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## Rational Choice, Situated Action, and the Social Control of Organizations

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The legal and administrative apparatus responsible for the social control of organizations relies extensively on the deterrent effects of punishment. This strategy presumes a rational choice model of organizational misconduct that decontextualizes decisionmaking, emphasizing consequences while ignoring how preferences are formed. I raise three challenges to the rational choice/deterrence model of social control: (1) research and theory on decisionmaking, (2) a sociological paradigm that situates individual action in a structure/culture/agency nexus that influences interpretation, meaning, and action at the local level, and (3) an analysis of the *Challenger* launch decision at NASA as situated action, showing how structure, culture, and history shaped preferences and choice. These challenges suggest a need to reorient regulatory activity toward the social context of decisionmaking. I conclude with a research agenda to explore the relationship between situated action, preference formation, and rational choice.

**M**anagement decisions in the business world that value competitive and economic success more highly than the well-being of workers, consumers, or the general public so often have come to public attention that today's most widely accepted model of corporate criminality portrays managers of profit-seeking organizations as "amoral calculators" whose illegal actions are motivated by rational calculation of costs and opportunities (Kagan & Scholz 1984). Driven by pressures from the competitive environment, managers will violate the law to attain desired organizational goals unless the anticipated legal penalties (the expected costs weighed against the probability of delaying or avoiding them) exceed additional benefits the firm could gain by violation. The amoral calculator model locates the cause of business misconduct in the calculations of individual decisionmakers. It reflects the logic of sociological rational choice theory

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(Hechter 1987; Friedman & Hechter 1988; Cook & Levi 1990; J. S. Coleman 1990a; Hechter & Kanazawa 1997), but with one important distinction. When decisionmakers' calculations of costs and benefits are tainted by self-interest, economics, or politics so that *intentional* wrongdoing and/or harm result, their calculation becomes amoral.

The amoral calculator model also has wide acceptance as an explanation for the misconduct of other types of organizations that violate laws, administrative rules, and regulations. Though not corporate profit seekers, to survive, all organizations must compete for scarce resources (Pfeffer & Salancik 1978; Vaughan 1983:54–66). Competition for scarce resources encourages research institutions to falsify data in order to win grants and prestige; universities to violate NCAA recruiting regulations in order to guarantee winning athletic teams; police departments to violate the law to make arrests that bring recognition and funding; political parties and governments to commit illegalities to secure national and international power. In response to competitive pressures emanating from the external environment, according to the amoral calculator model, individuals attempt to achieve organization goals through violative behavior. The linchpin of the model's applicability to a variety of organizations is the violative behavior itself: Because laws, rules, or administrative regulations forbid the behavior and carry penalties, decisions to violate appear to be imbued with intent, calculation of costs and benefits, and some degree of forethought about harmful consequences.

Punishment is considered an important tool for the social control of organizations because of institutionalized beliefs that the ultimate cause of organizational offending is rational actors who will include the costs of punishment in their calculations and be deterred from violative behavior. Most certainly, the legal and administrative apparatus for the social control of organizations utilizes diverse approaches (e.g., Clinard & Yeager 1980; Bardach & Kagan 1982; Simpson 1992). Despite alternatives, however, punishment often is a key regulatory strategy, either for the organization, its responsible members, or both (e.g., Hawkins 1984; Reiss 1984; Braithwaite 1985, 1989; Ayres & Braithwaite 1992). The priority given a legalistic deterrence approach has persisted under two ironic conditions. First, research has produced little data about how decisions to violate are made. It may be true that in many circumstances, decisions to violate fit the amoral calculator model. But absent a body of research examining these decisions, strategies for control will rest on untested assumptions. Second, research has produced abundant data affirming regulatory ineffectiveness in controlling organizational misconduct (Stone 1975; Coffee 1977, 1981; Ermann & Lundman 1978; Katz 1979; Anderson 1980; Diver 1980; Wheeler

& Rothman 1982; Wheeler, Mann, & Sarat 1988; Shapiro 1984; Ewick 1985; J. W. Coleman 1987; Cullen, Maakestad, & Cavender 1987; Vaughan 1990; Weisburd et al. 1991). Regulators do regulate effectively in many specific cases, but this body of research indicates that the sources of regulatory failure are socially organized and systematic, so that across cases the efficacy of the legalistic deterrence model is undermined. Perhaps strategies other than punishment should be given greater consideration and priority.

In this article I take the position that to lay a foundation for strategies for control that are maximally effective, the sociolegal research agenda must include efforts to develop greater understanding about the causes of organizational misconduct. The amoral calculator model decontextualizes decisionmaking. However, the choices people make tend to be rational within situational contexts. Consequently, I argue for case studies that explore decisions to violate in naturalistic settings in order to investigate the link between social context and preference formation, the uncharted territory of rational choice theory (Cook & Levi 1990:1–16; Hechter & Kanazawa 1997). I support this position with three challenges to a rational choice/deterrence model for the social control of organizations that justify a skeptical stance about its efficacy.

First, I critique the sociolegal research that has reinforced the credibility of this model. Then, I draw from sociological theory that affirms an alternative model of human behavior as situated action, showing that a fully elaborated explanation of decisionmaking necessarily would merge structure, culture, and agency. Next, I summarize my research on the 1986 Space Shuttle *Challenger* disaster (1996) because the data show that (1) the situated character of social action can shape choices in organizations so that deviance becomes normal and acceptable, rendering deterrent strategies ineffective; (2) nested institutional and organizational forces influence cognition, narrowing options and shaping preferences, thereby affecting what individuals consider rational at a given moment; and (3) purposive social action can result in unanticipated consequences, creating a disjunction between rational choice and outcomes. Finally, I conclude by suggesting a research agenda to explore the relationship between situated action, preference formation, and rational choice.

### **Research Challenges to the Rational Choice/Deterrence Model**

The tendency for the legal and administrative apparatus to prioritize a rational choice/deterrence model for the social control of organizations no doubt originates in a belief fundamental to American culture: the value placed on individualism that lo-

cates responsibility for achievement, accountability, and responsibility in the single actor (Tocqueville 1969; Bellah et al. 1985). This cultural belief has been reinforced by sociolegal research on structural variables related to white-collar and other forms of organizational misconduct. Quantitative studies using organizations as the units of analysis (usually corporations) consistently have identified a correlation between competition, economic strain, and violative behavior (Sutherland 1949; Staw & Swajkowski 1975; Clinard & Yeager 1980; Simpson 1986). The impossibility of micro-analysis of choice in this research notwithstanding, the persistent relationship between economic strain and violative behavior has lent credibility to an amoral calculator model of decisionmaking that goes like this: When an organization experiences structural strain to achieve its goals, individuals acting in their organization roles weigh the costs and benefits of their actions, choosing to violate laws and rules to attain organization goals.

Quantitative research linking structural variables to outcomes is the most common strategy employed in sociological rational choice theory. Rational choice theory is, as Hechter and Kanazawa (1997:208) state, “an inherently multilevel enterprise. It seeks to account for social outcomes on the basis of both social context and individual action.” However, the data and their interpretation remain at the aggregate level, for the theory does not attempt to explain what a rational person will do in a particular situation. Rational choice theorists consider both macro- and micro-level elements to be important determinants of outcomes, but empirical applications place greater emphasis on structural determinants for methodological reasons related to constraints on quantitative measurement of individual values and cognition (Hechter & Kanazawa 1997:193). Instead, sociological rational choice theorists make assumptions about individual cognitive capacities and values, often a subjective–expected utility model. They emphasize consequences, excluding how preconditions shape preferences. Preference formation has no place in the theory, and as Hechter and Kanazawa (1997:195) conclude, “the mechanisms for individual action in rational choice theory are descriptively problematic.”

What is true of sociological rational choice theory also holds for what is known about decisionmaking in the violative behavior of organizations. Assumptions govern and conceal understanding about individual cognitive capacities and values: The amoral calculator model that has offenders calculating the costs and benefits of some known harmful act has remained a hypothesis, often invoked or assumed as an explanation but seldom tested. This research failure is not a failure of interest or imagination; it is a failure of opportunity. Difficult barriers exist to conducting research that explores how decisions to violate are made



(Vaughan 1992a). Absent a full-fledged, systematic research program, the few studies with data on decisionmaking have been influential. The amoral calculator model received early support from Geis's (1967) classic case study of the heavy electrical equipment antitrust case, widely cited and reproduced in anthologies. Presenting the first in-depth view of executives' thoughts and perceptions about their violations, Geis quoted CEOs who stated they were aware of the illegality and its harmful social consequences as they colluded about price fixing. Twenty years later another famous case affirmed the model. Documents surfaced in the Ford Pinto case showing, in writing, Ford executives' calculation of costs and benefits in a redesign decision that juxtaposed the cost of redesign against the quantified loss of human life in accidents if the redesign were not done. Lives had already been lost; nonetheless, production continued (Cullen et al. 1987). Research based on interviews with managers also lent support to the model (Clinard 1983; Jackall 1988; Kram, Yeager, & Reed 1989).

