

The Social Arena Concept of Risk Debates

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In Chapter 3, I reviewed the sociological and cultural perspectives on risk and discussed the strengths and the weaknesses of each framework. Whereas the rational actor approach cannot explain social situations in which incentives are not the driving forces of social action, structural approaches have difficulties in explaining the variance of individual behavior within the same structural context. The objective concepts, which focus on real consequences of action, fail to include the symbolic meanings and interpretations of events and consequently miss the variety of social constructions associated with the same “real” event. Constructivist approaches, on the other hand, are likely to be drawn into the maelstrom of total relativism with no anchor for a baseline comparison.

These observations led me to conclude in Chapter 3 that one approach alone cannot provide a thorough and valid understanding of the social experience of risk. Knowledge of physical consequences, the handling of risk information by individuals and social groups, the social and cultural meanings of risk causes and effects, as well as structural and organizational factors, shape the social experience of risk. Integrating these various perspectives is a necessary and difficult task, but it would be futile to mix them together in a soup without specifying each concept’s specific contribution and creating a common network of linkages between them.

This chapter is not meant to provide such an integrative framework. Rather it illuminates one aspect of the complex risk issue that needs more theoretical grounding before it can become part of a synoptic framework. At this time, we have fairly good knowledge of the prospects and limitations of technical risk analyses; a fairly good understanding of individual risk perception; case study data about institutional management and organizational constraints; a fair amount of data from investigations into the media coverage of risk and its impacts on individual perception; interesting and

often challenging essays on social constructions of risk issues; and many studies about social mobilization for political purposes. What appears to be missing, however, is a better understanding of the structural factors that shape interactions among social groups and influence the outcome of social conflicts over risk.

Social mobilization theory, a natural candidate for such an approach, addresses the questions of why individuals feel attracted to certain movements and what kind of structural conditions are likely to initiate social protest (McCarthy and Zald 1977; Walsh 1981; Klandermans 1984). The conditions for success or failure of social movements are hardly ever discussed (McAdam, McCarthy, and Zald 1988). Neo-Marxist and critical theories tend to focus on power distribution and the inequitable sharing of resources that result from the antagonism between socially produced wealth and private ownership or management of production (Habermas 1975; Kemp 1980; Schumm 1986). This approach is inadequate to account for other important aspects of the risk debate such as evidence and value commitment. The cultural approach offers a simple and comprehensive framework for analyzing group responses, but cultural prototypes are mixed within social groups, and it is unclear how the interests and missions of groups are intertwined with their cultural affiliations (B. B. Johnson 1987). In addition, cultural theory may account for the difficulties of communication between different cultural groups, but it does not provide information that explains how these conflicts are addressed or resolved in a multicultural society.

In addition to theoretical approaches, psychologists and sociologists have used inductive empirical research to investigate social group responses to risk (for example, von Winterfeldt and Edwards 1984; Wynne 1984a; Dietz, Stern, and Rycroft 1989). These studies provide a wealth of interesting data and ideas, but do not provide a framework in which these elements are embedded.

In this chapter, I describe a possible candidate for such a theoretical framework. It is based on the political concept of arena policies (Lowi 1964, 1975; Kitschelt 1980, 1986; Hilgartner and Bosk 1988) and the basic structure of resource mobilization theory (Lipsky 1968; McCarthy and Zald 1973; Zald 1988). It is also inspired by the classic writings of Parsons (1951), Coser (1956), Easton (1965), Giddens (1985), and Gamson (1990). This modified arena theory is not an integrative framework that combines scientific, individual, social and institutional responses to risks. Its strength (and weakness) is its focus on political debates about risk issues and the behavior of each actor in such debates.

The basic claim of this theory is that social groups in a political arena try to maximize their opportunity to influence the outcome of the collective decision process by mobilizing social resources. In this respect they act according to the rational actor framework. The outcome of this struggle,

however, is determined not only by individual or group actions, but also by the structural arena rules and the interaction effects among the competing groups. This theory is based on the assumption that individuals and organizations can influence the policy process only if they have sufficient resources available to pursue their goals. The political organization of an arena and the external effects of each group's action on another group's actions constitute structural constraints that make the outcome of an arena struggle often incompatible with the evidence and/or the values of any participating group.

THE BASIC STRUCTURE OF THE ARENA METAPHOR

Constitutive Elements

A social arena is a metaphor to describe the symbolic location of political actions that influence collective decisions or policies (Kitschelt 1980). Symbolic location means that arenas are neither geographical entities nor organizational systems. They describe the political actions of all social actors involved in a specific issue. Issues can be pending political decisions such as siting of facilities or increased property taxes; social problems such as crime or education; or ideas such as civil liberties, or evolution versus creationism. The arena concept attempts to explain the process of policy formulation and enforcement in a specific policy field. Its focus is on the meso-level of society rather than on the individual (micro-level) or societal behavior as a whole (macro-level). It reflects the segmentation of society into different policy systems that interact with each other but still preserve their autonomy (Hilgartner and Bosk 1988).

