no longer needs to employ moral and ethical imperatives directly.

The triumph of the calculus of risks would probably not have been possible if fundamental advantages were not tied to it (see Beck, 1999c, p. 51f.). The first of these lies in the fact that calculable risks open the opportunity to "deindividualize" the danger of potential damages. Risks are then revealed as systematic events, which are accordingly in need of individual insurance and general political regulation. In both cases the individual exposition to dangers is mollified by collective provisions. Through the statistical description of risks (e.g., in the form of accident probabilities) the blinkers of individualization drop off. A field for corresponding political action is opened up: Accidents on the job, for instance, are not blamed on those whose health they have already ruined anyway, but are stripped of their individual origin and related instead to the plant organization, the lack of precautions, and so on. A second advantage is that insurance payments paid on a no-fault basis (setting aside the extreme cases of gross negligence or intentional damage) make it unnecessary to identify cause and perpetrator in too much detail. In that way, legal battles over causation become unnecessary and moral outrage is moderated. Instead, an incentive for prevention is created for businesses, in proportion to the magnitude of the insurance costs—or perhaps not.

The important social function of the calculus of risk, then, is to make the industrial system capable of dealing with its own unforeseeable future. The calculus of risk, protection by insurance liability laws, and other devices promise what is basically impossible: Future events become the object of current action—of prevention, compensation, or precautionary after-care. As François Ewald (1986) has shown, the major innovation of the calculus of risk lies in making the incalculable calculable, with the help of accident statistics, through generalized settlement formulae as well as through the generalized exchange principle of "money for damages." In this way, a system of norms for social accountability, compensation, and precautions—though controversial in its details—creates present security in the face of an open uncertain future. Modernity, which brings uncertainty to every niche of existence, finds its counterprinciple in a *social compact against industrially produced hazards and damages,* stitched together out of public and private insurance agreements and thus activating and renewing *trust* in corporations and government.

From Calculable Risk to Uncertainty

The transition from industrial to risk society is deeply intertwined with the waxing and waning of trust in calculable risk. There are two different stages of risk society. In the *first* stage we see a "residual risk culture": the

belief that risk-taking is necessary to realize opportunities and that the potential hazards will be cured by further progress. In this stage, there is faith that the consequences of industrialism can be tackled in the same way they have been dealt with in the past: by developing more efficient markets, better technology, and better rules of law. In this context, people who point to systemic risks are usually regarded as scaremongers who just do not get the facts right. But during this stage, global risk factors are constantly piling up. The fact that environmental problems go largely unnoticed simply helps to exacerbate them. Eastern Europe under Communism displays an informative case of how the denial of environmental problems can lead to environmental disaster.

Three factors contribute to the largely unnoticed production of risk factors. First are the metanorms of risk definition, particularly the legal norms of how to attribute liability—that is, causes and consequences, under conditions of high complexity and contingency. If it is necessary to name one and only one actor, in the overwhelming majority of cases *no* actor can be named. This is exacerbated by the fact that, second, a significant number of technologically induced hazards, such as those associated with chemical pollution, atomic radiation, and GM organisms, are characterized by an inaccessibility to the human senses. They operate outside the capacity of (unaided) human perception. Everyday life is "blind" in relation to hazards that threaten life and thus depends on experts and counterexperts. Not only the potential harm but this *"expropriation of the senses"* by global risks makes life insecure. Third, then, there is a significant interrelationship between *ignoring* a risk that cannot be attributed according to the metanorms of risk definition in law and science and *enforcing* risk production as a consequence of industrial action and production.

It is only in the *second* stage in the emergence of risk society that the growth of global risk factors enters public discourse and everyday life. At this stage, risk society becomes reflexive, and thus changes its political dynamics. Everyday life becomes significantly conditioned by risk recognition and response, from the food we eat to the business decisions we make. Once the link between the definition of risk and the breakdown of markets (and sometimes the emergence of new markets) is recognized, a social learning mechanism unfolds. It is an emergent structure of innovation that affects the economy, politics, and culture. Early risk society thus has no significant consequences for the established coalition of industry, science, and state administration that oversaw the development of modern industrial society. In the second stage, however, industrial enterprises cannot count on state administrations in the same way. They cannot count on either the lawmakers or the judiciary to continue to base their judgments on the assumption of continual progress. It is not merely a matter of the democratic process splitting the old coalition into separate interest groups, but a conflict of social paradigms: different principles of society, different principles of knowledge, and different principles of experience.

