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## THE DARK SIDE OF ORGANIZATIONS: MISTAKE, MISCONDUCT, AND DISASTER

### INTRODUCTION

Weber warned that a society dominated by organizations imbued with legal-rational authority would suffer negative consequences. Tracing that historic transformation, Coleman (1974) affirmed Weberian pessimism. He observed that this change altered social relations: Individuals not only interacted with individuals as before, but also they interacted with organizations, and organizations interacted with other organizations. Coleman's primary insight was that this structural transformation produced both perceived and real loss of power for individuals. But the rise of formal organizations also wrought new possibilities for adverse societal consequences as a result of mistake, misconduct, and disaster. Surprisingly, these harmful actions and the extensive social costs to the public - the dark side of organizations - are not claimed as central to the domain of sociologists who define their specialization as Organizations, Occupations, and Work, although *prima facie*, they would appear to fall within it. Organizational sociologists have affirmed that formal organizations can deviate from the rationalist expectations of the Weberian model; also, the pathologies that harm members are part of mainstream organization theory. But only recently have textbooks included harmful outcomes and organizational pathologies that adversely affect the public (Perrow 1986, Hall 1996, Scott 1998), and collections addressed failure, crime, and deviance in and by organizations (Anheier 1996, Bamberger & Sonnenstuhl 1998, Hodson & Jensen 1999).

Ironically, many organizational sociologists have been working on the dark side for a long time, as this essay will show. Moreover, scholars in Medical Sociology, Deviance and Social Control, and the Sociology of Science, Technology, and Risk have studied mistake, misconduct, and disaster produced in and by organizations, as have scholars in other disciplines. The irony here is that we learn much about how things go wrong, but absent the tools of organization theory, the full set of socially organized circumstances that produce these harmful outcomes remains obscure. Specialization within and between disciplines segregates knowledge, with

four consequences. First, the tensions and affinities in relevant work are not visible, theoretical matters for debate have not been identified, and the dialogue essential to intellectual development is absent. Second, both the social origins and cumulative significance of harmful organizational outcomes are masked. Third, the sociological basis for policy implications - for organizations, the public, and agents of social control - remains underdeveloped. Finally, a broader theoretical issue is at stake. This topic moves us away from rational choice assumptions about means-ends oriented social action toward explanations of socially patterned variations from that model.

A substantial body of scholarship exists, but the dark side of organizations is not an integrated field. The purpose of this essay is to legitimate it as a field of study, bridging disciplinary boundaries by reviewing four literatures in order to make core ideas of each available to specialists in the others. I begin by searching the sociological literature for general principles - theories and concepts - that help explain both the social form and generic origin of routine nonconformity: how things go wrong in socially organized settings. Then, I review the literatures on mistake, misconduct, and disaster, three types of routine nonconformity with adverse outcomes that harm the public. Using a Simmelian-based case comparison method of analogical theorizing that legitimates theory building by comparing similar phenomena occurring in different social settings (Simmel 1950, Vaughan 1992, 1999), I identify analogies and differences across these three types to show where progress has been made, assess the adequacy of this work, and speculate about future directions.

ROUTINE NONCONFORMITY:

THE SYSTEMATIC PRODUCTION OF ORGANIZATIONAL DEVIANCE

Merton's (1936, 1940, 1968a) thinking is foundational to any consideration of the dark side of organizations. He observed that any system of action inevitably generates secondary consequences that run counter to its objectives. Unanticipated consequences of purposive social action can be differentiated into consequences to the actor(s) and consequences to others that are mediated through social structure, culture, and civilization (1936:895). Actors can be individuals or organizations. His point is that outcomes can be unexpected; the consequences may be either optimal or suboptimal. Our primary concern is unanticipated suboptimal outcomes.

The first step is to invent a conceptual definition (tentative and subject to later revision) that helps us

consider the form and origin of unanticipated suboptimal outcomes. Formal organizations are designed to produce means-ends oriented social action by formal structures and processes intended to assure certainty, conformity, and goal attainment. Therefore, I will define an event, activity, or circumstance, occurring in and/or produced by a formal organization, that deviates from both formal design goals and normative standards or expectations, either in the fact of its occurrence or in its consequences, and produces a suboptimal outcome as organizational deviance. This conceptual definition is sufficiently broad to include conforming behavior by individual members as well as deviant behavior by individual members. Therefore, it encompasses mistake, misconduct, and disaster, one differing from the other not in its general fit with this definition but in its particulars: the normative standards or expectations violated (internal rules; legal mandates; social expectations), the categories of the public harmed, the extent of harmful social consequences, the social group whose expectations are violated, and/or the response of some public to the incident.

To define organizational deviance is not to explain it, however, and we are concerned with both form and origin. To the sociologically uninitiated, the language and personal experience

of mistake might suggest that some types of organizational deviance result from coincidence, synchronicity, or chance. Sociologists have written about chance (Sumner 1940, Aubert 1965, Zelizer 1979, Meltzer & Mannis 1992, Paget 1993, Becker 1994, Mannis & Meltzer 1994, Tilly 1996), but we don't know how or to what extent it explains social life. Alternatively, a breakdown in some normally well-functioning organizational system may occur, leading to unanticipated suboptimal outcomes. However, my search of the sociological literature for theories and concepts with explanatory power shows that whatever the role of chance or system breakdown, much organizational deviance is a routine by-product of the characteristics of the system itself. Organizational deviance, in its generic form, can be understood as routine nonconformity: a predictable and recurring product of all socially organized systems. In this essay, I use routine nonconformity and the systematic production of organizational deviance as interchangeable constructs, both denoting the causal origins of unanticipated negative outcomes.

This finding is consistent with Durkheim's thesis that the pathological is an inextricable part of every social system because the conditions of the normal are the preconditions of the pathological ([1938]1966:47-75). It follows that the same characteristics of a system that produce the bright side will regularly provoke the dark side from time to time. For example, the simple system that enables the owner to walk the dog (dog, owner, and the leash that joins them) ordinarily functions in an acceptable way, but produces an unanticipated suboptimal outcome when the dog is startled or surprised by some aspect of the environment, so backs up, gives chase, runs a zigzag, or circles so that the leash entangles the owner, causing an embarrassing stumble or fall. Only apparently simple, the dog-owner-leash system also encompasses the external environment and the interpretive capacities of dog and owner.

Analogically, the sociological theories and concepts assembled below assert that the system responsible for the production of routine nonconformity includes 1) the environment of organizations, 2) organization characteristics (structure, processes, tasks), and 3) the cognitive practices of individuals within them. Although these three levels of analysis are topically separated for discussion, the literature shows the social origin of routine nonconformity is in the connections between them. Carrying the analogy further, this review affirms that aspects of social organization typically associated with the bright side also are implicated in the dark side. Finally, it shows not only that unanticipated suboptimal outcomes are a routine aspect of social life, but also that a conceptual apparatus already exists for studying them as socially organized phenomena. Not in all cases did the originators make the link between their theoretical constructs and routine nonconformity; I have drawn out the implications when doing so seemed theoretically appropriate.