The arena model incorporates only those actions of individuals or social groups that are intended to influence collective decisions or policies. Somebody who merely believes in deep ecology and communicates the idea of equal rights of animals and humans to others is irrelevant in the social arena unless this person attempts to change environmental policies, reform hunting laws, or restrict current practices in agriculture and animal laboratories. Such intentional behavior is certainly not the only way that policies are affected by public input (for example, public opinion polls or media coverage may influence policy indirectly), but these external effects are conceptualized as inputs into the arena rather than as elements of the arena.

Within a policy field several arenas may exist in which actors have to be present in order to influence the policy process. Peters (1990) distinguishes among the legislative, administrative, judicial, scientific, and mass media arenas. Since these arenas are closely intertwined and share actors, I refer to them as different (theater) stages within a single arena. Stages are manifestations of the same arena within different institutional contexts, such as litigation or policy making. The number of actors and the type of public

institutions involved may differ from one stage to another, but all these stages have the same functional goal of providing social input to the policy process.

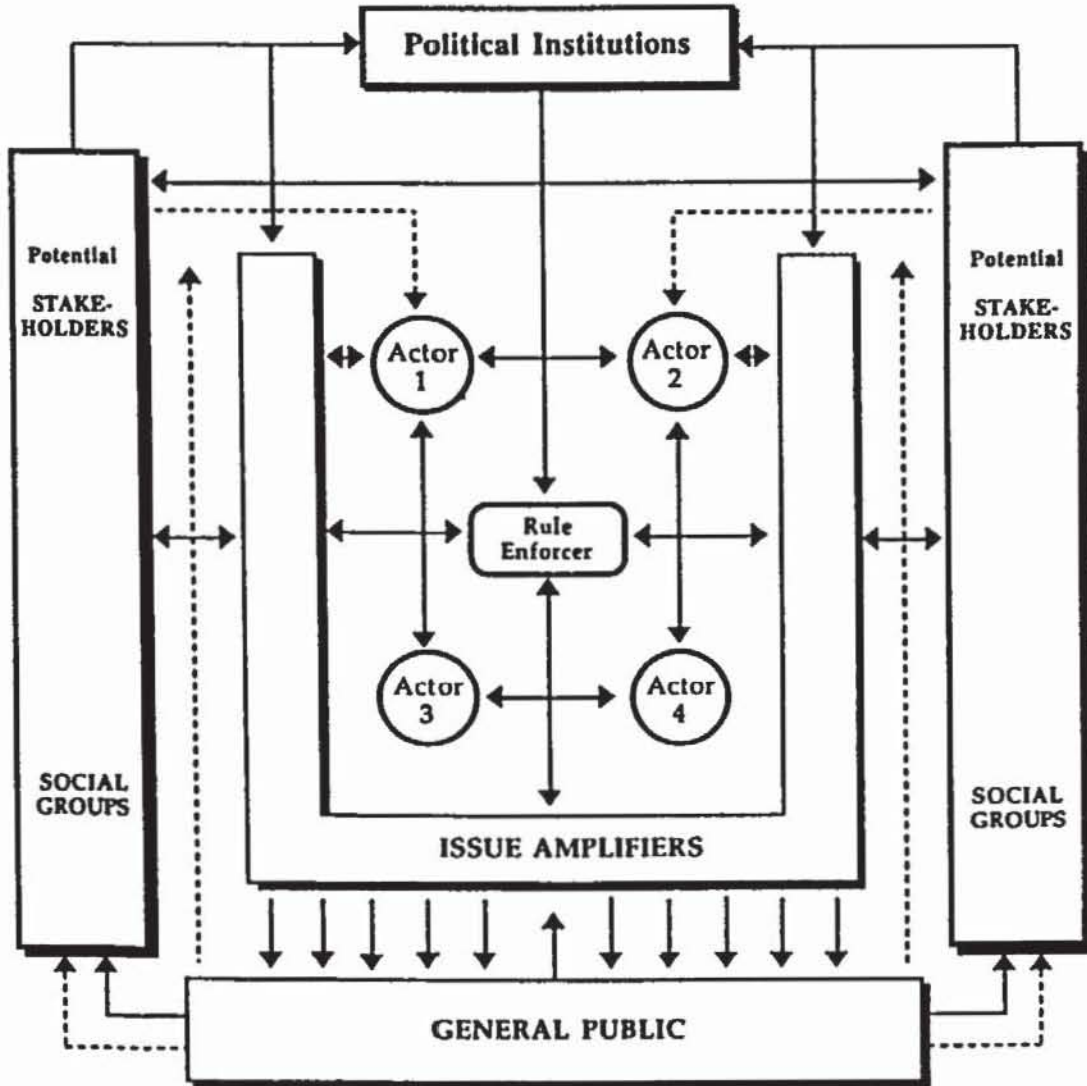
That social groups in an arena intend to influence policies is the only assumption in terms of making inferences about intentions, motivations, goals, purposes, or hidden or overt motives of social actors. This assumption is very important because it provides the yardstick for evaluating social constructs that groups may use to define their cause and to pursue their goals. Under this assumption, success and failure of group activities can be measured (intersubjectively) by the amount of influence that the specific group has been able to exert on the resulting decision(s) or policies. The reasons explaining why people feel motivated to become active or why they invest time and effort to become players in the arena are not the focus of the arena concept. The study of reasons and motivations may be better served by the traditional resource mobilization theory or phenomenological approaches. To refrain from motivational analysis of the actors involved in an arena does not mean that these motivations are irrelevant for political success or failure. Within the arena theory, however, they are only of interest if they are part of the resource mobilization effort, that is, if motivations are used to generate support.