While suggestive and supportive, this evidence remains far from definitive. In the above projects, the researchers were pursuing multiple interests and questions in research informed by other perspectives. Their projects were not designed specifically to study decisionmaking. Therefore, the relationship between the known structural correlates of misconduct—competition, scarce resources, institutionalized norms, organization characteristics, the regulatory environment—and decisions to violate was not part of the agenda (for these correlates, see, e.g., J. W. Coleman 1987; Kramer 1992). Also, rather than studying the process of decisionmaking as it occurred, data availability limited the research, of necessity, to retrospective accounts. As is not unusual in such research, missing still were data on decisions made in real time in organizations.

Nonetheless, sociolegal scholars long have argued that organizational offenders were susceptible to the deterrent effects of punishment (e.g., Zimring & Hawkins 1973; Braithwaite & Geis 1982; Braithwaite 1985). This loyalty to the rational choice/deterrence model for organizational offenders is buttressed by two additional beliefs held in the scholarly community (Simpson & Koper 1992; Weisburd, Waring, & Chayet 1995). First, in contrast to individuals who commit traditional crime, the so-called white-collar offender is believed to be more vulnerable to the costs of punishment because he or she has more to lose as a consequence: social status, job, money, comfortable home, family life (Braithwaite & Geis 1982; Mann, Wheeler, & Bode 1982; Weisburd et al. 1991). This observation makes sense but also is untested: No research has been done that compares the deterrent impact of sanctions on the *perceptions* of violators in formal organizations versus those of offenders who engage in street crime. Second, in contrast to street criminals, whose law-breaking often

lacks planning and evidences spontaneity, organizational illegality appears to be a coolly instrumental act. This belief is supported by evidence of collective decisionmaking in collusive actions (Geis 1967; Baker & Faulkner 1993) and recidivist violators (Sutherland 1949; Clinard & Yeager 1980): The routinization and patterning suggest intentional illegality and knowingly taking actions that do social harm in response to competitive pressures.

Are violations a result of rational calculation of costs and benefits of some harmful social act? Recently, scholars have attempted to map this unexplored terrain. Some have studied decisionmaking indirectly, using violative behavior as an indicator of the presence or absence of deterrence. Simpson and Koper (1992) analyzed recidivism of corporate offenders, finding weak support for deterrence. Weisburd et al. (1995), examining recidivism after incarceration of individual white-collar offenders, found no specific deterrent effect over a 126-month follow-up period. One project showed that legalistic deterrent strategies can have negative unintended consequences: Grabosky (1995:351–53) reviewed several studies showing that in some cases a deterrent regulatory posture actually reduced compliance. Even when research examines decisionmaking more directly, support for the amoral calculator model remains unimpressive. Grabosky (1989) analyzed 17 case studies of misconduct by public sector organizations, finding evidence of careful assessment and weighing of costs and benefits in only 2 of the 17. Several studies used interviews to examine managerial decisionmaking. Simpson (1992:303) concluded that “managers, for the most part, do not think in deterrence terms.” Braithwaite and Makkai (1991) found no support for deterrence. Paternoster and Simpson (1993, 1996) and Simpson (1998) tested deterrence in surveys that used offense-specific models of corporate crime in a vignette design. They found some indication of a deterrent effect in some situations.

At the same time that these recent interview-based studies break new ground with innovative approaches, they also demonstrate the difficulties of research on decisionmaking and illegality. The research designs make the meaning of the results unclear. Testing the deterrent effects of punishment is the stated goal of this research. That individual decisionmakers knowingly and rationally calculate the costs and benefits of punishments is *assumed* at the outset and becomes the basis for the design. Respondents not only are informed that the behavior in question is a violation, but also the researchers make the costs and benefits clear, conditions that seldom hold in real-life decisionmaking in the workplace (Simon 1957, 1976; Gross 1980; Weick 1979, 1995). Further, social context matters: Organizational socialization, culture, financial dependence on the organization, and or-

ganizational mandates have known effects on the thoughts and actions of members (Van Maanen & Schein 1979; Finney & Lesieur 1982; Van Maanen & Barley 1985; Jackall 1988; Martin 1992). Consequently, a person responding to an interview, questionnaire, or vignette is not subject to the same contingencies that would apply when making routine decisions in the workplace. The outcomes, which show either minimal or no deterrent effects, are taken by the researchers as challenges to the study design, not the decontextualized rational choice assumptions on which the designs are based.

Research raises additional reasons for questioning the priority of a rational choice/deterrence model over other possible regulatory options. In contrast to the amoral calculator model, some managers violate for reasons other than instrumental action directly tied to achieving competitive success: incompetence, misunderstanding of laws, or improper attention to regulatory requirements (Kagan & Scholz 1984). Also, how managers actually assess risks in the workplace is far from the systematic calculation the rational choice model implies: Decisionmakers do not weigh all possible outcomes but instead rely on a few key values; the magnitude of possible bad outcomes is more salient, so that there is less risk taking when greater stakes are involved; in practice, quantifying costs and benefits of a line of action is not easy (March & Shapira 1987). Finally, the laws, rules, and administrative regulations designed to guide organizational behavior are likely to be *mala prohibita* rather than *mala in se*; thus the standards to which organizations are expected to adhere and the consequent punishments are not clear to either organization decisionmakers or the public (Stinchcombe 1965:174–75; Calavita, Pontell, & Tillman 1997).

When the effect of the organization as a locus of choice is taken fully into account, social context becomes obvious as an influence in decisionmaking, shaping what an individual perceives to be rational at a given moment. Because of specialization and division of labor, employees may be unaware of their illegality because their action was part of a chain of actions by invisible others: Each individual act was legitimate, but together all the acts constituted a violation of which some individual participants were ignorant (Gross 1980; Finney & Lesieur 1982; Vaughan 1983). Also, an extensive body of research and theory on decisionmaking in organizations shows that the weighing of costs and benefits does occur, but individual choice is constrained by institutional and organizational forces: Decision practices and outcomes are products of external contingencies, political battles, unacknowledged cultural beliefs, and formal and informal internal pathologies that undercut both the determination of goals and their achievement (Dalton 1950; Allison 1971; Zucker 1977; Feldman & March 1981; Wildavsky 1987; Feldman 1989).

These constraints on choice are reinforced in organizations as executives set the premises for decisionmaking through organizational routines that reduce uncertainty. Decisionmaking is more an example of rule following than of calculation of costs and benefits. Rationality is constrained further: The organization has limited abilities to search for information and solutions to problems; individuals have limited knowledge of alternatives, access to and ability to absorb and understand information, and computational capacity; the decisionmaking process is influenced by deadlines, limited participation, and the number of problems under consideration. Rather than a model of perfect rationality, decisionmaking in organizations is characterized by “bounded rationality”; performance is described as “satisficing” rather than optimizing (Simon 1957, 1976; March & Simon 1958). The notion of individual rationality has become so circumscribed and discredited that some organization theorists even have described the decision process by the “garbage can model” (March & Olsen 1979) and characterized managers as “muddling through” (Lindblom 1959)—a far cry from the imagery of cool, calculated managerial capability suggested by the ideology of rational choice theory. In fact, Weick (1979, 1995) argues that often the only rationality that might be credited to the process is imposed retrospectively by participants in order to justify a particular decision. Wilensky’s (1967:vii) observation sums up the case against a decontextualized rational choice model from an organizational behavior perspective:

Too many critics of the organizational and political sources of our troubles see diabolical plots where there is only drift, a taste for reckless adventure where there is only ignorance of risks, the machinations of a power elite where there is, in William James’ phrase, only a “bloomin’ buzzin’ confusion.”

This review of decisionmaking research shows many reasons to be skeptical about prioritizing a rational choice/deterrence model for the social control of organizations. In particular, the research on organizational behavior points to an alternative model of decisionmaking demonstrating the ties between social context and rational choice. A second challenge to the rational choice/deterrence model comes from sociological theory articulating social life as situated action. The situated action schema contests the consequentialist, means-ends orientation that typifies rational choice theory, showing that (1) social contingencies influence decisionmaking by narrowing options and shaping preferences, and (2) purposive social action can have unintended consequences. Even more convincingly than the decision-making literature, this schema suggests that a social control strategy that manipulates the consequences of choice does not go far enough.