#### *Environment and Routine Nonconformity*

Less is known about how the environment contributes to routine nonconformity than is known about the role of organization characteristics or cognition and choice. Traditionally in organization theory, the environment includes both the organization set (networks and other kinds of interorganizational relations), and the general conditions of the social context (political, technological, economic, legal, demographic, ecological, and cultural). It has been described as complex, aggressive and changing, turbulent, and as conveying jolts to unsuspecting

organizations (Hall 1996). Environmental uncertainty is associated with routine nonconformity. Because organizations have difficulty accurately predicting circumstances that might affect their future activities, unexpected negative outcomes are possible even when initial conditions are diagnosed as optimal (see, e.g., Pressman & Wildavsky 1973, Wilson et al 1996, cf. Perrow & Guillen). Poorly understood social conditions even can lead to the failure of the organization to survive. Stinchcombe's "liabilities of newness" (1965:148) explains comparative death rates of new and old organizations: A higher proportion of new organizations are likely to fail than old. The liabilities of newness include the necessity of generating and learning new roles; costs in time, worry, conflict, and inefficiency; the absence of standard routines; the necessity of relying on social relations among strangers; the absence of stable ties with consumers. Although Stinchcombe used liabilities of newness to explain the development of populations of organizational forms, his concept also may apply at other levels of analysis, explaining why new programs, products, or services by individual organizations get into trouble, or even the problems of neophytes in organizations.

When power is used as the central explanatory concept, the focus shifts from organizations adapting to an uncertain environment to organizations actively defining, creating, and shaping it to suit their needs (Perrow 1986, 1991). Power struggles may result in cooptation and goal displacement, two classic concepts relevant to routine nonconformity (Selznick 1949). In order to survive, all organizations must compete for resources that help them meet goals. Often, these resources are scarce because their nature limits supply, the activities of regulators, competitors, and suppliers make them scarce, or because of pre-existing commitments that keep organizations from getting the resources they want. In this competition, power is both a means and an end. Cooptation, the process of mediating threats to stability from the environment by absorbing new elements into the leadership or policy-determining structure of an organization, can result in compromise that deflects an organization from its original goals, so that outcomes deviate from normative standards or expectations.

To these concepts may be added two recent theories that locate causes of routine nonconformity in the environment: the new institutionalism (Powell & DiMaggio 1991) and the economic embeddedness perspective

(Granovetter 1985). The new institutionalism explains that organizational forms and behaviors reflect prevailing values and beliefs that have become institutionalized. Cultural rules constitute actors (state, organizations, professions, and individuals), thus defining legitimate goals for them to pursue and affecting action and meaning at the local level. Legitimacy in the institutional realm can be not only a means to some end, but an end in itself. Because the generalized rules of the institutionalized environment are often inappropriate to specific situations, outcomes may be suboptimal and, to some extent, unpredictable. For Granovetter, attempts at purposive action are embedded in concrete, ongoing systems of social relations that affect them (1985:487). In contrast to the new institutionalism, agency is central to the embeddedness perspective. Both contingency and constraint explain economic action; thus, the embeddedness perspective is another tool for explaining the systematic production of organizational deviance. Granovetter points out the ironic link between the bright side and the dark side: The very concrete social relations and structures (or networks) in the environment that play a role in generating trust and discouraging wrongdoing in economic exchange also increase opportunities for deceit and deviance (1985:491-93).

#### *Organization Characteristics and Routine Nonconformity*

STRUCTURE Meyer and Rowan (1977) debunk the Weberian notion of efficient structure with their "myth and ceremony" argument. They show that organizations sometimes incorporate structures and practices that conform to institutionalized cultural beliefs in order to gain legitimacy, but are inefficient or inappropriate to their tasks, so unexpected adverse outcomes result. Interestingly, the embeddedness perspective also applies intra-organizationally: The relational ties within organizations that generate trust and control malfeasance provide members with opportunities for deceit and misconduct (Granovetter 1985:499-502). In addition to these theories, concepts relating structure to routine nonconformity are plentiful. Complexity can make an organization unwieldy so that the upper levels cannot control the subunits. But centralization and formalization, instituted to keep things from going wrong, also have their dark side. High levels of centralization provide greater coordination but less flexibility; consistent policy that is inappropriate for specific situations; rapid decision making in a crisis but cumbersome procedures that stall routine decisions (Staw, Sandelands, & Dutton

1981). Formalization can never cover all conditions; moreover, the number of written rules and procedures, their recency, perceived relevance, complexity, vagueness, and/or acceptability have known association with the systematic production of organizational deviance (Blau 1955, Vaughan 1982, Oliver 1991, Elsbach & Sutton 1992).

"Structural secrecy" refers to the way division of labor, hierarchy, and specialization segregate knowledge about tasks and goals (Vaughan 1996). Structural secrecy implies that 1) information and knowledge will always be partial and incomplete, 2) the potential for things to go wrong increases when tasks or information cross internal boundaries, and 3) segregated knowledge minimizes the ability to detect and stave off activities that deviate from normative standards and expectations. Structural secrecy is reinforced as messages are transformed as they pass through the system, either by the deletion of information or distortion (Guetzkow 1965). "Uncertainty absorption" occurs as an organization's technical language and classification schemes prevent some kinds of information from being communicated (March & Simon 1958:165). More information typically is viewed by people in organizations as the solution. Unfortunately, information can contribute to routine nonconformity both when there is too little and when there is too much (Feldman 1989). Confronted by these obstacles, decision makers employ the "micropolitics of knowledge" (Lazega 1992). They sort through knowledge claims, determining the relevance of information by its social appropriateness as well as its technical accuracy. The result is an informal network that excludes certain knowledge claims, perpetuating partial understanding and the possibility of unexpected negative outcomes.

PROCESSES Case studies hold memorable lessons about how organizational processes systematically produce unanticipated outcomes that deviate from formal design goals and normative standards. Either explicitly or implicitly, power as process, rather than structure, is a central concept in these cases. Classics show how informal organization contributes to routine nonconformity at both the top of the hierarchy (Dalton 1950) and the bottom (Roethlisberger and Dickson 1947, Burawoy 1979). In his portrayal of how working class kids get working class jobs, Willis (1977) shows how education policy designed to enable students to do better after high school in fact promotes rebellion that perpetuates their working class condition. Most recently, Diamond (1992)

revealed how the demands of corporate balance sheets and regulations distort the daily rituals of nursing homes for the elderly, eroding quality care, and Chambliss (1996) showed how the bureaucratic machinery of health care converts ethical decisions about hospital patient care to conflicts between occupational groups, with adverse consequences for patients.

Power struggles about subunit goals can produce unanticipated suboptimal outcomes when the most powerful subunit or coalition consistently triumphs, so some valuable policies are never enacted and some socially harmful policies may be (Fligstein 1990). Parallel processes that make sense in terms of different subunits pursuing their own goals may produce a joint outcome not intended by anyone and directly counter to the interests motivating the individual actions (Giddens 1984:9-14). Finally, Mechanic (1962) locates a cause of routine nonconformity in the power of lower participants to subvert the formal goals of organizations. But he, too, makes a connection between the bright side and the dark side of organizations. The power of lower participants, surely a deviation from design expectations in most hierarchical organizations, may produce conformity and positive outcomes when that power is used to prevent organizational acts with harmful social consequences.

Learning, in the organizational behavior literature, is a process normally associated with the bright side. How organizations learn the wrong thing is understudied (March, Sproull, & Tamuz 1991), but not ignored. Crozier (1964) found that a bureaucratic system of organization cannot correct its errors because the feedback process does not function well. The response to error increases the rigidity of the organization, perpetuating the production of routine nonconformity. "Deviance amplification" (Weick 1979) is the result of causal loops typified by interdependence and feedback that makes any small deviation grow, with major unanticipated consequences. Schulman (1989) found that decisions to correct errors can spiral into "error-amplifying decision traps." A simple error is transformed into organizational pathology due to resonate changes in organization structure: Efforts to correct and cover-up involve more participants and more actions that increase both the amount of deviation and the possibility of discovery. These responses to error are systematic in origin and defeat the goals they are intended to achieve.