Description of the Arena Metaphor

Figure 7.1 illustrates the arena metaphor. The center stage of the arena is occupied by the principal actors, that is, those groups in society that seek to influence policies. Some groups focus on several issues at once and are hence involved in different arenas; others focus only on one issue in a single arena. Each arena is characterized by a set of rules: formal rules that are coded and monitored by a rule enforcement agency, and informal rules that are learned and developed in the process of interactions among the actors. Among the formal rules are laws, acts, and mandated procedures; among the informal rules are regulatory styles, political climate of group interactions, and role expectations. In most cases the rules are external constraints for each single actor. Formal rule changes require institutional actions; informal changes occur as a result of trial and error and may change according to whether or not rule bending is penalized. Several actors may join forces to change the rules even if they disagree on the substance of the issue.

The rule enforcement agency ensures that the actors abide by the formal rules and often coordinates the process of interaction and negotiation. In many arenas the rule enforcement agency is also the ultimate decision maker. In this case, all actors try to make their claims known to the decision makers and to convince them by arguments or through public pressure to adopt their viewpoint. In an adversarial policy style, which is typical for the United States (O'Riordan and Wynne 1987; Renn 1989b), rule enforcement agen-

Figure 7.1
Graphical Representation of the Arena Metaphor



Note: Solid arrows show communication flow; dotted arrows the direction of social mobilization.

cies regard themselves more as brokers or mediators than as sovereign administrators who are consulted by various social actors, which tends to be the European policy model (Coppock 1985).

Issue amplifiers are the professional “theater critics” who observe the actions on stage, communicate with the principal actors, interpret their findings, and report them to the audience. Through this communication process they influence the allocation of resources and the effectiveness of each resource to mobilize public support within the arena. The audience consists of other social groups who may be enticed to enter the arena and individuals who process the information and may feel motivated to show

their support or displeasure with one or several actors or the arena as a whole. Part of the political process is to mobilize social support by other social actors and to influence public opinion.

In contrast to traditional role theory or the theater stage metaphor (Goffman 1959; Palmlund, Chapter 8), the arena concept does not picture the actions on stage as a play with a script or actors performing role assignments. Arenas are more like medieval courtyards in which knights have fought for honor and royal recognition according to specified arena rules that determine the conditions for the fight, but leave it to the actors to choose their own strategies. Accordingly, modern arenas provide actors with the opportunity to direct their claims to the decision makers and thus to influence the policy process. Their behavior is not necessarily defined by behavioral roles and routines; actors may use innovative approaches to policy making or use traditional channels of lobbying. Arenas are regulated by norms and rules, however, which limit the range of potential options. Actors may decide to ignore some of the rules if they feel that public support will not suffer and if the rule enforcement agency is not powerful enough to impose sanctions on actors who violate the rules.

The outcome of the arena process is undetermined. On one hand, various actors may play out different strategies that interact with each other and produce synergistic effects (*game theoretical indeterminacy*). Strategic maneuvering can even result in an undesired outcome that does not reflect the stated goal of any actor and may indeed be suboptimal for all participants. On the other hand, interactions in the arena may change the arena rules (*structural indeterminacy*). Novel forms of political actions may evolve as actors experience the boundaries of tolerance for limited rule violations. Therefore, arenas often behave like indeterministic or nonlinear systems; small changes in strategies or rules are capable of producing major changes in conflict outcomes. It is also difficult to predict who is going to benefit from potential rule changes induced by trial and error. Both characteristics of arenas limit the use of arena theory for predictions, but do not compromise its value for explanation and policy analysis.

Social Resources

To be successful in a social arena, it is necessary to mobilize social resources. These resources can be used to gain the attention and support of the general public, to influence the arena rules, and to "score" in competition with the other actors. In arena theory, resources help actors to be more influential. Resources may be the ultimate goals of an actor, but more likely they are the means by which actors can accomplish their specific intentions. Whether these intentions are egoistic or altruistic, overtly stated or hidden, is irrelevant for the success of resource mobilization unless the goals themselves are used in a debate to improve one's opportunities to gain resources.