During the transition, the new risk paradigm of uncertainty is gradually entrenched and professionalized. It is embodied in new industries and new experts. There arises a fundamental split between those who do not believe anything should be changed in our relation to risk, that we should continue on as we always have, and those who now perceive the situation in the context of much wider risk horizons.

In both stages there are different paradoxes involved. In the first, dominated by a residual risk culture, the ignorance of the globalization of risk increases the globalization of risk. In addition, scientists allow themselves to get caught in a safety trap. When they are confronted with skepticism and what they call "irrationality," they promise—as they did in the case of genetic engineering—that everything is "absolutely" safe, controllable, and reversible. The consequence of such absolute claims is that every new risk and new accident shakes the foundations of an inalienable right to safety that seems to have been promised. In the second stage, characterized by a culture of uncertainty, the safety trap takes a different form. Instead of untenable promises of safety, widespread distrust prevails, and consequently, intense debates about and scrutiny of new technologies are the order of the day. The acceptance of every new technology or product is increasingly determined by risk considerations. But since the whole premise of this new attitude is that uncertainty is ineradicable, carrying out this procedure in full would completely stifle innovation. If the world is perceived only in terms of risks, then nobody can act. Yet as Wildavsky aptly put it, "no risk is the highest risk of all" (Wildavsky, 1979). The concept of uncertain risk only says what should *not* be done. It does not address what should or could be done.

There is no safety in calculable risk, but giving priority to uncertainty does not guarantee safety either. These impasses of both a residual-risk logic and the culture of uncertainty show that we cannot expect a straightforward solution to the problems of risk society. Through a host of challenges and uncertainties with which we are concerned today—nuclear power, many types of chemical and biotechnological production, as well as the continuing and threatening ecological destruction—the foundations of the established risk logic are being subverted or suspended.

The emergence of risk society is emblematic of the process of *reflexive modernization,* which entails the self-confrontation of modernity with the side effects of modernization (Beck et al., 2003; Beck et al., 1994; Benton, 2000). The risks of risk society are not external threats that call for new technologies and better knowledge. They are side effects of new technologies and of the growth of scientific knowledge. Accordingly, the problem of modernity has moved from solving externally imposed problems to solving self-produced problems. The fact that modernity and its very institutions are at the core of many of the most pressing problems such as the ecological crisis raises doubts as to whether the *institutions* of modernity are capable of solving the *problems* of modernity. This marks the

break with "linear" modernization: In reflexive modernization, the very *method* of problem-solving itself becomes problematic.

From Trustee to Suspect: Organizations in Risk Society

Risk refers not to "objective" probabilities but to the "subjective" expectation of possible damage related to one's decisions. Although knowing the probabilities can serve to legitimize risk-taking as such, it cannot eliminate the necessity of decision-making. The evaluation of a risky choice depends on the realization of uncertain outcomes *in the future* and is thus only possible after the fact. Risk is the possibility of future damage that is attributed to a *decision*—that is, to causes internal to a person, an organization, or society. Danger, in contrast, is the possibility of future damage that is attributed to factors over which we have no control.[4] Thus, an earthquake would usually qualify as a danger, whereas a skiing accident would be regarded as a consequence of a risk that a person undertook. If we distinguish between danger and risk, we can conclude that risk society may well be less "dangerous" but more "risky" than any other kind of society—precisely because *dangers* are increasingly turned into *risks.*

Organizations relying on technology have been important vehicles for the expansion of risk and uncertainty in modern society. Technology in particular plays a crucial role in transforming dangers into risks. Many events formerly regarded as beyond the scope of human influence and intervention are now routinely a matter of human control by virtue of technology. To use a very simple but convenient example (Luhmann, 1986): If one leaves the house, one always runs the "danger" of getting wet. It is a danger since rain is not, in our society, attributed to anyone's decision.[5] Yet the availability of a specific technology—the umbrella—can transform rain from being a danger to being a risk. That is, once one has the option of taking along an umbrella, the question of whether or not to get wet depends on a *decision:* to use the umbrella or not. In many areas, technology has thus greatly extended the scope of human decision-making—and accordingly the possibility of risk and error.

Modern organizations are also an important factor in the production of risk through technology in a more general sense (Perrow, 1984; Short & Clarke, 1992). Much more than individuals, who are not normally required to reconstruct all of their actions as the outcome of conscious decision-making, modern organizations are social systems of decision-making—from the decision to hire someone as an employee to the decision to file for bankruptcy (Baecker, 1999; Luhmann, 2000). Most importantly, organizing involves decisions that create premises for further decisions: decisions about personnel, hierarchies, and rules. Organizations

thus have a deep affinity to risk. They construct themselves (and their environment) as the outcome of decisions, because whatever happens in an organization can and must be interpreted as a decision. Modern technology and organizations contribute to a process through which a world of dangers is transformed into a world of risks. The world and its dangers are not "givens" anymore, as technological tools and organizational routines make them increasingly a matter of decision-making.