TASKS Hughes (1951) was the first sociologist to look for theoretical principles associated with task-related errors in the workplace. For Hughes, occupation is the key concept. Arguing that unexpected negative outcomes are indigenous to the work process, he theorized about variations in their frequency and probability due to variation in amount of occupational skill, frequency of performance of the skill, and role in the workplace as a social system. Risk is also a central concept for Hughes: the distribution of risk among occupational roles and how systems delegate, spread, or concentrate both the risk of mistakes at work and the losses that result from them. His prescience about the theoretical importance of risk is borne out in the discussions of mistake, misconduct, and disaster that follow.

Tasks involve technologies. Understanding the link between tasks, technology, and routine nonconformity as a generic social form requires treating technology both as an object with a determinate physical essence that has consequences that are real and as an artefact embedded in social context within which it has meaning (Knorr Cetina 1997). Taking the former perspective, several richly detailed analyses of work-related technology have laid bare its vast unanticipated consequences (Turkle 1995, Tenner 1996, Rochlin 1997). Following Perrow (1984), a large body of work shows how the characteristics of the technology contribute to negative outcomes (see section on disaster.) Taking the latter perspective, scholars have examined scientific and technical practice using ethnomethodological and other interactionist perspectives to focus on the social construction/production of knowledge and meaning (Knorr Cetina 1981). For example, in her research on human/computer interaction in the design of intelligent machines, Suchman (1987) examined the discrepancy between "plans" as models for action and "situated actions:" actions taken in the context of particular, concrete circumstances.

Because of scientific and technical uncertainty, all judgments are made under conditions of imperfect knowledge so that routine nonconformity is a normal by-product of techno-scientific work. "Interpretive flexibility" is the capacity for scientific or technological facts to be given different meanings by different actors (Pinch & Bijker 1984). "Tacit knowledge" refers to intuitive understandings about practice that cannot be articulated; it is acquired by the "core set" - those who carry out the task (Collins 1974, 1981). By definition, the

core set cannot express essential understandings to others. Thus, decision makers outside the core set will always have imperfect knowledge, which in turn may lead to unanticipated suboptimal outcomes. In conditions of uncertainty, actors convert disorder to order (Collins 1992). Despite these efforts, fundamental ambiguities remain, so that adverse outcomes are always a possibility. Wynne (1988) notes that normal technology is "unruly": Engineering typically occurs under conditions of ambiguity in unclear circumstances, with rules emerging from practice and experience rather than preceding it. "Representational technologies" are models, diagrams, records, and other artifacts that are means of making decisions in all kinds of technical work (Lynch & Woolgar 1988). These technologies stand in for and represent some incident, process, or object, but are true only in the sense that they shape understanding of it, converting uncertainty to certainty. But the more general the formal representation, the more elements unique to a work situation are lost: the ad hoc strategies, the workarounds, and local knowledge that keep organizations going (Star 1995).

*Cognition, Choice, and Routine Nonconformity*

Psychologists provide many insights that point to cognitive origins of unanticipated suboptimal outcomes (see Heimer 1988, DiMaggio 1997). However, this discussion will focus on sociological constructs that demonstrate the influence of social context on decision processes, choice, and action. This work is abundant, theoretically rich, and at three levels of analysis. It begins to clarify the relationship between environment, organization, cognition, and routine nonconformity. At the institutional level, structuration theory and cultural theory are explanatory tools that emphasize how aspects of the environment can shape cognitive limits to rationality. Giddens locates the origins of routine nonconformity in the gap between the known and the lack of understanding about its significance (1984:xxiii). He argues that this discrepancy will always have the potential to produce unanticipated consequences, which will feed back to promote social reproduction of institutionalized practices because of routinization: "Repetitive activities, located in one context of time and space, have regularized consequences, unintended by those who engage in those activities, in more or less 'distant' time-space contexts." (1984:14). Giddens leaves the details of this process to the imagination, but Tilly (1996) supplies an answer. Asserting that error is incessant in social interaction, Tilly explains that responses to error

produce stable social structure and processes because they are drawn from historically-accumulated cultural understandings and embedded social relations that modify, rather than contradict, what came before.

Other scholars have considered how institutionalized cultural understandings mediate between the environment and the cognitive practices of individuals. Cultural knowledge is instrumental in complexity reduction (Sackmann 1991), thereby shaping and narrowing understanding so that unexpected adverse outcomes are one possibility. How culture travels from the institutional level to "manifest in people's heads" remains a central theoretical and empirical dilemma (DiMaggio 1997:272). New institutionalists posit culture as a mediating link: Institutionalized cultural beliefs have a complexity reduction effect that determines what individuals will be considered rational at a given moment (DiMaggio & Powell 1983, Zucker 1977). Another strand of theory takes for granted institutionalized cultural knowledge, instead trying to track the problem of culture and cognition. It shows how cultural knowledge contributes to unanticipated negative outcomes by enabling individuals to violate normative standards. Cultural understandings affect interpretive work, so that people may see their own conduct as conforming, even when the behavior in question is objectively deviant. One line of thought is that by drawing on largely unconscious cultural knowledge, individuals make the problematic non-problematic by formulating a definition of the situation that makes sense of it in cultural terms, so that in their view their action is acceptable and nondeviant prior to an act (Stokes & Hewitt 1976, Zucker 1977, Morrill et al 1997, Vaughan 1996). Alternatively, individuals may justify organizational deviance in retrospect by constructing accounts that bring their actions into harmony with social expectations. The effect is to legitimate deviant actions. By drawing on cultural scripts, individual engagement in routine nonconformity can encompass violation of normative standards and expectations that are either internal or external to the organization.

At the organizational level of analysis, many classics have exposed cognitive limits to rationality. Barnard (1938) argued that organization elites set the premises of decision making by setting up routines, so that internal activity is often the result of habit and routine-following rather than consideration of multiple options. Veblen's "trained incapacity," Merton's "bureaucratic personality" and Thompson's "bureaupathology"

identified how bureaucratic systems can create extreme rule mindedness that deflect individuals from actions that are most beneficial to the organization. March and Simon (1958) emphasized that the norm of rationality itself cannot be viewed as a set standard, but rather as a guideline from which deviation is expected. They locate systematic limits to rationality in 1) the inability of organizations to provide adequate information for decisions and 2) individual cognitive constraints that limit the ability to adequately assess the information at hand. Decision making is typified by "bounded rationality" and "satisficing." Bounded rationality modifies rational choice theory; the "garbage can model" rejects it in favor of organizational anarchy (Cohen et al 1972). The metaphor of the garbage can reveals a decision making process in which problems and solutions are loosely coupled, so that one problem may get transformed into a different one, or disappear due to inattention; solutions may arise that no one envisioned, or no solutions at all. This perspective suggests that unexpected interactions and outcomes can occur in systems of varying complexity.