## Situated Action: The Structure/Culture/Agency Nexus

A fundamental sociological understanding is that interaction takes place in socially organized settings. Rather than isolating action from its circumstances, the task of scholars is to uncover the relationship between the individual act and the social context. This argument appears in the history of sociological thought as a common thread running through the work of such otherwise diverse thinkers as Herbert Blumer, Erving Goffman, Max Weber, George Herbert Mead, Harold Garfinkle, George Homans, and Talcott Parsons. Five recent theoretical developments allow us to build on these understandings about the situated character of social action, showing a more complex and complete picture. These developments suggest that the merging of levels of analysis is required for a full theoretical explanation of any particular behavior; they also provide a conceptual apparatus that indicates what needs to be included in research to make full explanation possible.

The first development is the extensive theoretical literature that establishes the relationship between structure and agency. At the same time these debates ferret out the complexity of the macro-micro relationship, they lay the groundwork for research examining it (Maines 1977; Giddens 1979, 1984; R. Collins 1981; Knorr-Cetina & Cicourel 1981; Alexander et al. 1987; Fine 1992; Sewell 1992; Emirbayer & Mische 1998). The second development is that culture has entered the picture as a mediating link in the structure/agency relationship. Theorists are refining the link between an individual's position in a structure and interpretive practices, meaning, and action at the local level (Bourdieu 1977; Hall 1987; Smith 1987; Haraway 1988; P. Collins 1990, 1991; Emirbayer & Goodwin 1994; Hays 1994). This nexus is identified in phenomenology as "lifeworld," by Michel Foucault as "episteme," by Pierre Bourdieu as "habitus," by Dorothy Smith and Patricia Collins as "standpoint." Although differing in important ways, each perspective draws attention to culture: the tacit understandings, habits, assumptions, routines, and practices that constitute a repository of unarticulated source material from which more self-conscious thought and action emerge. Also significant is the role of history: Both the macro-level historic moment, as its normative and legal standards affect individual tacit understandings, and micro-level individual history/experience are critical to individual interpretation and meaning (Elias 1993; Emirbayer & Mische 1998).

The important role of culture in situated interpretation, meaning, and action is reinforced by a third development: the new institutionalism, which explains that organizational forms and behaviors take the form they do because of prevailing values and beliefs that have become institutionalized to varying degrees

(Meyer & Rowan 1977; Zucker 1977; Powell & DiMaggio 1991). New institutionalists argue that cultural rules constitute actors (state, organizations, professions, and individuals), thus defining legitimate goals for them to pursue and therefore affecting action and meaning at the local level. Decisionmaking, from this perspective, is always rational; however, institutionalized categories of structure, thought, and action shape preferences, directing choice toward some options and not others (Douglas 1987; Wildavsky 1987; DiMaggio & Powell 1991:10–11). Because the generalized rules of the institutionalized environment are often inappropriate to specific situations, outcomes may be less than optimal and, to some extent, unpredictable (Meyer & Rowan 1977). The fourth development is Granovetter's (1985, 1992) work on the socially embedded character of economic action. Granovetter points to the relative autonomy and/or relative dependence between the forms of economic action and social organization and the institutionalized cultural belief systems within which they are located. In contrast to the new institutionalism, agency is at the heart of this analysis. Agents can be individuals or organizational forms, but the embeddedness perspective prohibits reduction to a decontextualized rational actor. Because agency is central, economic action can take a variety of forms, so in a common cultural system variations will exist that cannot be explained in cultural terms only.

The fifth recent theoretical development is the sociology of mistake. It was prefigured by Merton's (1936) argument that purposive social action produces unanticipated consequences. Purposive action is "conduct" as distinct from "behavior," conduct being "action which involves motives and consequently a choice between various alternatives" (p. 895). Merton observed that individual action can result in unintended consequences that can be differentiated into consequences to the actor(s) and consequences to others that are mediated through social structure, culture, and civilization (*ibid.*). His point is that the results of purposive action can be *unexpected*, not that they are suboptimal. Merton focuses at length on the social influences on choice. Unintended outcomes have many sources, including (1) limited knowledge (p. 900) and (2) the taken-for-granted aspects of cognition that may lead to error (pp. 896, 901).

Merton's theorizing finds reinforcement in several complementary strands of work that combine to build a sociology of mistake (Vaughan 1999). The possibility of mistake is scripted into the layered situated action schema, showing that social context can decouple rational choice from outcomes as follows. The structural preconditions of unexpected outcomes are etched into the relational and cultural frames of the embeddedness perspective and the new institutionalism (Granovetter 1985; Powell & DiMaggio 1991). Both articulate a taken-for-granted rationality



that leaves room for unexpected outcomes. At the organization level, rational choice leading to unintended consequences finds support in the Carnegie School (e.g., Simon 1957, 1976; March & Simon 1958; March & Olsen 1979), classic studies of informal organization (e.g., Roethlisberger & Dickson 1947; Giallombardo 1966; Bosk 1979), research on work as error-ridden activity (Hughes 1951; Paget 1988), and the now-burgeoning literature on risk, accidents, and disaster (for a review, see Turner & Pidgeon 1997:169–95). At the micro-level, agency is further contextualized in ongoing work in cognitive psychology and cognitive sociology that joins culture and cognition (for a review see DiMaggio 1997). This work also affirms the possibility of mistake; moreover, it affirms culture as a mediating link between structure and agency (see especially Zucker 1977).

This complex conceptual package illuminates many aspects of situated action. Decisionmaking, in this schema, cannot be disentangled from social context, which shapes preferences and thus what an individual perceives as rational. Moreover, the situated action paradigm acknowledges that purposive social action can regularly produce unexpected outcomes, thus challenging all rational actor accounts of social behavior. Finally, it draws attention to the need for research that examines the structure/culture/agency nexus. A full theoretical explanation of the action of any social actor needs to take into account, to the greatest extent possible, its situated character: Individual activity, choices, and action occur within a multilayered social context that affects interpretation and meaning at the local level. Not only the nested character of social action (Jepperson 1991) but also the dynamic interplay between structure and agency (Fombrun 1986; Smith 1987; Friedland & Alford 1991) begin to suggest the difficulty of doing empirical work that targets the situated interpretive work that precedes every social act. Moreover, doing research that encompasses all these elements requires (1) researcher expertise at studying both structure and agency and (2) data that make a full analysis of situated action possible—two resources often absent. It is easy to understand why the theoretical debates about the relationship between structure and agency have not spawned a flurry of empirical work aimed at bridging the macro-micro gap. Instead, what is happening is that numerous scholars carve out a particular locus of inquiry: Researchers cast their studies at either the macro- or micro-level, but not both. They take a slice of the whole, thus offering a measured but nonetheless partial view—and thus a partial explanation—of the socially organized character of group life.

Given the complexity of situated interpretation, meaning, and action, and the obvious difficulty of doing an empirical analysis of the structure/culture/agency nexus, one might logically ask, Why bother? There is, of course, the enduring curiosity and

desire to solve puzzles about how the social world works. But we also live in a world with social problems to be solved. The social control of organizations is one of them.

### **The Connection between Cause and Control**

To be effective, strategies for social control should target the causes of a problem. The closer we come to establishing the relationship between situated action, rational choice, and organizational misconduct, the better the understandings on which social control can be based. Research and theoretical explanations that isolate one level of analysis for attention automatically and implicitly suggest strategies for control that do not take into account relevant factors at other levels. This is not to say that isolating a particular level of analysis for research is no longer a worthy enterprise: Doing so helps us flesh out the details of situated action. Yet we need to bear in mind both the practical and political implications of our work. When we restrict our analysis to the individual, social-psychological, or structural level of explanation, we have isolated one element from the many that make up situated action. A partial explanation, no matter how important the finding, leads to a partial, or incomplete, strategy for social control. A decontextualized rational choice model locates cause at the individual level of analysis, suggesting strategies for control that target responsible individuals: ethics training, punishment, forced resignation, and so forth. While these are appropriate strategies, they are incomplete: They leave the social context untouched, tending to systematically reproduce misconduct.

Sociolegal scholars have acknowledged organizations as the locus of misconduct. Research has explored both the causes of organizational offending (Reiss 1966; Ewick 1981; Finney & Lesieur 1982; Wheeler & Rothman 1982; Braithwaite 1984; Shapiro 1987; Kramer 1992; Barlow 1993; Reed & Yeager 1996; Punch 1996; Abolafia 1996; Passas 1990, 1997) and the social control of organizations (for an excellent overview, see Edelman & Suchman 1997). Both research and theory show that the organization and its environment have a causal relationship to misconduct. But in the absence of research that explores the relationship between these structural factors and decisions to violate, gaps in knowledge remain that may have serious implications for the social control of organizations. Case studies in naturalistic settings (Manning 1986) can explore decisions to engage in organizational offenses as situated action, but to date the opportunity to do so has been infrequent.