Which are the social resources that social groups need in order to be influential in society? The early functionalist school of sociology referred to social resources as “all persons or organizations, which can be of help to an individual or a social-work agency in solving problems” (Fairchild 1955, 291). As a means to mobilize resources, different functional segments of society use generalized media, that is, instruments to mobilize support (Parsons 1951; Parsons and Smelser 1956; Etzioni 1961). The medium for the economic sector is money; for the political sector, power; for the social sector, prestige; and for the cultural sector, value commitment (Parsons 1963). More recent literature suggests that these media are actually the resources that groups want to mobilize, whereas the term *media* should be confined to the currency (exchange value) within each resource type (Luhmann 1982; Münch 1982). Based on this understanding of resources, the following five resources appear to be of major relevance in describing risk arenas:

- *Money* provides incentives (or compensation) in exchange for support or at least tolerance;
- *Power* is the legally attributed right to impose a decision on others; conformity is established by the threat of punishment;
- *Social influence* produces a social commitment to find support through trust and prestige;
- *Value commitment* induces support through persuasion, solidarity, and cultural meaning; and
- *Evidence* can be used to convince persons about the likely consequences of social actions.

Table 7.1 lists these resources and describes their range of application, the medium through which they operate, and the motivator on which they are built. *Money* is most frequently used in the economic sector, but, like all other resources, it is also instrumental in other sectors such as the social system. Its medium of expression is the transfer of capital, which in turn provides incentives for other actors to show loyalty to the donor. Money usually buys compliance rather than convictions (except over long time periods).

The same is true for power. *Power* operates through coercion and requires compliance with rules and commands independent of the subjugated group's convictions or personal values. Authority and force are the two media through which power is expressed and are the bases on which power relationships are established. The motivation to comply stems from the threat of punishment, which may include physical force, although the threat alone is often sufficient to produce conformity without formal sanctions being imposed. It should be noted that I use the term *power* in the classical Weberian sense, rather than in the modern system-analytic concept of power

Table 7.1
Social Resources: Sectors, Media, and Motivators

Resources	Dominant Sector	Generalized Medium	Motivator
Money	Economy	Transfer of Capital	Economic Incentives
Power	Politics	Force	Punishment
		Authority	Compliance
Social Influence	Social System	Reputation	Trust
		Reward	Prestige
Value Commitment	Culture	Persuasion	Solidarity
		Meaning	Cultural Unity
Evidence	Sciences	Methodology	Expected Impacts
		Rhetoric	

as “any type of influence to make others comply with one’s intentions” (Coser 1956) or as “exclusive possession of information” (Münch 1982). Otherwise, power is difficult to distinguish from social influence or value commitment.

Social influence is a resource that operates through the media of reputation and social reward. Reputation generates trust in the specific actor even if the meanings of the actions are not understood by others. For example, asking Nobel Prize laureates to defend nuclear power or asking prominent actors to endorse toxics legislation does not mean that people are convinced that nuclear power is beneficial for them or that a new initiative restricting chemical use is desirable. People believe these actors because they are convinced of their sincerity, accept them as role models, or identify them as experts on this issue. The second medium, social rewards, constitutes symbolic reinforcements of behavior and generates social prestige. By analogy with money, social rewards can increase conformity and evoke support. Social influence is not based on shared values or meaning with respect to the issue in question, but on socially accepted incentives for assigning credibility to others and receiving social status through others.

Value commitment is a cultural phenomenon of finding meaning and sense in the behavior of social actors and society as a whole. The two dominant media of expression are persuasion and meaning. If social actors are able to persuade other actors that their behavior is in accordance with their commonly shared values, interests, and worldviews, they can count on the solidarity based on this communality. Shared meaning conveys a

sense of purpose in life and creates a cultural unity that also extends into solidarity and a feeling of community. Value commitment has become one of the most powerful organizing principles in political debates as societal pluralism provides opportunities for individuals to be selective in choosing worldviews and to change alliances if this is deemed appropriate.

Evidence, the last resource, is not identical with truth. Truth is an ideal that has validity for all people at all times, whereas evidence is the claim of truth that social groups or special subsystems of society (in particular science) make based on methodological rules and accepted theoretical knowledge. Evidence is not divorced from the truth, however, as social constructivists and literary deconstructionists would like us to believe. Evidence is continuously being tested against reality. If reality shows that the evidence does not match the collective experience of reality, new knowledge is required and new evidence is sought in order to match knowledge and collective experience. Illusions, psychological and cultural denial, and reinterpretation of observations can obscure or color the experience of reality, but in a society in which pluralistic claims are permanently challenged by counterclaims and in which specialized subsystems are paid to "falsify" wrong evidence, illusions cannot be sustained forever. Unless reality is seen as the ultimate illusion (a philosophy of solipsism), it operates as a powerful yardstick to shape and redirect evidence. For example, if a group claims that a particular hazard is actually benign, repetitive occurrences of accidents with negative consequences will finally trigger a revision of this claim and may evoke a substantial loss of social influence for this specific group. Evidence is not arbitrary in spite of the fact that it is relative and pluralistic (cf. the model of graduated rationality in Renn 1981).

Evidence in the arena concept serves as a powerful social resource to convince people that the expected factual impacts of one group's claims are in their best interest, whereas the potential impacts of the competing groups' claims are not. Policy options are empirically testable. Supporting evidence can be based on past experience, logical reasoning, empirical tests, theoretical plausibility, or a combination thereof. The claim to provide the truth is supported by adhering to methodological rules of inquiry or rhetorical rules of argumentation.