At the micro-level, theory in social psychology has relentlessly pursued the ambiguous bases of decision making and its outcomes. Symbolic interactionism, in all its variations, contests the assumption of an objective reality in which "truth" and "error" can be reliably ascertained by individuals. It gives primacy to agency, interpretative work, spontaneous, nonrational action, situated and emergent meanings, and the symbolic foundations of thought. The constraining qualities of the social world are influential, yet the emphasis on agency and meaning construction underscore the potential for unanticipated consequences as a normal product of the ongoing creation, negotiation, interpretation, and ordering of the social. Goffman, for example, specialized in exposing the micro-origins of routine nonconformity. He demonstrated that in social interaction things are never as they seem because impression management and deception, intentional and unintentional, are integral aspects of social interaction. The role of social context as interpretive device and constraint is exemplified by his concept of framing (1974), in which an observation, experience, or idea is selected for attention and linked to a more general form in order to make sense of it, forming a condition for future action. Errors in framing (1974:308-21) may result in what he calls "ordinary troubles," among them actions that have unanticipated suboptimal outcomes (cf. Emerson & Messinger 1977).

Two theories combine aspects of symbolic interactionism to explain cognitive processes associated with routine nonconformity. Weick (1995) makes sensemaking, loose coupling, organizing, and enactment central concepts. Because the actor's subjective understanding and the loose coupling between information and action dominate interpretive processes, unanticipated suboptimal consequences are constant possibilities. For Weick, environment and organization are enacted moment to moment as people perceive and select the objects and activities on which sensemaking will be based. Misperception is a function of the normal selectivity of the process; rationality is a definition of the situation bestowed only in retrospect. Manning (1992) combines loose coupling, dramaturgy, and semiotics to examine organizational communication. Because meanings cannot be separated from social structure and social relations, communication consists of signs symbolically marking authority, power, and differences. Communication is comprised of multiple realities emanating from multiple organization roles, so paradoxes and contradictions are common. Misunderstandings and incomplete knowledge are typical (Putnam 1986, Martin et al 1983, Boden 1994).

*Sum* To legitimate the dark side of organizations as an integrated field of study, we have searched the sociological literature for theories and concepts that help explain, generically, how things go wrong in socially organized settings. This search is by no means complete, limited by the agenda to consider mistake, misconduct, and disaster in these same pages. Also, because the goal is to identify relevant causal mechanisms for the first time, the important question of the variable relationship between the principles identified and the frequency and probability of unexpected adverse outcomes is assumed but not discussed. Nonetheless, three things are clear. First, numerous theories and concepts exist that explain routine nonconformity as a generic phenomenon. These can be used in research on mistake, misconduct, and disaster so that similarities and differences can be identified and the development of general theory about the dark side of organizations can begin across types. Second, identifying patterns from an inductive analysis of this literature shows the social form of routine nonconformity includes aspects of environment, organization characteristics (structure, processes, tasks), and cognition/choice. Third, the theories and concepts found implicate the macro-micro connection in the systematic production of organizational deviance: Its origin is in the nested and dynamic interrelationship between environment,

organization characteristics, cognition, and choice. Now we turn to the three types of routine nonconformity that have unanticipated consequences that harm the public. I use the levels of analysis and subcategories inductively derived from the search for general sociological principles to organize this discussion, looking for analogies and differences across the three types (Simmel 1950, Vaughan 1992, 1999). As before, I concentrate on both social form and origin, presenting central themes in order to facilitate discourse across disciplinary boundaries.

#### MISTAKE, MISCONDUCT, AND DISASTER

Recall that organizational deviance was defined as an event, activity, or circumstance, occurring in and/or produced by a formal organization, that deviates from both formal organizational design goals and normative standards or expectations, either in the fact of its occurrence or in its consequences, and produces an unanticipated suboptimal outcome. Because this definition could include conforming behavior by individual members as well as deviant behavior by individual members, it provides an heuristic device for considering mistake, misconduct, and disaster. However, shifting from routine nonconformity as a generic social form to these three types creates a new definitional difficulty. Mistake, misconduct, and disaster are socially defined in relation to the norms of some particular group. Whether an incident or activity producing an unexpected negative outcome is viewed as conforming or deviant, whether it is defined as mistake, misconduct, or disaster will vary by group. Also, it will vary by level of analysis: Intentional fudging at the individual level could be viewed as conformity at the group level, transformed into mistake at the organizational level, and misconduct at the institutional level (Zerilli 1998, personal communication). Further, mistake, misconduct, and disaster are defined only in retrospect when outcomes are known, and these understandings are historically contingent.

Emerson (1990) observed that instead of using criteria from outside the setting to examine mistake and error, sociologists should investigate the local notions of competent performance honored and used in particular social settings: how actors judge each others' decisions and formulate them as "mistakes." Equally important is determining who has the right to say what a failure is (Hughes 1951), and how those understandings are produced and transformed into misconduct or disaster (Star & Gerson 1987). But indicative of a nascent

field of study, this research has only begun. Therefore, to preserve openness of meaning, I create broad conceptual definitions of mistake, misconduct, and disaster below, dividing the research into these types based on how scholars refer to their own work and a few common characteristics of the phenomena that are evident in the literature.

## MISTAKE

The sociology of mistake is in its infancy. The few sociologists who have studied it have investigated mistake in non-routine work in organizations when it has direct, tangible social harm: loss of life, injury, psychological consequences, property damage, and mistreatment by an agent of social control. For many, mistake was a small part of a multifaceted project. A point on which all agree is that mistake is systematically produced as a part of the social organization of work. However, organizations usually are a barely visible backdrop, their environments, structures, and processes often unnamed. Theory and the theoretical debates found in developed areas of study are absent. One common pursuit is grounded typologies that often go beyond description to explanation (Singer 1978, Bosk 1979, Belli & Schuman 1996). With the exception of Roth's (1991) helpful compendium of research and anecdote, no attempt has been made to integrate this work to build a sociology of mistake. Nonetheless, a solid basis is there.

For a definition of mistake sufficiently broad to organize this discussion, we use the definition of organizational deviance above, which stresses the violation of formal design goals and normative standards and expectations. Then, to distinguish mistake from misconduct and disaster, we further specify it to include acts of omission or commission by individuals or groups of individuals acting in their organization roles that produce unexpected adverse outcomes with a contained social cost: e.g., mistake in a hospital may harm an individual actor or small number of actors, with varying direct social cost to them. The definitional problem noted above immediately appears, for if mistakes are aggregated across all hospitals, their organizational-technical system origins and extensive harmful social consequences might well qualify as disasters.

### *Environment and Mistake*

The most complex treatment of environment and mistake analyzes wrongful conviction in the criminal justice

system. Huff et al (1996) first show the relation between institutionalized cultural beliefs and mistake, then how mistake is produced by structural conditions of the system. The other complex treatment is Freidson's (1970, 1975) analysis of how the various fragmented bodies that regulate medicine create differential performance standards. Thus, the regulatory environment, by its failure, becomes a structural origin of mistake. However, most research reduces environment to a single dimension: competition for scarce resources (income, profits, and funding). The workings of interorganizational power, politics, and conflicts of interest, associated with routine nonconformity in the last section, have not been studied.

Competitive pressures have been explored two ways. One is by analyzing some aspect of the competitive environment without showing how it affects mistake at the micro-level: e.g., Landau and Chisholm (1995) argue that norms of efficiency drive industries and organizations, not norms of effectiveness; Singer (1978) shows that errors are quasi-institutionalized because they are literally profitable for organizations to commit; Guillemin (1994) notes the rapid diffusion of untested hospital-based technologies in the medical market place during periods of institutional expansion. The second is to identify competition for scarce resources, but instead analyze the micro-processes through which it materializes in the workplace: e.g., McKee and Black (1992) found economic concerns of hospitals caused cutbacks in staff, so that junior doctors made mistakes because of inadequate supervision; in building construction, deadlines and demands for productivity produce mistake (Reimer 1976); Guillemin and Holmstrom (1986) found the institutional goal of keeping beds filled was one factor in latent experiments in newborn intensive care units that went on without scientific protocol.