Yet the emergence of risk society not only results in new risks faced by individuals, states, and organizations, but also fundamentally alters the way in which organizations relate to their social environment. In a way, the organization may be regarded as a convenient vehicle for efficiently achieving clearly defined objectives, as a "system of consciously coordinated activities or forces of two or more persons" (Barnard, 1938, p. 73). In this sense, they are problem-solving institutions. Seen through the lens of reflexive modernization theory, however, they are also problem-producing institutions. They partake in a shift characteristic of risk society: from the distribution of "goods" to the distribution of "bads." This is evident for organizations of the industrial sector. While observers once focused on their achievements, products, and services, they are now equally interested in the side effects of their operations:

> Where once the individual large corporation was free of public pressure unless it specifically misbehaved—stifled competition, endangered its employees, or whatever—today it is being challenged for virtually everything it tries to do and, indeed, for not taking the initiative in the social sphere. Once there were only the owners' goals to attend to, later the systems goals. Today the corporation is being asked to respond to a confusing host of public goals, social as well as economic. (Mintzberg, 1983, p. 464)

The anticipation of side effects also means that corporations are increasingly faced with anticipatory resistance to their decisions: No power plant is built without protest from nearby residents, no oil field explored without critical scrutiny by transnational non-governmental organizations (NGOs), no new pharmaceutical drug hailed without qualifications about its side effects. In other words, as highly visible and ubiquitous institutions of modernity, organizations have to cope with a situation in which the basic principles of modernity are not taken for granted anymore. Consequently, organizations cease to be primarily conceived as instruments of risk *management;* instead, their decisions are often perceived as *sources* of risk.

This signals a significant paradigm shift. Early theorists of modernity regarded the bureaucratic organization not only as an efficient means of instrumental action (e.g., producing goods and services) but also as a tool of planning. The calculus of risk that we have described above could not

have become a social institution without being anchored in the modern organization. Organizations are capable of planning their actions. In the process, according to early organization theorists such as March and Simon (1958), they "absorb" uncertainties and replace them by seemingly calculable risks: "When organizations analyze problems, they try to transform *uncertainties* into *risks,* rationalizing problems previously outside the realm of systematic control" (Clarke, 1999, p. 10). Any socially significant imponderability or uncertainty seems to trigger organizational responses: From military security over health care to disaster control, organizations are involved in any serious societal effort to cope with an uncertain and possibly dangerous future. As responses to uncertainty, the aforementioned insurance principle and organizational planning go hand in hand. Insurance serves to defuse individual uncertainties by turning them into collectively faced, calculable risks. Organizational planning creates the impression that anticipatory policies can be devised for any imaginable uncertainty faced by larger groups of people.

However, with the emergence of an increasingly "self-conscious" risk society, it has become more and more obvious that organizations are not simply efficient tools of purposeful action and risk management. Rather, the principles of organizing themselves often seem to contribute to the proliferation of risk. Organizations are not only part of the solution but also very much part of the problem: "We have more to fear from organizations and experts overextending their reach, propelled by forces endemic to modern society, than from conniving conspiracies," argues Clarke (1999, p. 2). As extraordinary, and perhaps even exaggerated, as such a statement may appear at first glance, it ties in with both the increasingly common distrust of organizations and experts and the sociological analysis of reflexive modernization. As indicated above, the latter argues that modernity has become *self*-endangering. The biggest challenges faced by modern society are of its own making—manufactured uncertainties rather than external threats (Beck, 1996b). As an epitome of the modern trust in control, rationality, and objective knowledge, the organization partakes of the process of reflexive modernization. While organizations in First Modernity could by and large rely on a tolerant, even supportive social environment, organizations in Second Modernity have to adapt to a culture of uncertainty that does not uncritically accept received standards of knowledge and calculation.