The 1986 *Challenger* tragedy produced data that opened up the structure/culture/agency nexus, generating the grounded situated action schema presented in the preceding section (Vaughan 1996). My data were personal interviews, government

investigation reports and hearing transcripts, publications by historians, scientists, engineers, and journalists, plus more than 200,000 original National Aeronautics and Space Administration (NASA) and contractor documents, assembled by the Presidential Commission investigating the disaster and stored at the National Archives, Washington (Presidential Commission on the Space Shuttle *Challenger* Accident 1986). The latter archive included over 9,000 pages of legal deposition transcripts, documentation of NASA rules and procedures, engineering reports, risk assessments, correspondence and memos, safety panel reports, daily engineering activity sheets, pre-launch decisionmaking records, and computerized problem tracking system printouts. These resources allowed me to make a chronological reconstruction of the history of decisionmaking about the Solid Rocket Boosters, the technical cause of the accident, at NASA from 1977 through the *Challenger* launch. The result is a historical ethnography of decisionmaking in a naturalistic setting that situates decisions within the structures and processes that shaped interpretive work, preference formation, and choice.

The case is an empirically based third challenge to the rational choice/deterrence model of social control. It shows how (1) the preconditions of choice established the very criteria by which NASA decisionmakers discovered their preferences, rendering some choices unviable and encouraging others; (2) the intersection of history, culture, structure, and choice blinded people to the harmful consequences of their actions, so that they believed benefits, not costs, would result; and (3) purposive social action can result in unanticipated consequences, thereby decoupling rational choice from outcomes. There is not room here for more than a summary. Thus I cannot reproduce the ethnographic thick description in the original that shows the negotiation of meaning, its contested character, and how shared cultural understandings can coexist alongside differences and unsettled disputes. Lost, too, is the role played by coincidence, disorganization, fumbling, and just plain not knowing. Also, only a few citations to key ideas are included. My purpose is to present, in broad strokes, the grounded theory of decisionmaking at NASA in order to sensitize readers to the major social arrangements that shaped the *Challenger* launch decision and the import of situated action for rational choice.

### **How Deviance Became Normal: The *Challenger* Case**

In the aftermath of the tragedy, the historically accepted explanation of the controversial 1986 *Challenger* launch decision conformed to the amoral calculator model. Warned by contractor engineers that launching was risky in the unprecedented cold temperatures that were predicted at launch time, NASA manag-

ers nonetheless proceeded with the launch because the schedule had become all-important at the space agency. Underfunded by Congress, the Space Shuttle program depended on income from commercial satellite companies: the greater the number of flights per year, the greater the number of commercial payloads, the greater the income. Realizing the importance of schedule (the historically accepted explanation went), the managers who were immediately responsible for the decision responded to these pressures by disregarding the advice of their own engineers, knowingly violating rules about passing safety concerns up the hierarchy in the process. Seven astronauts, including Christa McAuliffe, Teacher-in-Space, lost their lives. The conjunction of competitive pressures, scarce resources, rule violations, and overriding of the objections of engineers suggested intent: managerial decisionmaking as violative behavior—a calculated, amoral, consequentialist, rational choice.

Production pressure played a critical role in the fatal decision, but the historically accepted explanation of why *Challenger* was launched was wrong. Many key assumptions supporting it were flawed. Most critical for establishing the intent implicit in an amoral calculator explanation, NASA documents describing rules and procedures showed that managerial actions identified as rule violations by the Presidential Commission were in fact actions that conformed to NASA rules. The data forced me to conclude that the disaster resulted from mistake, not misconduct. Because no rules were violated, the case does not conform to traditional understandings of organizational misconduct that have employees violating laws and rules in pursuit of organization goals, nor does it exhibit the intent to do wrong implied in the amoral calculator model of decisionmaking. However, the analysis resulted in a discovery of even greater significance for theories of organizational misconduct than anything I originally envisioned. My case study shows that in the years preceding the *Challenger* launch, engineers and managers together developed a definition of the situation that allowed them to carry on as if nothing were wrong when they continually faced evidence that something *was* wrong. This is the problem of the normalization of deviance.

The story begins, not on the eve of the *Challenger* launch, when managers and engineers argued about whether to go forward or not, but nearly 10 years earlier. The past—previous engineering analysis, conclusions, and launch decisions—was an all-important context for decisionmaking on the eve of the launch. Prior to the *Challenger* launch, the Solid Rocket Boosters (SRBs) were often damaged on shuttle missions. After each incident, the work group recommended to their superiors to accept risk and fly. After the disaster, continuing to launch despite evidence of damage on many flights seemed not only deviant but an amoral,

calculated choice to a public shocked by the death of the astronauts. Why didn't they stop launching until they had solved the problem? Because at the time decisions were being made, each technical anomaly was first defined as an escalated risk; then, after engineering analysis, decisionmakers redefined it as normal and acceptable. Each decision seemed logical, rational, and non-controversial as cumulatively they expanded the amount of technical deviation that was acceptable. Flying with frequent and increasingly serious anomalies became routine and officially condoned. Three factors, in combination, explain the normalization of technical deviation at NASA: the production of a cultural belief system in the work group, the culture of production, and structural secrecy.

### **The Production of Culture**

Risk assessment was a bottom-up process at NASA. The managers and engineers assigned to do the technical work on Space Shuttle component parts assessed risk daily, using NASA guidelines and relying on engineering tests, post-flight analyses, and calculations. Then, in a formal pre-launch decision process known as Flight Readiness Review (FRR), these work groups presented their risk assessments and recommendations about launching to superiors in what was a multilayered, multiparticipant, adversarial review process. Because the shuttle design had no precedent, risk was always negotiated and often controversial. But in order to launch shuttles, work groups had to assay each technical component and find it an "Acceptable Risk," following prescribed NASA and engineering methods. Arriving at this official designation had them routinely converting technical uncertainty into certainty.

Culture can be thought of as a set of solutions produced by a group of people as they interact about the situations they face in common. These solutions become institutionalized, remembered, and passed on as the rules, rituals, and values of the group (Van Maanen & Barley 1985). As the members of the SRB work group interacted about their task, their interpretive work became the basis for an official definition of the boosters as an "Acceptable Risk." The SRB work group's definition of the situation became an institutionalized cultural belief. To understand how this cultural belief originated and continued as returning flights showed continual signs of booster damage, we start with micro-level influences on decisionmaking. Two were important: social context and patterns of information. They affected the interpretive work of the work group, so that what appeared to the public in the aftermath of 28 January 1986 as clear and undeniable signals of danger were interpreted as weak signals, mixed signals, or

routine signals by the engineers making risk assessments as the decisions were being made.

Initially, no technical deviations in booster performance were predicted by engineers. When anomalies began occurring, social context affected the SRB work group's interpretation of the damage. The immediate social context was one in which having technical problems was normal and expected because (1) the design was unprecedented and therefore untested in flight and (2) the shuttle was designed to be reusable. Consequently, having booster anomalies was not deviant because engineers and managers expected that all returning flights would have some damage that had to be fixed prior to the next launch. Patterns of information as boosters were inspected after each mission also affected the definition of the situation. Most launches had no booster anomalies. When they occurred, they seemed to be random. Post-flight engineering analysis indicated these technical deviations were shaped by "local conditions": peculiarities that were nonsystemic in origin. Each time, engineers were able to identify the cause of the failure and fix it, assuring themselves by tests, calculations, and scientific methods that the problem was within the bounds of acceptable risk. Subsequent missions would have no anomalies. Then a new incident would occur.

The preexisting definition of the situation, and the scientific procedures and engineering analysis on which it was based, became the context against which the risk of each succeeding anomaly was measured. Each incident was assessed in light of a gradually developed engineering analysis about conditions that might occur and the boosters' ability to tolerate those conditions. The incremental character of damage also had a normalizing effect. Had all the changes occurred at once, had damage been occurring on every flight due to a common cause, or had there been a discernable pattern of damage, the work group would have had some strong, clear signals with the potential to challenge the cultural belief in risk acceptability. Instead, the damage occurred incrementally, each incident's significance muted by social context and a learning-by-doing approach that had engineers interpreting each episode as separate and local.

The immediate social context and patterns of information explain *how* the cultural belief in acceptable risk developed. But *why* did their official definition of the situation persist, in the face of evidence of continuing problems? This is the problem of cultural persistence. Macro-level factors—the culture of production and structural secrecy—contributed to and affirmed the work group's belief in acceptable risk prior to *Challenger*.



## The Culture of Production

The culture of production reinforced and maintained the work group's belief in acceptable risk because their actions conformed to its mandates. Thus, they saw continuing to launch under the conditions they faced as normative and conforming, not deviant. By culture of production, I mean institutionalized cultural belief systems that shaped interpretation, meaning, and action at the local level (Van Maanen & Barley 1985; Zucker 1977). These cultural meaning systems affect choice by functioning as institutionalized scripts that convey to people what is normal and acceptable in particular situations. In contrast to the historically accepted explanation that depicted a unidimensional NASA culture dominated by production concerns, the culture of production incorporated three cultural imperatives: the original technical culture of excellence created during the Apollo era (methodological rigor and quantitative science), political accountability (production and cost concerns), and bureaucratic accountability (attention to rules and procedures). Production pressure does not lose salience in this revisionist account but gains importance because of its seductive influence: Production pressures affected the choices of managers and engineers alike, by affecting decisionmaking at a prerational level.