#### *Organization Characteristics and Mistake*

STRUCTURE Little is known about the relationship between structure and mistake. Dwyer (1991) found that worksite control by the dominant group (managers, individuals, unions) and the methods of control are related to the incidence of workplace mistakes, injuries, and death. The only other aspect of structure specifically linked to mistake is complexity (Roth 1991). In building construction, Reimer (1976) found that division of labor among subcontractors creates irreversible errors, so that buildings are constructed from an accumulation of

blunders.

PROCESSES Research shows more about the processes of power and hierarchy than its structure. Zerilli (1998) analyzed ceremonial confession as a form of institutionalized interaction, whereby professionals in organizations (priests, police, therapists, terrorists) have the official responsibility of bringing about the act of individual confession. The ritualistic tactics of confessional-making are such that they may elicit mistaken accounts from individuals, with misdiagnosis and harmful outcome the institutional response. Not so surprisingly, since mistakes-in-progress are elusive, more is known about how the powerful respond to mistake than to the patterns of interaction that produce it. Light (1972) showed that the explicit therapeutic failure and possible error inherent in patient suicide threatened psychiatrists, who institutionalized a review process that preserved the professional project and protected the practitioner from blame. Repeatedly, research shows how organizational hierarchies suppress mistakes and deny responsibility, protecting the status of profession, organization, and individuals (Millman 1977, Bosk 1979, Jackall 1988, Leibel 1991, Edmondson 1996, Rosenthal et al 1999). This research reveals formal and informal patterns that are institutionalized, throwing workplace culture into broad relief, yet its richness is still to be mined, for culture is not named nor are the theoretical implications drawn out.

TASKS The greatest concentration of research on mistake is fine-grained ethnographic analysis of tasks. History matters: Tasks that are structurally and temporally separate can generate mistake through accumulation. Contemplating the string of medical misdiagnoses that later took her life, Paget (1993) noted how action unfolds in time, so that one mistake is compounded by others, until harm is irreversible. Hughes' (1951) prescience about mistake and risk as indigenous to the task are verified in this empirical work. Uncertainty, risk, and task complexity were first noted by Fox (1959); Paget (1988:58) calls medical work "error-ridden activity" because it is inexact, uncertain, and practiced on the human body; Huff et al (1996) locate risk and uncertainty in the complexity of offense and offender; Reimer (1976) links uncertainty to the transitional nature of the building construction work site. How uncertainty, risk, and task complexity vary and how they intersect with cognition and mistake remain to be studied.

*Cognition, Choice, and Mistake*

Traditionally, cognition and mistake are the turf of cognitive psychologists (see Rasmussen 1986, Reason 1990), but sociologists have begun a cognitive sociology of mistake. Three lines of inquiry have developed. The first explores processes that "neutralize" and "normalize" certain kinds of mistake, so that people in the workplace see them as routine and nonremarkable (Freidson 1975, Millman 1977, Bosk 1979). The second examines the construction of accounts by professionals when confronted with possible evidence of their own error (Stelling & Bucher 1973; Mulkay & Gilbert 1982, Mizrahi 1984). The third illuminates how social and cultural conditions affect cognition and choice, resulting in professional misdiagnosis. For example, social worker error in diagnosing abused children was explained by high observation costs, gradual accumulation of information, and lack of time to review and revise as more information became available (Munro 1996). Research using ethnomethodology and labeling theory expose how institutionalized professional cultural beliefs affect cognition and mistake: Rosenhan's (1973) research admitting sane pseudo-patients into mental hospitals undetected; Pfohl's (1978) analysis of official reviews of inmates in institutions for the criminally insane by teams of mental health professionals; Sudnow's (1965) "normal crimes," a study of basic conceptual equipment with which judges, lawyers, police, and probation workers organize their daily work.

*Sum* The strength of this work lies in its indication of common patterns within each level of analysis, regardless of size, complexity, task, or kind of organization. These patterns begin to suggest the social origin and form of mistake. The most valuable contribution to the dark side of organizations is the field research that shows responses to mistakes as they are occurring in the work setting: These insights into ethnocognition and organizational deviance have not been possible in research on misconduct and disaster. The possibilities for future research and theorizing are unlimited. Environment, organization characteristics, and cognition and choice all need study. Of the sociological theories and concepts described in the previous section that explain routine nonconformity, only a few have been tapped and none systematically. We need to know more about the human/technology interface and mistake, and about the individual experience of mistake and emotion, as it affects the propensity for subsequent mistakes. Also, research has been imbalanced. Sociologists have focused

on mistakes that directly harm individuals or property, omitting mistakes that are just as relentless but more mundane: mistakes in reports, the lead news story, hiring, the porno novel stitched into the binding of an academic monograph, products that cannot be assembled or fail and have to be recalled. Employees and organizations devote enormous resources to prevent incidents of routine nonconformity from being publicly defined as mistake. This, too, is worthy of research: The social organization of clean-up work also has social costs that eventually are paid by the public.

## MISCONDUCT

Initiated in 1939, the sociology of misconduct in and by organizations is a mature, thriving enterprise. But deeper inquiry has produced harder questions. Key conceptual debates remain unsettled: Is it "white-collar crime," "occupational crime," "corporate crime," "abuse of power," "organizational deviance," or "abuse of trust"? The result is research in many conceptual traditions. But a mechanism for coherence has emerged. Despite differences, many offenses originate in formal and complex organizations. Beginning in the mid-60s, scholars trained in the sociology of organizations and deviance and social control began combining the two, creating theories that pointedly gave explanatory primacy to the organizational locus of wrongdoing. This development is institutionalized, evident in 1) the systematic inclusion of organizations in causal theories, 2) the shifting premises of theoretical debate (initially, the relationship between individual actors and organizational actors; most recently, the relative explanatory power of rational choice theory and organization theory), 3) regular discussion of organizations in textbooks, articles, and chapters, and 4) research using ever more sophisticated organizational analysis and theory.

For a definition of organizational misconduct sufficiently broad to organize this review, we use the definition of organizational deviance above. To distinguish misconduct from mistake and disaster, we further specify that definition to include acts of omission or commission by individuals or groups of individuals acting in their organizational roles who violate internal rules, laws, or administrative regulations on behalf of organization goals. The extent of adverse consequences and harm to the public will vary with the act, so social cost may be contained or diffuse. Like mistake, when incidents are aggregated, harm is extensive and social cost

is high. Because deviation from both formal design goals and normative standards or expectations is a requisite of routine nonconformity, organized crime is excluded from this discussion.

#### *Environment and Misconduct*

The competitive and regulatory environments have received extensive research scrutiny. The role of the regulatory environment in the social origin of misconduct is uncontested: Although effective in specific cases, sources of regulatory failure are socially organized and systematic across cases, thereby undermining the efficacy of deterrence. Power enters into this equation in the ability of regulated organizations to affect both the structure of the regulatory environment and specific regulatory outcomes. Further, powerful offenders can resist grass roots efforts at social control because 1) they construct public accounts that legitimate their actions and 2) individuals and organizations are dependent upon them for goods and services (see Edelman & Suchman 1997). The relationship between the competitive environment and organizational misconduct is equally well-established, but still puzzles. The most frequent hypothesis, derived from Mertonian strain theory (1968b), is that organizations with blocked access to opportunities for economic success will violate: Thus, marginal and failing firms will be more likely to offend, a prediction consistent with Merton's about the working class and street crime but inconsistent with research on crimes of the powerful and the influence of power on the regulatory enterprise. Quantitative research on corporate violations separates environment into complex industry variables, market structure, and fluctuating economic conditions. The results are contradictory and weak (see Jamieson 1994, Geis & Salinger 1998).