In modern democratic and pluralistic societies actors need more than one resource to be successful in an arena. Neither money nor power is sufficient to shape policies. The exclusive focus on these two resources has blinded Marxist theorists to the power of persuasion and cultural meaning. At the same time, however, the exclusive focus on social influence and value commitment, as often exercised by cultural theorists, has underestimated the relevance of structural factors on the experience of reality and the shaping of policies. All actors, including the rule enforcement agency, need a minimal reservoir of each resource in order to be successful in a given arena.

The rule enforcement agency is a particularly interesting example. It may

sound paradoxical, but the formal power of decision making is not sufficient to make decisions in modern democratic countries (Gale 1986). As many cases have demonstrated, citizen protests have successfully blocked the siting of unwanted facilities, although the responsible agencies had the power to override such opposition. If the agency has no resource other than power (or money), that is, if it cannot demonstrate that the impacts are benign, that the operation of a facility is in the interest of or consistent with the values of the community, or that the facility may increase the social status of this community, then the project will fail. If situations arise in which rule enforcement agencies have nothing but power, they are more willing to share this power in exchange for other resources, such as evidence or value commitment. This is probably the most powerful motivation for rule enforcement agencies to initiate citizen participation projects.

The need to collect all five types of resources creates an exchange market for resources via the generalized media of expression. Social actors with lots of money try to purchase social influence by paying highly reputable persons to join their cause. Groups that offer meaning and values use these resources for fund raising. High-prestige groups may use rewards to honor charismatic leaders, who in turn will provide value commitments. Other groups may use their power or money to hire experts in exchange for receiving evidence. Resources are partially convertible, and it depends on the context and the availability of other resources whether one resource can be exchanged for another. The exchange of resources is not a zero-sum game; they *can* be generated without subtracting resources from other groups. The generation and distribution of resources may result, however, in inflationary or deflationary developments (Parsons and Shils 1951). Too many medals, for example, diminish the social value of each medal.

Another limitation of resource exchange is the problem of legitimizing the use of resources outside their dominant application. The extensive use of one resource (such as money) outside its "home sector" is likely to come at a cost to the existing reservoir of other resources. For example, the use of money for compensation may lead to a decline in social influence and value commitment because the transaction is perceived as bribery. Similarly, the appeal to common values and convictions may be seen as a signal of weakness in the economic market, and potential investors may be more cautious to supply the respective actor with money. Gaining resources in an arena is a balancing act in which the need to exchange resources has to be weighed against the probability of losing both the resources one is willing to sacrifice and the resources one hopes to gain.

Another strategy to gain additional resources is to use one's influence in other established arenas to generate resources and to transfer them to a novel arena. At the same time, groups may enter an arena only for the sake of receiving resources that they can use for another political issue. Although arenas in modern societies tend to be structurally segmented and auto-

mous, the success of resource mobilization tends to depend on the perception of overall performance in several arenas. A company that wants to sell its products may enter an environmental arena in order to gain social reputation and value commitment even though the issue of this arena is of low interest to its managers. Actors also like to use "hot" issues to piggyback their own claims to the targeted audience. This is one way to gain attention and social recognition. This strategic behavior of groups is one of the reasons that arena theory makes no assumptions about the substantive goals of the actors, but limits itself to the resources that actors try to mobilize as a means to influence the policy outcomes.

Conflict Resolution in a Political Arena

Social actors will enter a risk arena if they expect that doing so will provide them with an opportunity to gain enough resources to influence the policy process (Kitschelt 1986). Beyond their reservoir of current resources, social actors can generate more resources by exchanging one resource for another and by communicating to other actors and issue amplifiers. The objective of communication is to receive public support and to mobilize other groups for one's own cause. The more resources a group can mobilize in an arena, the more likely it will succeed in pushing its interests or goals through the conflict resolution process and getting its point of view incorporated in the final decision.

At the beginning of a conflict, social resources are not equally distributed among the actors and potential actors. Since resource mobilization is not a zero-sum game, the outcome of a mobilization campaign is open and not necessarily linked with the performance of other principal actors. Conflicts are resolved either if one of the actors is powerful enough to dominate the policy outcome (this could be the legitimate decision makers, but it could also be one of the other actors) or if all relevant actors feel that their cause is better served by pursuing a compromise solution. A conflict remains unresolved if none of the actors is able to dominate the process and at the same time one or more relevant actors are convinced that they can generate or sustain more social resources by avoiding a compromise solution.

In the process of the conflict, actors communicate with each other, the rule enforcement agency, other potential actors, and the issue amplifiers. This communication serves the purpose of defining the stakes of each actor in the arena and of gaining or exchanging resources. Two feedback mechanisms are crucial for the resource mobilization purpose. First, communication may entice other groups to join or at least support the claim of one of the actors. Second, public opinion is revealed through opinion polls and other relevant public behavior. Both inputs into the arena, the mobilization of organized support and the assurance of public sympathy, help the actors increase their reservoirs of social resources (see Figure 7.1).