Again, it is important to understand that the contemporary culture of uncertainty is a consequence of the rather exaggerated claims of certainty made during earlier phases of modernity. Many of them have been shattered by the well-known and much-publicized accidents and disasters of the second half of the 20th century—in particular, by the Chernobyl and *Challenger* accidents that combine to the "Ch-Ch-syndrome" (Funtowicz & Ravetz, 1990, p. 1), that is, the collapse of mega-technologies. But others, such as Bhopal, *Exxon Valdez,* and Three Mile Island, need to be included,

too, if we are to understand the changed situation at the beginning the 21st century. Those accidents certainly inform the collective consciousness of risk society. However, on top of the sheer monstrosity of the inflicted damages, the mounting evidence of the systematic connection between risk and organization has made a lasting impression. At least since Perrow's (1984) *Normal Accidents*, the attribution of risks to certain organizational structures has gained currency. The accident has ceased to be a mere mishap; it has become a regular feature. Society has been used as a "laboratory" for new technologies in the past (Krohn & Weyer, 1989), but it is uncertain to what extent it will tolerate such an enterprise in the future.

The Global Public and Its Problems: The Politicization of Risk Conflicts

In the process of reflexive modernization, the foundations of traditional risk management are eroding. Risk in Second Modernity is a cipher for irreducible uncertainty rather than for a calculable future. Neither improved expertise nor better communication can restore the old certainties. The resistance of society toward scientific and technological innovations such as GM foodstuffs is therefore not, in essence, a matter of understanding or misunderstanding calculable risks. What needs to be understood—both by practitioners and theorists—is that the basis of power and legitimacy has changed.

Rather than particular technologies or the decisions made about them, it is the *unforeseeability of the consequences* that has become the source of politics. The risk profile of new, controversial technologies is determined by the uneasy dissent in terms of risk perception rather than by the agreed consent among stakeholders concerning opportunities. The question, therefore, is not whether a given technology is dangerous, but whether it is *perceived* as being dangerous. Genetic engineering is one of the prime examples. Some call its much-debated consequences "phantom risks" or "virtual risks." Such theorists inadvertently highlight an important fact: In the case of manufactured uncertainties, most cause-and-effect relationships are and often remain controversial. What they miss is that this controversial nature is itself a risk—an economic one for corporations and a political one for governments.

The awareness of the unpredictability of ultimate consequences has given rise to a world public that is highly "risk-sensitive." But on the other side of the risk-sensitive public are increasingly unpredictable consumers, among whom a chain reaction can be triggered by the merest hint of plausible evidence. Since uncontested scientific evidence is increasingly rare, public perception becomes the decisive element in such scenarios. And

because of its political weight, it is public perception that ultimately defines the likelihood of product bans or the success of liability claims. In risk conflicts, the central question of power therefore is a question of *definitional authority.* It is the question of who, on the basis of which legal and intellectual resources, gets to decide what counts as a "risk," what counts as a "cause," and what counts as a "cost." The question of determining who is responsible and who has to bear the burden of paying for damages has been transmuted into a battle over the rules of evidence and the laws of responsibility. The new global public challenges the existing system of "organized irresponsibility" (Beck, 1988). The dynamic that fans risk failures into risk crises is the attempt to shift the burden of proof and the burdens of cost that have thus far been borne by consumers and the environment back onto corporations and governments. Put another way, they are driven by the attempt to institutionalize the concern for ultimate consequences.

Current and future risk conflicts seem to crystallize around a specific set of risks often referred to as "new" risks (see Lau, 1999). These new risks are characterized by new relationships between the actual decision-making and the spatial and temporal scope of the resulting risks (for the latter see especially Adam, 1998). New risks can no longer be delimited in time and space. They affect everyone but can hardly be attributed to anyone anymore. Properly considered, risk society has always been "world risk society" (Beck, 1999b; Beck & Holzer, 2004), but it is only slowly taking shape as the border-crossing implications of global risks are felt. The risk landscape thus created has the following elements:

(1) *Irreversible consequences, unlimited in time and space, that occur only after a long latency period.* Measuring "risk" probabilistically presupposes a concept of "accidents" as things that happen at a particular time and in a particular place to a particular group. But none of these tacit assumptions hold for the "accident" that occurred at Chernobyl. Even 20 years later, some of the victims have not even been *born* yet. Similarly, an accident caused by GM organisms would be just as unbounded as a nuclear accident. Everything that is celebrated as a triumph of gene technology—e.g., its universal applicability and its power to increase productivity—will have the effect of spreading it much faster throughout the food chain. Theoretically, then, the ultimate risks of this technology would be even more unlimited and incalculable. We can get out of nuclear power, at least in principle, and nuclear waste sites are at least *sites* (i.e., discrete locations). In this regard, biotechnology opens up a completely new arena for the near-invisible production of risk.

(2) *Contradictions of globalization.* Citizenship is usually conceived of in terms of national rights and national duties, and this is the framework that regulates the risks that anyone living within the national territory may face.