However, qualitative research suggests the Mertonian hypothesis is overly restrictive. Analysis of misconduct by nonprofits, governments, and business shows 1) competition not just for profits and economic success but for many kinds of scarce resources essential to survival, suggesting quantitative studies wrongly narrow competitive pressures to economic success and profits; 2) misconduct is not limited to marginal and failing organizations (e.g., Grabowsky 1989, Fleischer et al 1992, LaFollete 1992, Simon 1994). These findings call into question the data sources for quantitative research: typically, agency enforcement actions on corporations. Marginal or failing business firms simply may be more likely to get caught. This possibility is

reinforced by Delaney (1992), who debunks firm financial figures as the product of strategies and power relations, not indicators of firm health. Qualitative research suggests revising the Mertonian hypothesis as follows. Given the universality of competitive pressures, all organizations may be structurally induced to violate, regardless of ranking in the organizational stratification system: The powerful may compete for scarce resources to sustain rank, others may compete for upward mobility, and still others to keep from losing ground or dropping out of the competition altogether.

Culture is an aspect of the environment scholars hold important. Often referred to as normative environment, its role in the social origin of organizational misconduct has been located in normative ambiguity for white-collar offenses (Aubert 1952), culturally-approved success goals and anomie (Merton 1968b), a tiered system of meaning in an industry (Denzin 1977), cultures of risk taking (Black et al 1995), the culture of capitalism (Finney & Lesieur 1982), occupational cultures (Green 1997), and industry cultures (Leonard and Weber 1970). However, the cultural environment typically is noted as important, without precision in conceptual definition, its empirical referent, or its connection to the actions of organizations and their members. A new interest is network analysis linking organizations and actors in networks of collusion that subvert the legitimate economy (Barlow 1993, Baker & Faulkner 1993, Calavita et al 1997). This research builds upon theories of interorganizational relations, paving the way for future studies of power struggles and the political environment.

#### *Organization Characteristics and Misconduct*

Theorists uniformly hold that structures, processes, and tasks are opportunity structures for misconduct because they provide 1) normative support for misconduct, 2) the means for carrying out violations, and 3) concealment that minimizes detection and sanctioning.

STRUCTURE Scholars have studied the role of formal structure in "crime coercive systems" and "crime facilitative systems" (Needleman & Needleman 1979); the diffusion of knowledge, misconduct, and responsibility (Stone 1975, Wheeler & Rothman 1982, Clinard 1983); variation in subunit vulnerability (Frey 1994, Simpson & Koper 1997). Unexamined is complexity: centralization, decentralization, geographic

dispersion, number of component parts, layers of hierarchy and how they vary in relation to misconduct. Also, much scholarship affirms that an individual offender's position in a structure explicates the social organization of misconduct (e.g., Quinney 1963, Vaughan 1983, Daly 1989, Shapiro 1990). This latter research agenda, if pursued, promises insights that transcend types of organizations and types of violations.

**PROCESSES** A central contribution has been scholarship establishing how the competitive, regulatory, and cultural environment translate into organizational processes, leading individuals to engage in misconduct on behalf of organization goals. Research shows how environmental strain materializes in 1) performance pressures that affect individual actions and 2) the development of internal culture that supports achieving the organization's goals illegitimately. Top administrators are responsible for performance pressures indirectly (by establishing out-of-reach goals; not providing sufficient resources necessary to attain goals) and directly (by actively conceiving and enacting violative behavior). Now, scholars are studying the impact of administrative decisions on misconduct in more detail: managerial succession, CEO background, decentralized management, and product dominant strategies (Simpson & Koper 1997); downsizing (Friedrichs 1997); escalating commitment (Ermann & Rabe 1995).

Traditionally, organization culture is treated unidimensionally: It provides normative support for wrongdoing. This view is sustained by Sutherland's (1949) learning theory, which explains that employees are socialized into membership in a group where the norms favor violation of internal rules, laws, or administrative regulations; ethnographies that show socialization and on-the-job-training for techniques of rule violating behavior used to execute routine tasks (e.g., Bensman & Gerver 1963, Vaz 1979, Punch 1985, Shulman 1997), and research showing that willingness to use illegitimate means on the organization's behalf is sealed by a reinforcing system of rewards and punishments. However, this unidimensional view of culture is challenged by theory that emphasizes cultural complexity and variation (Vaughan 1983, Coleman & Ramos 1998), and more dramatically, by ethnographies that show conflicting cultures due to differences in professions, rank, and informal cliques (Jackall 1988, Chambliss 1996, Morrill 1995).

**TASKS** Cressey (1953) argued that the skills necessary to misconduct are simply the skills necessary to do the job

in the first place, but only recently has the relationship between tasks and misconduct been studied. Friedrichs (1996) notes the conspicuous rise of "finance crime" - large scale illegality that occurs in finance and financial institutions - and "technocrime" - use of new technologies such as computers, facsimiles, electronic surveillance, and accounting technologies. The transformation of routine tasks by these technologies contribute to misconduct because they are employed in new, complex transaction systems that are difficult to monitor and control (Vaughan 1982b). Sociologists have investigated accounting tactics (Passas 1996), manipulation of markets and financial capitalism (Levi 1981, Abolafia 1996, Zey 1993), and espionage (Hagan 1997). Some are studying the diffusion of these innovations (Calavita et al 1997, Baker & Faulkner 1997).

#### *Cognition, Choice, and Misconduct*

Traditionally, decisions to violate have been explained by the amoral calculator hypothesis, a form of rational choice theory: Confronted with blocked access to legitimate means to organization goals, decision makers will calculate the costs and benefits of using illegitimate means; if benefits outweigh the costs, actors will violate (Kagan & Scholtz 1984). Whereas in the sociology of mistake, the concepts of risk and uncertainty were associated with tasks, in organizational misconduct, they are located in cognition, decisions to violate, and the probable reaction of regulators. However, these concepts usually are not directly studied, disappearing into costs, benefits, and the probability of punishment. In what is possibly the most important new development, the rational choice assumptions behind the amoral calculator hypothesis are being examined within the context of social psychological and organization theory (Coleman 1987, Reed & Yeager 1996, Ermann & Rabe 1997; Lofquist 1997, Simpson 1998, Simpson et al 1998, Vaughan 1998). This research promises advances connecting organizations and culture with interpretation, meaning, and individual action.

*Sum* Research and theory suggest that, like mistake, the social form of organizational misconduct includes aspects of environment, organization characteristics (structure, processes, and tasks), and cognition, and is systematically produced by these three in combination. Most significant for understanding the dark side of organizations is recent research integrating these three levels of analysis. This direction has potential. Behind the unsettled debates about the appropriate conceptual definition (occupational crime, organizational deviance, etc.)

is an unrecognized, covert debate about what is the appropriate level of analysis. The reason the definitional issue remains provocative and lively is that, as this review shows, all levels of analysis apply. The existence of this covert debate accentuates the legitimacy of each level of analysis, thus substantiating the importance of merging them. Moreover, the benefit of the disagreement is that each conceptual tradition has produced knowledge at all levels, ready to be integrated. Often, scholars have identified aspects of environment and organizations as "criminogenic," showing how aspects of environment, organization characteristics, and cognitive practice normally associated with the bright side of organizations are systematically related to the dark side. Although recent research has begun to inquire into variation, the central question still is, When do they produce conduct and when do they produce misconduct?