The culture of production existed outside the work group's daily negotiation of risk but had a layered, or nested, character that permeated the group's risk assessment processes (Jepperson 1991). It originated in institutionalized cultural beliefs of the engineering profession that were elaborated in distinctive ways in the NASA organization, permeating Marshall Space Flight Center at Huntsville, Alabama, home of the Solid Rocket Booster Project. Of the cultural meaning systems that typify engineering as a profession, three were influential in work group decision-making. First, in the engineering of unprecedented large-scale technical systems, uncertainty, learning by experience, and developing ad hoc rules to guide technical decisions are taken-for-granted understandings about how work gets done (Wynne 1988). Second, "satisficing," not "optimizing," was normal and acceptable in the engineering profession (Simon 1957, 1976). The education of engineers prepares them to work in production systems where technology is product-oriented and cost/safety trade-offs are routine, so satisficing on design is common and nondeviant (Petroski 1985; Meiksins 1988; Kunda 1992). Third, technical assessments are grounded in "trust in numbers" and "trust in rules": Quantitative methods and scientific objectivity in risk assessment hold sway over intuitive sensibilities (Jasanoff 1986; Porter 1995); engineers are trained to work in hierarchical organizations where rule following is associated with safety (Meiksins 1988; Petroski 1985).

These institutionalized beliefs of the engineering profession materialized in the NASA organization in distinctive ways that contributed to the normalization of technical deviation on the SRBs. During the Apollo program of the 1960s, NASA's original technical culture was founded on a mandate for technical excellence (McCurdy 1993). The emphasis was on the "dirty hands" approach: Contractors were only used occasionally, and most work was done in house so that top administrators and technicians alike got their hands "dirty" by staying in close touch with the technology. This approach was joined by a near-obsessive emphasis on technical excellence, scientific positivism, and rigor in both method and data analysis. However, at the inception of the shuttle program in the 1970s, NASA's purist technical culture was joined by an additional cultural mandate: political accountability that called for attention to cost and schedule (Romzek & Dubnick 1987). As the Apollo program neared its end, consensus for the U.S. space program was undermined by the U.S. involvement in Vietnam. The war created a drain on the budget, raising questions about continued space explorations.

NASA administrators developed the Space Shuttle Program as the post-Apollo goal. Confronted by congressional recalcitrance and opposition, agency administrators proposed that the shuttle would not be a drain on the budget because it would be, to a great extent, self-funding. NASA officials pushed the vehicle as a reusable "space bus" that could fly many missions a year. Designed with a large payload bay, the shuttle would carry experiments from aerospace R&D firms and commercial satellites to be put in orbit, thus collecting money for each mission. When the proposal went to Congress, the projected number of missions assured a continued source of income from a space vehicle that administrators insisted would make space flight "routine and economical." The shuttle was endorsed on this basis. Reduced funding had converted the R&D space agency into one that operated like a business, complete with production cycles and concerns about cost and efficiency.

A second alteration in NASA culture that occurred was that bureaucratic accountability rose in importance (Romzek & Dubnick 1987). Bureaucratic accountability had always been esteemed: Rules were essential for coordinating work and for safety. However, in the 1980s, the agency became bureaupathological. Contracting out, formerly an occasional practice, became institutionalized. The consequence was that an immense new rule structure was necessary to coordinate NASA/contractor relations. The dirty hands approach was compromised: Many NASA engineers and technicians now had contractor oversight responsibilities, so were burdened with procedural tasks and huge amounts of paperwork. Soon after shuttle missions began in 1981, still another layer of bureaucracy was added. The 1980s

were notable for the decreased regulation of business and the increased regulation of government agencies, which imposed another system of accountability on the space agency. The result of these changes was that rule following and procedural conformity rivaled the original technical culture and political accountability. History and politics had not eliminated the original technical culture of the Apollo era, but added political accountability and bureaucratic accountability to it. The result was that engineers and managers assigned to the shuttle hardware were struggling to conform to the mandates of the original technical culture while also conforming to political accountability (cost and schedule) and bureaucratic accountability (procedural requirements).

#### *The Macro-Micro Connection*

The work group conformed to the culture of production, which had an impact on cognition (Zucker 1977). It contributed to the normalization of technical deviation of the SRBs as follows. Post-flight analyses of the Space Shuttle missions produced quantitative evidence (the original technical culture) convincing the work group that the booster design was officially an “Acceptable Risk.” Although they understood that the boosters were working, they did not understand why they were working as they were. Growing doubt, uncertainty, and anxiety about the unknown notwithstanding, concern about cost and schedule (political accountability) inhibited the work group from halting missions for the lengthy period necessary for additional tests. Following the rules, which they unflinchingly did (bureaucratic accountability), had a social-psychological effect. Conforming to every rule and procedure—going by the book—assured them that their official risk assessments were correct, sustaining the cultural belief that the design was an “Acceptable Risk.” Repeatedly and officially, they recommended “Go.” As the problem unfolded in the years prior to *Challenger*, each decision seemed logical, correct, and rational. The social context and patterns of information that affected the definition of the situation were reinforced by the institutionalized cultural frame within which the interpretive work was done.

#### **Structural Secrecy**

Because the process of deviance normalization went on from 1977 until the fatal *Challenger* launch, we must wonder why no one outside the work group noticed and acted. Structural secrecy was the third factor that contributed to the persistence of the work group’s cultural belief in acceptable risk. The effect of structural secrecy was to inhibit people outside the work group from overturning the definition of the situation. Structural secrecy refers to the way that the structure of organizations and

their regulatory relations impedes knowledge and understanding of activities in the workplace. In the aftermath of the *Challenger* tragedy, managers were wrongly accused of individual secrecy: intentionally violating rules to hide information about booster problems from others in the organization. No rule violations occurred. Instead, it was routine characteristics of inter- and intra-organizational relationships—conditions common to all organizations—that concealed the seriousness of the technical problem on the Solid Rocket Boosters from people outside the work group, preventing them from identifying the trend and intervening in some way that might have altered the decisionmaking pattern prior to the *Challenger* launch decision.

Secrecy is built into the very structure of organizations. As organizations grow large, actions that occur in one part of the organization are, for the most part, not observable in others. Division of labor between subunits, hierarchy, and geographic dispersion segregate knowledge about tasks and goals. Distance—both physical and social—interferes with the efforts of those at the top to “know” the behavior of others in the organization—and vice versa. Specialized knowledge further inhibits knowing. The language associated with a different task, even in the same organization, can conceal rather than reveal. Changing technology also interferes with knowing, for assessing information requires keeping pace with these changes—a difficult prospect when it takes time away from one’s primary job responsibilities. Also—and ironically—rules created to communicate more information can result in knowing less. Rules that guarantee wide distribution of information can increase the paperwork on individual desks so that a lot is not read. Executive summaries, although effectively conveying major points, condense and omit information, selectively concealing and revealing.

Paradoxically, NASA had developed both a pre-launch decisionmaking procedure and a safety regulatory system designed to protect against structural secrecy. The formal, hierarchical, pre-launch decision chain known as Flight Readiness Review (FRR) was designed to maximize information exchange by pulling all parts of the organization together for risk assessments prior to a launch. All engineering risk assessments were distributed in advance and orally presented in FRR, where they were critiqued aggressively by people outside the work groups whose sole responsibility was to uncover flaws in the analyses. Moreover, NASA had both internal and external safety review panels designated as safety regulatory agencies with oversight responsibilities in every aspect of technical work. However, structural secrecy remained (Vaughan 1990). While structural secrecy had many unanticipated negative consequences for safety, here I will isolate only one: information dependencies and how they kept people

outside the work group from identifying the pattern of normalizing technical deviation and intervening.

In NASA's bottom-up risk assessment system, it was the work groups' construction of risk—and the engineering evidence support of their assessments—that were the basis for all launch decisions. FRR and safety regulatory systems were designed to challenge and oversee existing risk assessments and the scientific procedures and technical knowledge that went into work group launch recommendations. But the shuttle was made up of 60 million component parts. FRR participants and regulators were inundated with information about each part. Instead of enlightening upper-level managers, the deluge of information obfuscated many problems (Feldman & March 1981). Hence, people with oversight responsibility relied on oral interpretation and briefings in FRR and other inquiries. Removed from the hands-on work and reliant on work groups for the engineering on which risk assessments were based, these others could only challenge what was presented to them. When the SRB work group repeatedly defended its position with quantitative data, as those assigned to the Solid Rocket Booster Project did in the years preceding the *Challenger* tragedy, top NASA administrators and safety officials became persuaded the design was an acceptable risk. The work group's construction of risk was affirmed up the hierarchy, becoming the official organizational construction of risk prior to each launch.