If all groups have a sufficient reservoir of resources, they may also opt to initiate a constructive discourse in which all participating groups can bring in their own interests and values, but orient their efforts to facilitate common understanding and to explore the range of shared interests. The personal capacity for empathy and the capability of social actors to envision the "common good" are two of the most powerful drivers for reaching agreements beyond the utilitarian approach of balancing individual interests (through mutual giving and taking and compensation). This idea of a rational and fair discourse depends on many conditions, one of which is the procurement of sufficient resources for each participating group (see Habermas 1984–87; Renn 1992, for more details). Arena theory is not only an explanatory tool for improving our understanding of risk debates, it can also be used as a normative instrument for designing discourses that help to resolve conflicts in a fair and competent manner.

APPLICATION OF ARENA THEORY TO RISK

The Mobilization Potential of the Risk Issue

Risk arenas operate under structural rules and constraints like any other arena. Risk debates focus on two issues: What is an acceptable level of risk, and how are risks and benefits distributed in society? All social groups that feel that their interests or values are affected by a specific risk source may be compelled to enter the arena. Success in the risk arena relies on the social actors' ability to mobilize resources. Beyond these communalities that risk arenas share with all other arenas, there are some specific characteristics of risk arenas that are worth mentioning.

The evidence trap. Finding a viable compromise in conflicts requires an agreement on evidence. If each group provides conflicting evidence about factual impacts, it is hard to reach a consensus. The less maneuverability groups have in making factual claims without being "falsified," the more likely it is that they will reach similar conclusions in terms of evidence. This increases the value of evidence for social mobilization. In risk issues, this normalizing effect of evidence-through-reality checks is less powerful than in other arenas, because the stochastic nature of the potential consequences (uncertainty) does not allow any inference with respect to a single facility or event. Consequently, there are competing and rationally defensible strategies for coping with risk, such as using the expected value as an orientation for risk acceptability or taking the minimax approach (minimize your maximum regret). Choosing one strategy over another obviously makes a major difference in the evaluation of risks. Furthermore, the time horizon for falsifying claims about risks is longer (in theory infinite) than any decision maker can wait. Any highly improbable event can occur today or tomorrow. Its early occurrence does not necessarily invalidate its assessment as a low-

probability event. Single events cannot be predicted by probability statements. As a consequence, social actors have a wide range of evidence options that cannot be falsified at face value. They do not risk losing credibility by using "self-serving" evidence to substantiate their claims. The broad range of acceptable evidence not only makes it difficult for all groups to reach a compromise, it also promotes inflationary tendencies for the effectiveness of evidence. Although all groups provide reams of evidence, the value of evidence as a resource declines in relation to the other resources. For example, the more the U.S. Environmental Protection Agency (EPA) uses scientific advisory councils or buys expertise, the less resource mobilization potential it gains for each unit of evidence. The law of diminishing returns is also true for social resources.

The symbolic nature of risk issues for distributional conflicts. Risk arenas attract social groups that demand legitimation of existing distributional practices. The risk as such may not be the trigger for entering the stage but rather its symbolic meaning for decision-making processes in society and for existing power structures. Such groups use the risk arena to mobilize social resources to influence policies in other arenas. They may oppose big business or favor deregulation. Regardless of their motives or goals, actors in risk arenas are not always interested in the risk issue per se, especially if it has become a symbol for other issues. The best example of such symbolization is the struggle over nuclear power. Groups in this arena are not only concerned about risks of nuclear power, but view the debate over nuclear power as a surrogate for larger policy questions about desired lifestyles, political structure (e.g., centralization vs. decentralization), and institutional power (R. C. Mitchell 1980; Freudenburg and Baxter 1985; Rosa, Machlis, and Keating 1988). Fighting against nuclear power gives the protagonists social resources they need to fight their "real" battle. In highly symbolized arenas, evidence about actual impacts is almost meaningless for the actors, but is still a desired resource to mobilize support.

Social desirability. The tendency to use a risk arena for other purposes is also reinforced by the saliency of the risk issue for the audience. Affluent societies show strong concerns for health, safety, and environment (Dunlap 1989). Mobilization strategies that build on common concerns can be very effective in generating value commitment and social influence. "Hot" risk issues are therefore excellent vehicles on which to piggyback one's own claims.

Structural weakness of risk management agencies. Risk management agencies face the dilemma of dealing with ambiguities and thus often do not succeed in exchanging power for other desired resources. In particular, they have difficulties exchanging evidence from institutional sources for trust, since the evidence is so often contested. As a result, they are unable to mobilize social resources beyond their power reservoir. Because of the weak position of the rule enforcement agencies, risk arenas tend to expe-

rience more rule innovations than other arenas where strong enforcement agencies are present. At the same time, agencies in risk arenas have less influence in resolving conflicts and persuading the actors to participate in negotiations.