#### DISASTER

The study of disasters has deeper roots than its topicality suggests. Historically, interest lay in the impact of disaster and the organizational response; inquiry into the social origin examined human factors in accidents. Unnoticed in that array was prescient work locating the cause of accidents in power and the structural and cognitive limits embedded in organizations and technologies. Landau (1969) located the social origin in large, complex, and tightly ordered systems in which parts are interdependent such that the failure of a part can result in the failure of the system. Erikson (1976) showed the corporate power and cost/safety trade-offs behind the Buffalo Creek dam collapse. Turner (1976, 1978) analyzed 84 accidents and disasters across industries, finding social, technical, and administrative arrangements systematically produced disasters. Then in 1984, Perrow's *Normal Accidents* and Short's "The Social Fabric at Risk" charged the intellectual community and changed the research agenda. The result is a body of work showing how institutions, organizations, technologies, and cognitive practices contribute to accidents and disasters.

This review will encompass disaster studies: research its authors identify as investigations into the origin of accidents and disasters. Disaster is a type of routine nonconformity that significantly departs from normative experience for a particular time and place. It is a physical, cultural, and emotional event incurring social loss, often possessing a dramatic quality that damages the fabric of social life. For an accident to be defined as a

disaster, the accident would need to be large-scale, unusually costly, unusually public, unusually unexpected, or some combination (Turner & Pidgeon 1997:19). Mistake and misconduct often occur in the pre-history of accidents and disasters, the latter two distinguished from mistake and misconduct by the social cost and quality of surprise. To be sufficiently broad to encompass both accidents and disasters, we start with the previous definition of organizational deviance, further specifying it as organizational-technical systems failures that include acts of omission or commission by individuals or groups of individuals acting in their organization roles, with outcomes that either in the fact of their occurrence or consequences, are unexpected, adverse, and of high social impact and cost regardless of number of lives and amount of property lost.

#### *Environment and Disaster*

Research firmly links the social origin to political, competitive, regulatory, and cultural environments. Sagan (1993, 1994) presents evidence that power and politics contribute to accidents. Indeed, the history of technology is a history of conflicts of interest that resulted in suboptimal decisions about technology and technological products (Cowan 1983, Hughes 1983, MacKenzie 1990, Whalley 1991). Equally interesting is how the political environment permeates competitive, regulatory, and cultural environments. Competition and scarcity set the stage for accidents when they lead to cost/safety trade-offs, so safety tends to be the goal displaced.

Quantitative research now is looking at producers' ability to afford safety, costs of regulation, and the safety record (Marcus et al 1993, Verma & Marcus 1995). The regulatory environment gets more attention from socio-legal scholars than disaster specialists, but both demonstrate that it contributes to accidents when subject to power-dependence relations that undermine 1) effective monitoring, investigating, and sanctioning of producers and users and 2) effective response to incidents, so they develop into accidents and disasters.

Organizations producing and using risky technologies are both victims of political shifts in regulatory policy (Tompkins 1990) and powerful actors that shape it (Cable et al 1997).

In mistake and misconduct, cultural environment appears as an independent variable; in disaster studies, it is a dependent variable. Producers and users of science and technology have the power to effect what is culturally defined as an acceptable risk so that debates about hazards go on in an environment that is compatible

with their interests. Cultural legitimacy also is gained by 1) displacing blame from organizations and institutions to operator error (Perrow 1984) and 2) the creation of "fantasy documents:" official plans to respond to accidents that are culturally reassuring, but lack appropriate resources, strategies, and knowledge for an effective response to crisis (Clarke 1999). Historic environmental change has multiplied the potential for accidents and disasters, most notably as large technical systems developed with the capacity for normal accidents (Mayntz & Hughes 1988). But turbulence may also matter. Eisenhardt (1993) argues that accidents are associated with "high velocity environments" marked by rapid and discontinuous change in demand, competitors, technology, and/or regulation, such that information is often inaccurate, unavailable or obsolete. How a high velocity environment can be identified and its effects on accidents and disasters remain to be worked out, but one known result is the failure of formal agents of social control to effectively monitor rapid changes in scientific and technical knowledge (Jasanoff 1986).

#### *Organization Characteristics and Disaster*

**STRUCTURE** Perrow (1984) established complexity as a core concept in disaster studies: Accidents are normal in complex systems, an outcome of types of interaction of system parts (complex or linear) and types of coupling (tight or loose). Also salient are the effects of organization complexity on information flows, undermining knowledge about potential hazards (Bella 1987, Freudenberg 1992, Gusterson 1996, Turner & Pidgeon 1997). Hierarchy and power are profoundly implicated in accidents. Executive goals and resource allocations can trickle-down, impeding the efforts of people doing the risky work (Shrivastava 1987, Vaughan 1997, Marcus & Nichols 1999). Turner (1978: 179) found that errors at the top have greater accident potential because errors compound as they move down through the hierarchy. Perrow (1983) explains why military and top industrial management are indifferent to good human factors design, favoring technologies that reinforce the power structure and result in unwarranted claims of operator error. In addition, group and subunit conflicts can displace goals, resulting in less-than-optimal technology (Thomas 1994).

**PROCESSES** Two patterns repeat in disaster research. First, analogous to organizational misconduct, environmental strain translates into internal processes that are associated with accidents: conflicting goals,

performance pressures, deadlines, escalating commitment, reward systems that reinforce productivity and undermine safety, and decline of resource slack. Second, analogous to mistake, history matters: Turner (1978) found that man-made disasters had long incubation periods, typified by rule violations, discrepant events that accumulated unnoticed, and cultural beliefs about hazards that together prevented intervention that might have staved off harmful outcomes.

Striking and new are the discoveries about rules. The conjunction of competition, history, and rule violations suggests that only poorly run organizations have violations and accidents, but well-run organizations also exhibit this pattern. Routine nonconformity has multiple logics: rule violations occur because of mistake, misconduct, institutional arrangements, informal organization, and cultural understandings (Braithwaite 1985, Shrivastava 1987, Osborn & Jackson 1988, Vaughan 1996). For example, Snook (1996) identified "practical drift:" an incremental uncoupling of practice from written procedures designed to handle the worst case condition when subunits are tightly coupled. This gap between written rules and action impairs effective response in a crisis, when tight coupling is called for. Ironically, conforming to rules also can contribute to accidents and disasters. Weick (1993), in a stunning analysis of why firefighters died in the 1949 Mann Gulch disaster, revealed that the few who survived dropped their heavy tools and ran, while those who perished conformed to the organization mandate always to carry their tools.

TASKS One strand of task-oriented research locates risk and uncertainty in the technology because it is complex, uncertain, and therefore inherently risky: The technology makes tasks difficult and accidents likely. As the technical system varies, so does the ability of operators, managers, organizations, and institutions to control it (Perrow 1984). Recent research has opened up the unexplored world of the people who do the risky work. This new work discloses "the operational realities of risk handling" (Carroll & Perin 1995:22), showing how the technology mystifies and how organizational and institutional factors affect the work process, contributing to failures. Both intelligent technology and intelligent humans have limited ability to cope with inconceivable occurrences, promoting "the reasonable choice of disaster" (Lanir 1989); people are taught modes of success, not modes of failure (Schulman 1993); training is for single failures, not complex interactive ones (Meshkati

1991); risk-handling resources are inadequate (Perin 1995); minor flaws and errors are accepted due to deadlines (Pate-Cornell 1990); schedules, resources, and commitments to hardware produce questionable fixes rather than change (Starbuck & Milliken 1988a).