NASA's oversight structure functioned effectively as a review system, but information dependencies interfered with its ability to identify basic assumptions that were in error. The House Committee on Science and Technology, whose investigation followed that of the Presidential Commission, concluded that administrators and regulators only knew what work groups told them:

Flight Readiness Reviews are not intended to replace engineering analysis, and therefore, they cannot be expected to prevent a flight because of a design flaw that Project management [*read*: the SRB work group] had already determined represented an acceptable risk. (U.S. House of Representatives 1986:148, 70–71)

Thus, the official definition of the boosters as an “Acceptable Risk” persisted through the end of 1985. *Challenger* was the first launch of 1986. The decision to launch *Challenger* was one decision in a stream of decisions about the boosters. The debate that night was situated in history and social organization: The interplay of the production of culture in the work group, the culture of production, and structural secrecy affected the interpretive work and action of all participants.

### The Eve of the Launch

The *Challenger* launch had been approved in FRR two weeks before the 27 January eve-of-launch discussion. But this was an emergency meeting, called because the temperature forecast resulted in a revised assessment of risk acceptability for the boosters before launch the next morning. So the 34 participants, located at agency and contractor facilities in Utah, Alabama, and Florida, held the discussion on a teleconference. It was unprecedented in several ways: the predicted cold temperature, the no-launch recommendation that the contractor engineers made, and the geographic locations of the participants. The purpose of the teleconference was to weigh the new circumstances to determine whether the engineering rationale for flight they had developed in preceding years was threatened by the cold. First, history mattered. All who were present that night were assessing new information within a historic and official definition of the situation: the production of scientific/technical knowledge in the work group that supported accepting the risk of previous flights. Second, the interaction took place within the same culture of production that had systematically contributed to the normalization of anomalous incidents in the past. The original technical culture, political accountability, and bureaucratic accountability affected the discussion, shaping the construction of risk on which the *Challenger* launch decision was based. Finally, although a relatively small number of people participated, they reproduced the specialization, hierarchy, and geographic distribution of the larger NASA/contractor structure. So it is not surprising that structural secrecy inhibited the proceedings that night as it had before, creating obstacles to information exchange, knowledge, and understanding.

NASA's cultural mandate for political accountability undermined the proceedings at the outset. Contractor engineers in Utah, aware of deadlines and cost concerns, immediately set a deadline for their preparations so the teleconference might begin and a decision reached before midnight, when time-consuming and expensive pre-launch procedures would begin at the launch site at Cape Kennedy, Florida. Rushing to meet their own deadline, contractor engineers divided up responsibility for the charts of engineering analysis, faxing them to other places without collectively assessing them. The result? NASA managers identified errors in the charts that contradicted the argument contractor engineers were making, so the analysis did not live up to the rigorous quantitative standards of NASA's original technical culture. Political accountability showed itself a second time when NASA managers, surprised that a flawed engineering analysis would be the basis for a no-launch decision when schedule was so



important, gave their usual adversarial challenges in unusually harsh ways, intimidating contractor engineers and managers.

Throughout the discussion, structural secrecy blocked understanding. Engineering launch recommendations were always face to face in FRR. However, this night the participants were in three facilities of the NASA/contractor structure, an unreflexive choice that went unquestioned because teleconferences had become a normal way of doing business between contractors and NASA. In separate locations, with no video hook-up, words and inflections had to convey everything. Body language, facial expression, who was present or absent—additional information that adds to interpretive abilities and conveying meaning—were unavailable. At a critical moment, the effect of structural secrecy was increased when the contractor representatives went off the teleconference line for a caucus. During that period, contractor administrators reversed their own engineers' recommendation. They returned to the teleconference with a recommendation to accept risk and fly. Separated by distance and a mute button, no one at the other two locations knew that the contractor engineers still objected. Further, the contractor engineers were unaware that people in the other two locations were expecting the launch to be stopped.

The cultural mandate of bureaucratic accountability had people going by the book, which also had a deleterious affect on the discussion. First, conformity to normative expectations about specialized knowledge and hierarchical relations affected talk: Some people were silent who had information that might have altered the outcome. Some deferred to authority; others, concluding that they had not worked on the booster problems recently enough or were insufficiently informed for other reasons, kept their insights to themselves, deferring to the few engineers presenting the analysis. Second, in unprecedented conditions, all participants followed all the usual NASA rules and procedures about how launch decisions were to be made. As in the past, conforming to rules had the latent social-psychological effect of affirming the correctness of the decision: All contractor engineers but one left the teleconference believing that the boosters would incur addition damage, not expecting a catastrophe. The one person who did fear the worst said nothing on the teleconference, abiding by NASA's bureaucratic norms about who legitimately could speak during an engineering decision and under what circumstances.

But conformity had a still greater consequence. Immediately following the disaster, many of the participating engineers admitted their analysis was flawed, stating that "we didn't have the data to convince NASA," so the preexisting engineering analysis that supported acceptable risk stood. However, retrospection and the luxury of hindsight show that they *did* have the data. After the

disaster, two investigators (nonengineers) working for the Presidential Commission did a trend analysis of all launches, examining the relationship between temperature and booster damage. The quantitative data conclusively proved the correlation between cold temperature and damage (Vaughan 1996:382–83). But the work group did not create that chart, which would have conformed to the positivistic mandates of the original technical culture, thereby stopping the launch. Customarily, in conditions of uncertainty, people fall back on habits and routines (Mileti, Sorenson, & Bogard 1985). In unprecedented circumstances, with time to think things through, the engineers and managers in the work group followed all the mandates of the culture of production. No one had the idea to proceed in a different way.

Consider this. Whereas a rigorous, quantitative engineering analysis may assure safety in a pro-launch decision, in a no-launch decision under unprecedented, uncertain launch conditions, accepting qualitative observations and intuitive insight from technical experts closest to the technology would have been appropriate. Whereas hierarchical, adversarial FRR discussion style is suitable for pro-launch recommendations, a democratic sleeves-rolled-up let's-all-put-our-heads-together-to-see-what-we-can-make-of-these-data strategy would have been a logical response. Again, we have the luxury of hindsight. The situation looked very different to them at the time. The work group conformed to the triumvirate of cultural imperatives, resulting in an official decision that incorporated yet another anomalous condition, thus extending the bounds of acceptable risk a final time.

### **On the Social Control of Organizations**

Gordon (1997:3) writes, “That life is complicated may seem a banal expression of the obvious, but it is nonetheless a profound theoretical statement—perhaps the most important theoretical statement of our time.” To reduce what happened at NASA to a subjective-expected utility model is to strip away the complexity that explains the tragedy. The above summary shows some of that complexity, but does injustice to the complexity of the original analysis, which, in turn, does injustice to the complexity of the incident. What nonetheless remains capturable is the relationship between situated action and rational choice. Rational choice theorists are the first to admit that the power and scope of rational choice theory is limited because insufficient progress has been made toward a theory of preference formation (Friedman & Hechter 1988:214; Hechter & Kanazawa 1997:208). Such a theory must rest on understanding not just the preferences actors hold when choices are made but how those preferences come about. This case generated the grounded theory of situated action, showing how social context can shape preference forma-

tion; moreover, it suggests how social context can decouple rational choice from outcomes. It demonstrates that individual choice cannot be understood by isolating it from its organizational context, and neither can the organization be isolated from the external environment. The work group's production of a cultural belief about booster risk, the culture of production, and structural secrecy were seductive shapers of preferences and interests during the teleconference and the years preceding it. And so was history. Decisionmaking was greatly influenced by precedent, in contrast to most macroscopic sociological rational choice theories, which assume that actors are forward-looking maximizers (Hechter & Kanazawa 1997:209).

In the years preceding the *Challenger* launch, the intersection of institutionalized cultural beliefs, organization structure, and culture affected cognition: The work group created a frame of reference through which booster performance was assessed. It became institutionalized, shaping interpretive practices so that decisionmakers viewed their actions as conforming, not deviant, as outsiders—and the decisionmakers themselves—viewed these same actions after the disaster. They imagined benefits, not costs, as a result of their decisions. The eve-of-launch teleconference was called because conditions changed: Many engineers felt that launching would bring only costs. But in the process of assessing risk, the interpretation, meaning, and actions of participants were shaped by the same social factors that affected previous decisions: The preexisting definition of booster risk remained the work group's official position. Each and every launch recommendation was a rational choice, made rational by the situated character of social action, which narrowed the options and influenced the choices decisionmakers saw as rational at the time. Preference formation looms large in this schema. In contrast, the amoral calculator model brackets individual choice from social location, history, and preexisting definitions of the situation, emphasizing the calculation of future consequences at the expense of the preconditions of choice.