But the globalization of risk has created huge difficulties for the nation-state in its effort to manage risks in a world of global flows and networks, especially when nobody takes responsibility for the outcomes. Bovine spongioform encephalopathy (BSE) is an explosive reminder of the inability of nation-states to predict, manage, and control risk in a chaotically interacting world of politically hybrid forms. Politicians say they are not in charge, that they at most regulate the framework for the market. Scientific experts say they merely create technological opportunities; they don't decide how they are implemented. Businesses say they are simply responding to consumer demand. Society has become a laboratory with nobody responsible for the outcome of the experiment (Krohn & Weyer, 1989). This is increased and enforced by the transnational diversity of regulatory standards. And this diversity can cause enormous tensions not only domestically but also in global, regional, and bilateral trading systems. Even existing supranational democratic institutions have difficulties reaching decisions. For instance, in the European Union (EU), which has probably made the greatest progress in establishing transnational decision-making bodies, member states during the BSE crisis followed their own national policies regarding the acceptance of the clearance certificates for British beef. While the exercise of national sovereignty might appear a viable solution in this case, the ramifications of other global risks are not as easily contained and therefore highlight the structural inability to manage manufactured uncertainties either nationally (through independent regulation) or globally (through collective action and supranational institutions).

(3) *Known unawareness and the unreliability of knowledge.* The unknown far outweighs what is known. That is the undeniable consequence of the steady but invisible production of risk. Clearly scientists now know much more about BSE than before. But even now, more than a decade after the disease's discovery, its origins, its host range, its means of transmission, the nature of the infectious agent and its relation to its human counterpart, new variant Creutzfeldt-Jakob disease (nvCJD), remain mostly unknown. Ultimate risk may offer no narrative closure, no ending by which the truth is recovered and the boundaries are stabilized. The lack of past experience means that in the context of manufactured uncertainties, the subjunctive has replaced the indicative. This is in large part because the past has been so thoroughly rewritten. Many things that were once considered universally certain and safe turned out to be deadly. Applying that knowledge to the present and the future devalues the certainties of today. This is the soil that nurtures the fear of conceivable threats. Virtual risks no longer need to exist in order to be perceived as fact. You might criticize them as phantom risks, but this does not matter economically. Perceived as risks, they cause enormous losses and disasters. Thus, the distinction between "real" risks and "hysterical" perception no longer holds. Or more precisely: *Economically,* it makes no difference.

(4) *The dominance of public perception.* Risk acceptability depends on whether those who carry the losses also receive the benefits. Where this is

not the case, the risk will be unacceptable to those affected. If even the benefit is in dispute—as is the case with GM foods—it is not enough to demonstrate that the "residual risk" is, statistically speaking, very small. A risk is always framed by the criteria used in evaluating it, and colored by the cultural assumptions that surround it. One might say: Risks are as big as they appear. From a social-constructionist perspective, this is obvious. Yet it becomes a universally relevant social fact in the case of manufactured uncertainties.

It is against this background that technical experts perceive the lay population as irrational or hysterical, either because people seem to be making bad calculations of personal risk—e.g., when smokers protest against nuclear energy—or because they express themselves with lurid images—e.g., when many people in Great Britain, seemingly invaded by German angst, demonize their genetically modified (GM) wonders as "Frankenstein food." In the public domain, statements of risk are based on cultural standards, technically expressed, about what is *still* and what is *no longer* acceptable. When scientists say that an event has a low probability of occurring, and hence is a negligible risk, they also express a judgment about relative payoffs. Social and cultural judgments do not simply distort the perception of risk. Without social and cultural judgments, there *are* no risks. Those judgments *constitute* risk, although often in hidden ways.

It is almost trivial to state that risk is more than ever a social construction (see Adams, 1995; Krimsky & Golding, 1992; Short & Clarke, 1992). Yet such a statement has important consequences for our analysis. It means that we have to focus our attention on the power relations of risk definition. Once we define risk conflict in these terms, each conflict reveals a microstructure of subsidiary struggles over the same set of questions that repeatedly recur: Who has the burden of proof? What constitutes proof under conditions of uncertainty? What norms of accountability are used? Who is responsible morally? And who is responsible for paying the costs? And this is true both nationally and transnationally, including along the North-South divide. When the politics of risk are explicated along these lines, they cast a rare light on shifts in epistemology and their relation to political strategy. Changing power relations of definition are closely connected to changes in some of society's central self-definitions. And to the extent that power in risk conflicts has changed to favor social movements, it shifts the whole context of risk conflict into a more reflexive constellation.