The experience of confusion and distrust. Most people are confused about the competing claims of evidence by different social groups. In order to cope with this confusion, they have developed several strategies. In general, they tend to amplify the risks of collective risk sources ("better safe than sorry") and to attenuate the risks of individualized risk sources ("Why change? Even the experts can't agree on the risk"). Examples of collective risk sources are centralized technologies or chemicals in drinking water; examples of individualized risk sources are obesity, indoor radon, and other lifestyle factors (Renn 1990). Furthermore, the spectators of risk debates experience frustration and anger over the inability of the social actors to provide unambiguous evidence. As they lack immediate experience to judge the seriousness of modern risks, they tend to moralize the issue, a common resolution of factual confusion (Scheuch 1986). Moralization is a mechanism that allows spectators to form attitudes or opinions about an issue even if the beliefs about the factual outcomes indicate uncertainty or ambiguity. Moralization polarizes positions on risk policies. One position assumes that all risks are morally unjustified as long as they are capable of killing a single individual ("no compromise"); the opposite position claims that risks are inevitable side products of the desired and morally justified progress of society ("no free lunch"). Which of the two sides the spectators take may indeed be a function of cultural preferences (Douglas and Wildavsky 1982b). Social actors in risk arenas use moralization and polarization because both processes provide them with value commitment and social prestige.

Political paralysis. The plurality of evidence, the weak role of rule enforcement agencies, the tendency of the risk debate to attract symbolic connotations, and the public responses of moralization and polarization have all contributed to political paralysis: None of the actors is able to mobilize sufficient resources to force others to accept their viewpoint or to invest in a compromise. Evidence is contested, so that it cannot play a more integrative role in forging compromises; value commitment is polarized; social prestige is distributed among various adversarial camps; money experiences problems of legitimation in the risk arena; and power is insufficient. Sometimes power can triumph if the issue cools off over time and the actors become disenchanted with the issue or less vigilant. Many risk arenas, however, end in political paralysis. Some groups may benefit from paralysis, but in many cases all groups fail to reach their desired goals.

In arenas with highly ambiguous evidence presented by different actors, weak rule enforcement agencies, and a lack of immediate personal experience about the potential consequences of political decisions, the generation and distribution of resources relies almost entirely on the success of com-

munication efforts (Gale 1986). Social prestige and value commitment become powerful resources because evidence is inflated and power or money are insufficient to dominate the debate. The recent emphasis on risk communication as a means to generate trust and commitment is a clear indicator of this situation (Plough and Krinsky 1987).

Arena Theory as a Tool to Investigate Risk Conflicts

Arena theory is not a new theory. It has been proposed by several scholars (Lowi 1964; Kitschelt 1980; Hilgartner and Bosk 1988) and has been endorsed by others for providing a particularly rewarding framework for the analysis of risk and environmental policies (Tierney 1989; Rucht 1990). So far, however, the theoretical foundations of arena theory have been scattered over the literature, and its application to risk and environment has been no more than cursory. It is my conviction that arena theory provides an excellent conceptual and sequential framework for conducting sociological research for explaining risk conflicts. In an idealized format, such a research project could be organized in the following way:

- Selection of an arena (or a stage within an arena);
- Identification of major actors and their *stated* objectives (through interviews, value trees, etc.);
- Identification of the formal and informal arena rules (through document study, interviews, etc.);
- Search for clues about the availability of resources to each actor (financial situation, legal authority, social status, cultural affiliations, and access to scientists or science institutions);
- Analysis of the role, position, and strength of the rule enforcing agencies (legal power, image, trust, etc.);
- Analysis of the communications patterns between the actors, issue multipliers, spectators, and the general public;
- Design of a model capable of explaining actors' behavior and conflict outcomes as a function of resource availability and mobilization potential; and
- Transfer of model to other risk arenas or political arenas in general.

The social arena theory can be used as a structural tool to conduct exploratory studies or as a modeling tool to interpret and structure empirical data. One of the many challenges of using this theory is quantification of the resource reservoir and of the mobilization potential. Money and legal power can be measured at least on an ordinal scale, whereas value commitment, social influence, and evidence are difficult to quantify. It may also prove difficult to measure the dependent variable: influence on policies. Competing theories, however, have nothing better to offer. They either are

fixated on easily measurable variables or use anecdotal evidence for their claims. I believe that arena theory has the potential to become a theoretical concept that can be operationalized for empirical research, but it will need further conceptual and instrumental specification.

In terms of a normative theory for risk policies, the arena concept can provide a framework for organizing discourses on risk or structuring conflict resolution procedures. Furthermore, it provides an analysis of constraints and problems any risk policy maker is likely to face in the respective arena. If actors in an arena can win only by mobilizing resources, they will not engage in an organized discourse unless they are convinced that this route will help them to add resources to their reservoir. Although resource mobilization is not a strict zero-sum game, actors are aware that not every participant can win in a discourse. For this reason, they will cautiously evaluate their opportunities and risks and then decide whether to participate or stay outside. Actors with lots of available resources are particularly reluctant to get involved in a discourse in which their equal footing with all other parties would erode their position of strength. Arena theory helps policy makers gauge the responses they can expect and the problems they are likely to face.