NASA made a decision that caused extensive social harm, but absent was any evidence of intent to do that harm, or the calculated, knowing violation of rules or ethical or normative standards essential to the amoral calculator model of organizational misconduct. This was true not only for the SRB work group but also for political elites inside and outside the space agency: top NASA officials, Congress, and the Administration. These powerful elites set up the tragedy in the years preceding *Challenger* by making political bargains that (1) made routine and economic space flight a priority, interjecting production pressures into the culture; (2) institutionalized contracting out, altering organization structure and adding layers of bureaucratic accountability, interjecting another dimension to the culture; (3) allowed civil-

ians to fly on the shuttle to promote the agency and its goals. Yet missing from the original media-generated, historically accepted explanation of amorally calculating managers were the invisible workings of power and politics that contributed to the outcome. At the time they were made, these elite decisions, too, were absent intent to do harm or violate laws, defined as normal and acceptable by the top officials who made them.

What happened at NASA was not organizational misconduct, as scholars typically have understood it. No rules were violated in launch decisionmaking about the Solid Rocket Boosters; no one intended any harm. Yet the case reveals a dimension of organizational life that seems singularly important for understanding organizations that do violate laws and rules to attain goals. Although it was technical anomalies that were normalized at NASA, the normalization of deviance stands as a fundamental process that may play a role in facilitating rule violations and misconduct when they do occur in other organizations. The usual disclaimers about generalizing from a case study notwithstanding, this conclusion not only has strong support from sociolegal theory that links culture to organizational misconduct (see Vaughan 1997, 1998) but also from other research that contextualizes decisions to violate. This research is not extensive, nor was it designed specifically to target decisionmaking in naturalistic settings, so it does not attempt to explore all possible aspects of situated action. But it does (1) support the normalization of deviance as a generic social process at work when rules and regulations are violated in occupations, industries, and a variety of organizations; and (2) affirms the role of culture in deviance normalization. Typically, culture is not named in this research; instead, its explanatory power is expressed as norms or normative environment.

The basis for research connecting culture with the normalization of deviance was laid by Sutherland (1949), who theorized that crime is learned in interaction in primary groups and will occur when individuals develop “definitions favorable to violation” that exceed “definitions unfavorable to violation.” The first to tap into culture empirically was Quinney (1963), who compared occupational norms of pharmacists, finding that those who were oriented toward business norms were more likely to violate than those who were oriented toward professional norms (see also Green 1997). Quinney’s research design did not allow him to examine pharmacists’ decisions to violate, but the few case studies have been revealing. In the heavy electrical equipment conspiracy case, Geis (1967) was able to make a breakthrough. Although sociolegal scholars traditionally have interpreted the premeditation and collusion of Geis’s conspirators as evidence of amoral calculation, his data suggest that the normalization of deviance may have affected their decisions. Geis found the respon-

sible executives were conforming to industry norms, so in their view, their actions were not deviant—even though they knew them to be illegal. The Ford Pinto case study, often cited to support amoral calculation, also suggests that an internal normative environment developed where deviance became normalized within the organization.<sup>1</sup> Three important books, originating in other disciplines, argue that individuals committing heinous crimes against individuals and humanity defined their own actions by the cultural standards of organizations—political parties, nation-states, the military; thus, they saw their actions as conforming, not deviant: Arendt's *Eichmann in Jerusalem* (1963); Kelman and Hamilton's *Crimes of Obedience* (1989), and most recently, Goldhagen's controversial and hotly disputed *Hitler's Willing Executioners* (1996). All three show how power, politics, and elites created cultures that normalized deviant actions. When discovered, a horrified world defined these actions deviant, yet they were normative within the culture of the work and occupations of the participants who acted in conformity with organizational mandates.

The lesson suggested by the *Challenger* case and these others is that the legal and regulatory apparatus might better investigate and elevate the importance of additional strategies of social control. The potential deterrent impact of sanctions cannot figure into individual calculations when history, culture, and structure congeal in a worldview under which behavior that is objectively deviant to outsiders is normal and legitimate within a particular social context. When deviance becomes normalized, individuals see their actions as conforming, not deviant; consequently, they see their actions as accruing benefits, not costs. By definition, the potential deterrent impact of negative sanctions is mitigated by the situated character of social action. Punishment is appropriate; people must be held responsible for action resulting in social harm. It may be used against offending organizations and/or their employees to accomplish other than deterrence: to make people publicly accountable for their actions, to assure restitution or retribution, for example (Schlegel 1990). However, as a strategy of social control, punishment does not go far enough. It decontextualizes decisions to violate, neglecting the social context that leads people to make the choices that they do. The or-

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<sup>1</sup> An internal memo documenting the calculations of costs and benefits surfaced in the investigation of the Ford Motor Company's decision to manufacture a flawed Pinto design. It showed Ford officials calculated the cost of redesigning the Pinto to eliminate the flaw and the cost of retooling to manufacture a new, safe design. Then they calculated the probability of accidents and loss of life, estimating the value of a human life at \$200,000. The cost of redesign far outweighed the cost of accidents. Production went forward. But Frank Cullen, author of the authoritative research on the case noted, "It may be that they did so because they were conforming to norms of the organization culture and the competitive auto industry, so it was not a deviant act, in their opinion, but simply good business" (personal communication, November 1994). See Cullen et al. 1987.

ganization may be fined; the responsible individuals may be incarcerated, fined, fired, transferred, or offered early retirement, but if the social context of decisionmaking is not altered, the next position incumbent's decisionmaking will be subject to the same organizational contingencies. Without attention to these other factors, the legal and administrative apparatus—and the public—are wrongly persuaded that once the responsible person is punished, the problem is solved. But the more difficult to diagnose goals, policies, cultures, and structures that create definitions favorable to harmful social acts remain unchanged, perpetuating the possibility of recurrence.

A punitive strategy needs to be augmented with a new approach that calls for institutional reform. Alternatives to punishment exist, and these alternatives should be developed and continued (see, e.g., Bardach & Kagan 1982; Braithwaite 1985, 1989; Ayres & Braithwaite 1992; Fisse & Braithwaite 1993). However, most alternatives do not target those goals, cultures, and structures that constitute the social location of decisions to violate. Within a situated action paradigm, what kinds of strategies for control might be appropriate? Solutions would need to be tailored to the problem (e.g., environmental pollution, price fixing, NCAA recruiting violations, complex organizations, small businesses, nonprofits), but violative behavior across organizations has many generic aspects. Among them are competition for scarce resources and structural secrecy, which had major implications for what happened at NASA. With the details of the *Challenger* case fresh in mind, we will imagine some generic strategies that connect cause with control. These call for legally mandated intrusions on the inner, traditionally private, organizational domain.

### *Structural Secrecy*

In *Where the Law Ends* (1975), Stone does a superb analysis of the sources of structural secrecy and suggests a comprehensive approach for opening up the visibility and accountability of employees at all levels while still being sensitive to the needs for organizational autonomy. Grounding his analysis in a lawyer's understanding of the potential of the law, Stone proposed that regulators mandate changes in the configurations of internal decision structures and processes that alter authority lines and information flows. Among his proposals are altering the composition, responsibilities, authority, and function of boards of directors and creating general and special public directorships (pp. 122–83). He recommends using consent decrees to “mend the information net” by imposing appropriate information systems as part of a settlement package (pp. 199–216). These would include information-handling standards, installing government



inspectors, detailed internal reporting systems, and facilitating and protecting whistleblowers. Contending that the emphasis should not be on *what* organizations are deciding but on *how* they are deciding it, he draws on legal precedent to show how responsibility can be reallocated and accountability mandated (pp. 217–27).

#### *Competition for Scarce Resources*

The *Challenger* case revealed the subtle but powerful consequences of executive policies: In response to competitive pressures and scarce resources, top NASA administrators made decisions that altered the culture and structure of the organization, ultimately shaping the options that engineers saw as rational when assessing risk. Research repeatedly affirms that goals set by top administrators in response to competitive pressures result in pressures to violate in the middle and lower reaches of the hierarchy (see, e.g., Clinard 1983; Jackall 1988; Calavita et al. 1997). Goals geared toward increased productivity and profits are chief among them, as are related decisions intended to cut costs. For example, downsizing cuts costs by reducing the number of employees. If service or production goals remain the same, production pressures on remaining employees will increase, thereby increasing the probability of violations. Ironically, punitive or restitutive fines imposed by regulators (or other sanctions that reduce status or the ability to compete) increase competitive pressures on an organization. Regulators could hold top administrators accountable for the acts of their subordinates, even when there is no “smoking gun,” by mandating top administrators to bring organization goals into harmony with available resources. By reducing production pressures, an aspect of organization culture is altered that is incontrovertibly associated with violative behavior.