The key to a positive response to the culture of uncertainty lies in the readiness to make risk a topic of public debate; the willingness to negotiate between different rationalities, rather than to engage in mutual denunciation; and a recognition of the central importance of acting responsibly and accountably with regard to the losses that will always occur despite every precaution. A culture of uncertainty shuns the notion of "residual risks" because risks are only residual if they happen to other people. But the culture of uncertainty is also different from a "safety culture"; that is, a culture

in which absolute safety is considered an entitlement that society should strive toward. Such a culture would smother all innovation in its cradle.

In some ways, this argument elaborates a central idea of John Dewey in his 1927 book, *The Public and Its Problems*.[6] Dewey saw local communities being overrun by corporations that operated on a national scale, much as we now see national communities being overrun by corporations operating on a world scale. For him, the only way for communities to regain their function of integrating individuals into society was to somehow match the scope of corporations and of the consequences of their actions. Dewey makes an important contribution to the theory of global risks by observing that a public is something that stands between causes and their consequences, and gives them a symbolic meaning they would not have otherwise. That meaning is what makes politics and society possible. And therefore it is not actions but *consequences* that are at the core of politics. And it is by giving consequences meaning that the public plays its key role in the formation of society:

> The doctrine of economic interpretation as usually stated ignores the transformation which meanings may effect; it passes over the new medium which communication may interpose between industry and its eventual consequences. It is obsessed by the illusion which vitiated the "natural economy": an illusion due to failure to note the difference made in action by perception and publication of its consequences, actual and possible. It thinks in terms of antecedents, not of the eventual; of origins, not fruits. (Dewey, 1954, p. 156)

Although Dewey was certainly not thinking of global warming, GM food, and BSE, his theory is perfectly applicable to the situation of risk society. In his view, public discourse grows not out of consensus over decisions but out of *dissent* over the *consequences* of decisions. Modern risk crises are constituted by just such controversies over consequences. Where some may see an overreaction to risk, Dewey thus sees a reason for hope. He thinks that such conflicts serve an *enlightenment* function. They bridge the gap between experts and citizens. And this is what gives them the political explosiveness that the technical diagnosis of the problem seeks to cover up.

The problem that Dewey started from—that local communities were being overwhelmed by the side effects of modernization—exists today on a global scale. The border-spanning long-term consequences of industrialization have the capacity for igniting transnational "communities of risk" or "risk publics." From the perspective of industry and governments, the fact that social movements can now reach beyond the boundaries of national legal systems in their attempt to hold corporations responsible for the long-term consequences of their actions seems like a recipe for destabilization. From Dewey's perspective, the same events look like a vital step toward the building of new institutions. Risk has the power to rip

down the facades of organized irresponsibility. One can see a premonition of this power in the lightning flash of media publicity. It tears the decent drapery for just a moment, and pushes groups into contact from across the world that had hitherto been ignorant of each other's existence. This communication of risks not only happens despite people's original intentions, it goes particularly against the grain of experts and governments.

Social scientists have shown that many risks that are technically quite small loom larger than they "ought to" from the perspective of everyday life. But if we start from the hypothesis that people are acting rationally, where does this difference come from? It comes from what we just discussed, from being exposed to risks against one's will. An omnipresent mass media spreads an omnipresent knowledge of an omnipresent risk, say, contracting the BSE virus through your food. Even though the risk may be very small, its presence completely changes the experience of eating. Even if the chance of dying from a horrible brain-wasting disease is very small, it is not a lottery anyone wants to participate in. So they vote for another product, thereby making possible the collapse of whole markets. The propensity of consumers to act accordingly—to "vote with their shopping trolleys," as it were—has increased and nowadays presents a formidable challenge to many industries (Friedman, 1991; Micheletti, 2003; Micheletti et al., 2003).

The Legitimacy Gap in the Transnational Realm

The mobilization of an increasingly risk-sensitive public has severe consequences for governments and corporations. From the perspective of the public at large and the critical consumer, corporations are making *de facto* political decisions while still attempting to shift responsibility for their long-term risks onto others. In other words, corporations engage in a form of *subpolitics* that shares many attributes with traditional formal politics but bypasses the established institutions (Beck, 1999a; Holzer & Sørensen, 2003). The resulting *incongruity between power and legitimacy* generates a latent tension. It works fine so long as things are run smoothly. But in a crisis situation, the new emperors are often revealed to be naked of legitimacy. The chronic yet regularly unnoticed legitimacy deficit makes it possible for accidents to amplify quickly into crises and collapsed markets.