CONCLUSIONS

Arena theory is capable of explaining social group responses to risk issues and of interpreting institutional and political actions directed toward risk reduction and risk management. What are the advantages and problems with this approach compared with other competing approaches?

First, arena theory explains the obvious observation that risk conflicts may not be about risks at all but about symbolic issues associated with risk debates. Many analyses of risk debates focus on the perception of risks of the various actors without acknowledging the social, political, or cultural context in which the risk debate takes place (Otway and von Winterfeldt 1982). The arena metaphor focuses on both the structural rules of the arena and the perceptions of the actors.

Second, arena theory tries to encompass all those social factors that researchers have identified as influential for the social experience of risk. Among them are the symbolic and moral content of issues, the possibility of using risk as a surrogate for other issues, the influence of the media and social networks, the importance of interests, values, and cultural affiliations, the structure and style of the political regulatory system, and the dynamics of social interactions among the major participants. The breadth of influential factors notwithstanding, the theory suggests a clear focus and structure. Its emphasis is on social resources and their impacts on policies. This focus makes the theory valuable for designing research projects and for selecting relevant phenomena for analysis.

Third, arena theory makes no inference about the actors' intentions or motivations. It focuses on their ability to mobilize resources. Conflicts in an arena are certainly grounded in differences in goals, values, and interests. Whether social research can measure them objectively or reveal them beyond speculation about true motives is still an open question. There is no need to provide a final answer to this question, however, if the focus is only on the means by which actors can influence the process. If these means include the overt statement of goals (which may often be the case, especially for value commitments), then they become part of the general strategy and thus an incentive for generating resources. Making resources the focus of research avoids the structural imperialism of Marxist approaches ("we know the real interests of the actors") and the relativism of the social constructivist, who would insist that only empathy with each group can help us reveal their real motives.

Fourth, by avoiding the question of motivation, arena theory does not imply a rational actor approach (in choosing ends or means), nor does it assume that groups want to maximize their interest, nor does it prestructure a group profile, as does the cultural theory of risk. Whatever the goals of the actors are, they can only accomplish them by mobilizing resources. Availability of resources provides the bargaining power to influence the outcome of the policy process.

Fifth, arena theory avoids the relativism or solipsism of the social construction theories and at the same time the structural determinism of neo-Marxist theories and many applications of critical theory. It provides an intersubjective anchor for determining success in a political arena. The fundamental axiom is that resource availability determines the degree of influence for shaping policies. If this axiom is correct, social arena theory provides an elegant and powerful instrument for the analysis of social issues in general and risks in particular.

No theoretical framework is without limitations, however, The social arena concept leaves the impression of politics as a game in which players want to win and spectators want to be entertained. Although some political debates support this impression, others certainly do not. Many debates are characterized by a good faith effort of all actors to improve a situation or to resolve a conflict. The emphasis on social resources may obscure the fact that not all political actions are strategic and that people often mean what they say. In addition, the division between actors and spectators seems to support a concept of democracy in which elites fight for power and influence and the masses are used as instruments for these elites to gain relative advantages.

I do not share this impression. I strongly believe that the arena concept can account for honest and altruistic actors and an aware and attentive public. As in modern theater, the audience may participate in the play if they so wish. The exclusion of motivations from arena theory is not premised

on the assumption that people lie all the time, but by the observation that motivations do not count as a mobilization resource unless they are strategically linked with one of the five generic social resources. Nonetheless, the arena metaphor does lend itself to a cynical interpretation of the political process. As with most metaphors, there are limits beyond which the analogies become counterproductive.

Another problem with arena theory is its empirical operationalization. Since resources include economic, social, political, cultural, and scientific aspects, almost any social behavior can be interpreted as a resource mobilization effort, and any policy outcome can be interpreted as a product of these prior mobilization efforts. If this is true, the theory may still be good as an explanatory framework or a guide for data selection, but it cannot be tested empirically. Thus we do not speak about the theory as true or testable, but rather as functional. Although this is a serious problem, I believe that attempts to quantify the resources and link them to policy outcomes will show that arena theory provides nontrivial relationships between resource mobilization and policies. If the five resources can be operationalized so that they do not include all behaviors that groups demonstrate, the theory can be tested and potentially falsified.

As indicated earlier, social arena theory may produce only weak predictions of arena outcomes because the structural rules of arenas change and synergistic effects of interactions are difficult to anticipate. The theory may advance our knowledge, however, about present arenas and the actors within each arena. This knowledge can also help to restructure arenas or to assist the actors in the arena to overcome stalemates and to reach a viable compromise.

Finally, arena theory is limited to the social processing of risk issues in political debates. It does not include individual perceptions or the motivations of individuals or groups to join a specific arena. Furthermore, it is based on a pluralistic and democratic policy style that is prevalent in the United States and many European countries, but is certainly not a universal style throughout the world. Arena theory does not pretend to be an integrative approach to include all relevant risk experience. It is rather a specialized framework for studying group responses to risk and to explain the dynamics of social conflicts within a special political system.