Expanded use of a compliance strategy of social control would address both structural secrecy and the effect of production pressures on internal culture. In contrast to a legalistic deterrence approach, a compliance strategy is designed to prevent violations from occurring because the social harm that can result from violation may be so extensive that punishing after the harm is done is an undesirable option (Hawkins 1984; Reiss 1984; Braithwaite 1985). Compliance is the strategy of choice in industries and organizations that use hazardous materials and risky technologies, but could be used regardless of the task or product. Compliance to laws and rules is negotiated by regulators who make frequent site visits to maintain adherence to regulatory standards. Sanctions are available but seldom imposed, the threat providing leverage to persuade managers and workers to comply. A compliance strategy that requires having a regulator often on

site opens up structural secrecy; also regulators who are not seduced by the culture bring fresh eyes to the workplace. While there is much that outsiders do not see, they may see what insiders take for granted and thus cannot see. Also, outsiders are empowered to interject contradictory signals—warnings, sanctions—that challenge developed cultural understandings. For some employees, frequent visits by a regulator may be incentive for more carefully concealed deviance; for others, the presence of regulatory authority may be a reminder of alternative normative standards.

These examples (and others) need to be debated and considered more deeply than is possible here, but they still show that it is possible to tie existing strategies for control to the relevant social conditions surrounding choice. The problem is that sociolegal scholars remain poorly informed about what drives decisions to engage in organizational misconduct, and as long we are poorly informed, regulatory policy will be governed by assumptions instead of the results of research. Undoubtedly, situated action can and does produce amoral calculation. However, the *Challenger* case provides an alternative model. It raises the possibility that what often appears to be consequentialist amoral calculation—Michael Milken, the savings and loan debacle—may be significantly shaped by preconditions of choice that normalize deviance. Rather than acting illegally, then invoking techniques of neutralization to minimize their experience of guilt and culpability (Sykes & Matza 1957), many offenders may never define their behavior as wrong in the first place. Moreover, other possible decision models exist, discussed earlier, that research has not begun to explore. Finally, a situated action paradigm suggests that violative behavior may result from the unanticipated consequences of purposive social action more often than theorists now surmise.

### **Situated Action and Rational Choice: A Research Agenda**

Cook and Levi (1990:1–15) argue for a theory of rational choice that includes the context of decisions as well as the decisions themselves. They urge the importance of attending to the norms and institutions that constrain behavior. But they note that a sociological rational choice theory must go beyond that to include “how human actions combine to create institutions and how existing institutions structure individual and aggregate choices. Moreover, the very origin of norms and institutions that constrain behavior lie in individual choices” (p. 15). At the heart of their proposal is the need to fill in the missing information on how preferences are formed. But they pass on that responsibility, stating that “the problem of the origins of preference is probably best left to those who specialize in problems of cognitive develop-

ment and to those concerned with the effects of culture and socialization on cognitive processes" (p. 9). Sociological scholars can answer the unanswered questions about sociological rational choice theory as we answer our own about decisionmaking in organizational misconduct. Both call for a better understanding of the relationship between situated action, preference formation, and rational choice.

To fully capture the structure/culture/agency link in organizational misconduct, case studies in naturalistic settings offer the greatest potential. The cases do not need to be sensational incidents that produce massive amounts of data, as the *Challenger* tragedy did (see also Allison 1971), but could focus on small organizations, both public and private (see, e.g., Grabosky 1989; Barlow 1993). Case studies and ethnographies expose the greatest number of structures and processes (Ragin 1994). Many of the organizational and institutional forces that affected decision-making at NASA were invisible to participants; thus, any research strategy that only relies on interview data may be handicapped because interviewees may not be able to articulate many of the factors that affected their actions. Also, when organizations keep records of decisions, as NASA did, case analyses can circumvent the limits of retrospection: Research can investigate how meanings are constructed and how decisions result *in situ* at the time they are made, rather than relying heavily on interviews that reflect retrospective reconstruction of events.

What matters most is that the research is designed to explore systematically how the known correlates of organizational misconduct—competition for scarce resources, institutionalized norms, organization characteristics, and the regulatory environment, in combination—affect decisions to violate. Because case studies (1) more fully reveal the relationship between situated action and rational choice and (2) use an inductive approach, they can expose the conditions of both amoral calculation and the normalization of deviance, as well as alternative explanations of decisions to violate. One concern of some rational choice theorists is that the model assumes preferences are invariant, but empirically, preferences vary—they form and reform (Goodin 1990:217–21). A new insight, raised by the *Challenger* case, is that preferences may remain fixed, but options narrow. A case study approach—using the substantive topic of organizational misconduct—can show not only the variation in options and preferences but also how the variation comes about. Here are some directions this research agenda might take:

1. The most important target is the unexplored empirical boundary about the relationship between structure and agency. We have data on structure; we have data on agency; but we have little tracing the empirical link between the two. By definition, exploring the structure/agency relationship requires examining

culture, which mediates between structure and agency. In an important essay, DiMaggio (1994) reviews and analyzes an extensive literature showing the connection between culture and economy. He emphasizes that culture constitutes economic action, just as it constitutes other logics. Culture constitutes the normative regulation of exchange, the institutional basis of markets, extra- and intra-organizational environments, and the framing and multiple logics of action—all known to be relevant to explaining organizational misconduct. Culture also has achieved taken-for-granted status as an explanatory variable in the sociology of complex organizations. The relationship between culture and cognition also has been established (DiMaggio 1997; Zerubavel 1997). We already have some quite interesting research that sheds light on culture and organizational illegality (e.g., Clinard 1983; Jackall 1988; Barlow 1993; Morrill, Snyderman, & Dawson 1997), but the available data have not been analytically interpreted as “culture,” nor have attempts been made to link the data systematically to decisions to violate. An important research challenge is to identify the connection between cultural beliefs—embedded in state, industry, professions, and organizations—and decisions to violate. New research in organizations that is specifically designed to examine culture beliefs and the symbolic meaning of law, patterned after the work of Ewick and Silbey (1998), would be essential to this agenda.

2. Sociolegal research might include taking advantage of theory and research in other literatures that could lend fresh insight into situated action and decisionmaking in organizational offending. Within sociology, the literatures on, for example, network analysis, social psychology, economic sociology, cultural sociology, and organization theory are rich in research and concepts that could be useful analytic tools. Moreover, cultural anthropology, industrial relations, cognitive psychology, organization theory, and administrative science and management have numerous alternative decisionmaking models that contextualize decisionmaking, but these models have received insufficient attention from sociolegal scholars (see, e.g., Simon 1957, 1976; March & Simon 1958; Allison 1971; Weick 1979, 1995; Kahneman, Slovic, & Tversky 1982; Heimer 1988; DiMaggio 1997). Collaborative interdisciplinary research could be productive, combining specialists who have different expertise: for example, bringing together an anthropologist, an organization theorist, or a cultural psychologist with persons expert in law, sociology of law, or criminology.

3. Comparative case research is another undeveloped avenue. Case comparisons would illuminate similarities and differences in decisions to violate across social settings. One method is to compare similar activities or events occurring in social settings that vary in size, complexity, and function: for example, fraud by

families on welfare, a government agency, a university research team, a nation-state in international agreement, or a small business partnership (Vaughan 1992b). Because J. S. Coleman (1990b) found that the larger the group, the less the deterrent impact of sanctions, to vary size would be especially interesting. Cases that hold one or two factors constant could be chosen for comparison, like Barlow's (1993) work on small business crime, which offers many insights about structure and agency. Another possibility is cross-cultural case comparison of decisions to violate that targets differences in economic embeddedness, institutional, organizational, and cultural context of offenses (cf. Braithwaite 1989:135–38). Not only could this strategy be helpful in understanding differences in cause, but it also might hold insights that have important implications for the challenges of global regulation (see, e.g., Gilboy 1996; Dodd & Hutter 1996; Kagan, Axelrad, & Ruhlin 1996).

4. Unless the research agenda includes publishing or discussing the research findings in venues where it can reach the audiences that determine legal and regulatory policies, the social control of organizations most probably will continue to prioritize a punishment strategy over other possible effective strategies that address organizational misconduct as situated action. This will be so not only because of a pervasive belief that cause rests in a consequentialist amoral calculator model and a belief in the deterrent/retributive/restitutive goals of punishment. It will be so as well because putting other strategies into effect will be resisted by organizational actors, because punishment has greater political sex appeal than other preventive measures, and because the causal aspects of the social context are difficult to identify and to change. All the more reason for the sociolegal community to take on the challenge of understanding decisions to violate as situated action.

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