Conversely, this lack of legitimacy is also the main source of power for social movements. Social movements are neither organized democratically nor legitimated by democratic institutions. However, many people regard them as credible representatives of the public interest. While profit-seeking enterprises are necessarily associated with self-interest, social movement organizations can benefit from the legitimacy that modern culture bestows on actions seemingly motivated by altruistic motives (Boli et al., 2003). When one surveys young people as to which political actors they respect the

most, it is these movements that occupy the highest rank. Movements and corporations thus occupy opposite positions in the power-legitimacy matrix: Transnational corporations have many resources of power but little legitimacy, while social movements have few resources of power but a deep well of legitimacy (Beck, 2002, Ch. 6; Holzer, 2006). On that basis, social-movement organizations and advocacy networks are likely to be followed when they seek to mobilize the public against corporations. The incongruity between power and legitimacy is the Achilles heel of the transnational firm, and it is the point at which the public strategies of social movements take aim. In the end, even powerful companies can find themselves backed up against the wall by relatively tiny and poorly outfitted networks of activists.

The Brent Spar affair is a good illustration of how huge the legitimacy gap has grown, and how, once uncovered and harnessed, it makes available a force by means of which David can defeat Goliath (Grolin, 1998; Tsoukas, 1999; Wätzold, 1996). In this case, David was Greenpeace, a voluntary organization without a formal public mandate; it has employees as well as ships, helicopters, hot-air balloons, and quite a considerable budget. But it is definitely a David when ranged against a multinational oil company such as Royal Dutch/Shell. In the Brent Spar case, Shell also had the law on its side as well as the police and the support of the elected British government. And, perhaps most interestingly of all, it had environmental science on its side: Greenpeace's initial claims about toxic waste onboard the Brent Spar later turned out to be wrong. And yet in the end, with every conceivable advantage, Shell lost. There could be perhaps no better demonstration of what an enormous resource is now available to be tapped by a skillfully organized public campaign.[7]

The Brent Spar controversy is a particularly instructive example of the challenges that corporations face when they have to defend themselves against the campaigns of social movement organizations. Both scholars and practitioners regard it as a paradigmatic case study in the field of corporate crisis management (see Paine, 1999; Paine & Moldoveanu, 1999). Although the setting and trajectory of the conflict—as well as its public resonance—was exceptional, it must be seen in the context of a range of similar events—both before and after the Brent Spar case. Those range from the early anticorporate campaigns orchestrated by consumer advocates such as Ralph Nader (see Vogel, 1978) over the long and ultimately successful activism against Nestlé's infant-formula marketing in the Third World (Sethi & Post, 1979; Sikkink, 1986) to the antisweatshop campaigns against Nike and other global companies (Global Exchange, 2003; Micheletti & Stolle, 2005).

Although these and various other campaigns have a lot in common, there are also important differences. For instance, some conflicts revolve around the divergence of standards regarding working conditions or environmental protection. To the extent that the campaigns aim to harmonize those standards across the world, one may expect fewer protest motives in the future. Other cases, however, cannot be as easily resolved by more encompassing regulation: They concern the foundations of regulation as such and are

thus directly related to the aforementioned culture of uncertainty. Confrontations about fundamental uncertainties such as the impact of toxic waste on marine life or the introduction of GM organisms into the food chain are not simply about regional variations in regulation and can therefore not be addressed by a convergence of standards alone. They concern the relationship between decision-making power on the one hand and the rules of accountability and responsibility on the other: In world risk society, the consequences and side effects of risky decisions transcend the routines and boundaries of a predominantly territorial mode of regulation.

The resulting legitimation deficit, which grows out of the gap between increasingly global and long-term risks and spatially and chronologically limited responsibility, is now a constant potential, waiting to be transformed at any moment into a radical loss of confidence in established institutions. It has changed the balance of power between the risk-critical public and the transnational corporations. Globalization thus does not simply mean that corporations grow more powerful. Rather, the accelerating pace of international economic integration serves to increase the legitimation deficit of border-spanning economic decision-making. This chronic legitimation deficit renders consumer markets extremely fragile and makes international corporations extremely vulnerable (Willetts, 1998). The more they manage to escape from the power of governments, the more they seem to depend on direct relationships with consumers, markets, and civil society. Globally operating actors such as transnational corporations are confronted with the problem of diverse and often contradictory legal frameworks and societal expectations. They face new uncertainties as societal demands appear increasingly contradictory and elusive. The globalization of communication systems has further exacerbated this problem because activities in one locale are now scrutinized by a transnational public representing various value systems. For the implementation of decisions this may lead to problems, as Phil Watts of Shell International observed:

> Communications technology has created a global goldfish bowl. All multinational companies operate in front of a hugely diverse worldwide audience. . . . [S]ince the ethical, social, cultural and economic priorities which underlie their demands are . . . often local and personal, those demands will differ, will often conflict, and may be irreconcilable. (Watts, 1998, p. 24)

The crucial point for corporations is that the legality of their operations may be insufficient to ensure legitimacy. For instance, Shell's planned Brent Spar disposal was entirely legal. The operation complied not only with British but also with international law. Initially, none of the affected *states* objected to it. What Shell did not and probably could not ensure, however, was the acceptance by the (transnational) *public*. The latter becomes problematic when decisions and their consequences are regarded as transcending the boundaries of the nation-state. Accordingly, the legitimacy and

acceptance of decisions that comply with legal rules cannot be taken for granted anymore.

It is hardly surprising that organizations, in particular business enterprises, should have sought to address that problem. The recent focus on "stakeholder relations" (Donaldson & Preston, 1995; Freeman, 1984; Weiss, 1998) is instructive in this respect. More and more organizations seek to identify those groups and issues that could throw their operations into turmoil. The only way to regain legitimacy appears to be a systematic effort to engage the public.[8] As the public has grown wary of the side effects of economic activities, the thoroughly private nature of business has been called into question. Echoing Dewey's arguments, the distinction between public and private is redrawn—this time not on the basis of property, but on the basis of the *consequences* of decisions.[9] Thus, one may argue that business decisions are increasingly becoming *public* in nature because of their alleged impact on others. The ensuing scrutiny and distrust of business practice has transformed large corporations into "quasi-public institutions" (Mintzberg, 1983, p. 525; Ulrich, 1977). Taking stakeholders and public demands seriously could become a viable alternative to the expert-based safety culture of the past. Although such an approach cannot pretend to ensure the predictability of future events, it certainly represents a more realistic answer to the challenges of a culture of uncertainty.

Conclusion

In the risk-sensitive social environment of world risk society, organizations have to realize that "crises" do not always have a clearly identifiable origin or cause. A general shift from calculable risk to uncertainty means that it is impossible to control or even accurately predict a firm's external environment. The shift from a safety culture based on the acceptance of residual risks to a culture of uncertainty has made the challenges faced by organizations more incalculable. Furthermore, the globalization of organizational activities and public arenas has multiplied the observers and audiences and has thus only exacerbated this problem. The lesson learned by society—that calculable risk is a useful but not necessarily correct interpretational device—may still have to be learned by some organizations, too. The risks they regularly produce are reflected back by the fact that public outrage can wreak havoc on a company's reputation. The problem of manufactured uncertainties and their consequences thereby becomes relevant to everyday decision-making processes. Organizations cannot stop making decisions, but they can be cognizant of the fact that others will increasingly judge them by their consequences and side effects—and not by their good intentions.

Notes

1. This section draws on arguments developed in more detail in Beck (1992; 1996b; 1999c).

2. Some theorists follow Knight (1921) and distinguish between risk and uncertainty. However, most modern observers would not subscribe to Knight's objectivist interpretation of risk. Even probabilistic risk always entails uncertainties that are simply obfuscated by mathematical precision. The difference Knight had in mind seems to be whether fundamental uncertainties are acknowledged in the decision-making process—or not.

3. By referring to a "culture of uncertainty" we take up a line of investigation pioneered by Mary Douglas and her collaborators (Douglas, 1992; Rayner, 1992; Schwarz & Thompson, 1990; Thompson et al., 1990). However, we perceive the culture of uncertainty as a growing and increasingly encompassing pattern of late modern culture that, as we shall argue below, is also becoming global in scope.

4. See Luhmann (1990, 1991) for a detailed discussion of how this distinction between risk and danger has become increasingly relevant for modern society.

5. To be sure, the decision to go out in the first place may also be construed as acceptance of the risk of getting wet. Yet since it is impossible to stay at home forever, there is no real alternative, and therefore no opportunity for decision-making: no risk, but danger.

6. The following draws on a line of argument developed in Beck (2001).

7. It is important to note that discursive skill and not just professional organization played a major role in Greenpeace's success. Shell's insistence on rational-scientific argument could not match Greenpeace's discourse of possible risks and environmental responsibility (see Holzer, 2001).

8. "Organizations in modern societies are public not only in the sense that their structures, processes and ideologies are open to observation, but also in their ultimate dependence on public acceptance, i.e., of positioning themselves in relation to the perceptions and policies of society at large" (Brunsson, 1989, p. 216).

9. See Dewey's (1954, p. 15) dictum that "the line between private and public is to be drawn on the basis of the extent and scope of the consequences of acts which are so important as to need control, whether by inhibition or by promotion."

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