### *Cognition, Choice, and Disaster*

Scholarship on cognition, choice, and the social origin of accidents and disasters locates risk and uncertainty in interpretation and sensemaking about technologies. The guiding assumption is that all technologies have interpretive flexibility, resulting in disputed knowledge claims about the technical world (Pinch 1991). How individuals construct risk and uncertainty and how they produce technical knowledge are the central problematics. Social context is all-important: Risk and uncertainty of a situation or object vary with the social location of the actor; experts disagree about facts both before accidents and after. Many aspects of social context are salient for cognition (Short & Clarke 1992, Roberts 1993, Weick et al 1999). Unfortunately but understandably, studies of ethnocognition as incidents, accidents, and disasters unfold are rare. The productive alternative has been participant observation of people doing risky work safely, which has yielded concepts related to cognition and effective teamwork, such as "heedful interrelating" and "collective mind" (Weick & Roberts 1993, Weick et al 1999). These studies of process show how better organizations catch mistakes by employing advanced collective cognition before things snowball into disasters.

However, knowledge about the effect of culture on choice in the preconditions of accidents and disasters is accumulating (Turner & Pidgeon 1997:Ch.11). Turner (1976) found cultural beliefs contributed to "failures of foresight:" a history of discrepant events that were ignored or misinterpreted. Prior to accidents, decision makers saw "ill-structured" problems that afterwards became "well-structured" to decision makers and investigators alike when the adverse outcome altered their world view. Two studies show how institutional and organizational cultural beliefs promote failures of foresight by affecting the interpretation of information: A "disqualification heuristic" leads decision makers to neglect information that contradicts their conviction that a technical system is safe (Clarke 1993), and the "normalization of deviance" can neutralize signals of danger even though discrepant events are given serious attention (Vaughan 1996). "Fantasy documents" not only effect

societal cultural beliefs about risky technologies, but they persuade employees of the safety of their own enterprise (Clarke & Perrow 1996). After accidents, government, industry, and professional cultural beliefs frame facts, limiting what investigations can learn from failures (Gephart 1984, Starbuck & Milliken 1988b, Carroll 1995, 1998).

*Sum* The achievements of disaster studies are several. First, like mistake and misconduct, research into causes affirms that environment, organizations, and cognition are all implicated. Second, in contrast to mistake and misconduct, most scholarship uses organization theory, showing the socially organized origins of accidents and disasters in comprehensive complexity. Third, research has new insights about how power, rules, and culture create failures. Finally, many scholars have responded to the high demand for sociological insights from organizations that produce and use risky technologies, consulting and lecturing, fomenting an incipient revolution. Miraculously, many practitioners are beginning to look beyond operator error, directing preventive strategies toward the institutions, organizations, and systems that contribute to accidents.

When assessing disaster studies, it is typical to worry about "The Great Divide": Normal Accident Theory (NAT) studies failures, emphasizes structure, and argues that complex systems will inevitably fail; High Reliability Theory (HRT) studies safe systems, emphasizes process, and argues for effective prevention. These different orientations show in detail how the same aspects of organizations that contribute to the bright side also contribute to the dark side. Hotly debated between NAT and HRT are the effects of centralization, decentralization, tight and loose coupling, and redundancy, but research has not sorted out under what conditions they will produce safety or increase the probability of accidents. However, much current scholarship mediates these polarities, perhaps indicating the growing maturity of the field: Debates illuminate similarities as well as differences (LaPorte 1994), scholars studying failure link structure to process and cognition (Clarke 1992, 1993, Vaughan 1996), scholars studying high reliability organizations compare failures and safe organizations (Weick 1990, 1993, Roberts & Libuser 1993), scholars studying a risky industry, rather than successes or failures (Carroll & Perin 1995), and integrative efforts compare variations in structure, process, performance, and accidents (Schulman 1993, Marcus 1995). Additional progress is possible if future research, regardless of

orientation, more carefully specifies social context: the unit of analysis (system, organization, subunit, work group), its complexity, the complexity and coupling of the technology, relevant aspects of competitive and regulatory environments, presence or absence of resource slack, and especially the characteristics of the task. Neither "side" is doing this, so the generalizability of all findings is unclear. For both theoretical and practical reasons, we need to know, e.g., how variation in social context affects the possibility of collective cognition and its success or failure as a preventive. The division of labor, which has HRT mainly exploring process and NAT focusing more on structure, has been most problematic for developing broad causal principles upon which to base strategies for control. The greatest advances may come when individual projects strive to merge levels of analysis, examining the link between environmental factors, organization characteristics, and ethnocognition in tasks of people doing risky work.

#### THEORIZING THE DARK SIDE

This essay is a Simmelian examination of the dark side of organizations, first exploring the social form and origin of routine nonconformity, then of mistake, misconduct, and disaster as three types. Studying the dark side of organizations exposes the operational inadequacy of society's institutional bases. It increases our understanding of social structure, showing routine nonconformity, mistake, misconduct, and disaster are not anomalous events, but systematic products of complex structures and processes. Consequently, it challenges not only Weberian notions of rationality, but also the decontextualized, means-ends orientation of rational choice theory, showing that 1) behavior is rational within situational contexts, and that 2) social context can decouple rational choice from outcomes, so organizations produce unanticipated negative consequences that deviate from formal design goals and normative standards and expectations. Debunking myths of operator error and individual wrongdoing, this review affirms that preventive strategies must go beyond individuals to institutional and organizational factors that shape individual cognition and action.

To lay a foundation for the dark side of organizations as an integrated field of study, I have analyzed four literatures in order to make key ideas of each available to specialists in the others. Using an inductive case comparison method that identifies social form and origin by attending to both analogies and differences, two

central analogies stand out: first, routine nonconformity and the three types have a common form that include aspects of environment, organizations, and socio-cognition, and second, common origin is located in connections between these levels of analysis that systematically produce organizational deviance. Analogous structures and processes are easy to identify because patterns clearly repeat across routine nonconformity and its types. But drawing conclusions about differences within these categories is more tentative because the absence of some characteristic may reflect substantive topic differences in research maturity (e.g., mistake is "young") and research access and interest rather than differences of form. But some differences can be singled out as directions for future research.

Only a few sociological constructs linked to the social origin of routine nonconformity have been used in research on mistake, misconduct, and disaster. Theories and concepts (e.g., the embeddedness perspective, environmental uncertainty, liabilities of newness, goal displacement, error-amplifying decision traps, trained incapacity, core set) could be extended to study the three types. Reciprocally, theories and concepts associated with mistake, misconduct, and disaster could guide the study of routine nonconformity or be swapped between types (e.g., anomie, the trickle-down effect, practical drift, the disqualification heuristic, system complexity, requisite variety). Also, advances in one area can provide theoretical insight and research direction for another. For example, the regulatory environment has been extensively studied in organizational misconduct but virtually ignored in mistake and disaster; tasks have priority in research on mistake and disaster, but are neglected in misconduct; science and technology are central in disaster studies but unexplored in mistake and misconduct; power and politics are emphasized in misconduct and disaster but minimally addressed in mistake. Risk and uncertainty are fundamental, but are conceptually underdeveloped in all three types.

Building the dark side of organizations as an integrated field also would include some topics that are challenging methodologically because the subject matter is, after all, organizational deviance. First, studies of ethnocognition are necessary. Second, we might hypothesize that in virtually all socially organized settings, routine nonconformity is met with efforts to keep it from becoming publicly identified as mistake, misconduct, or disaster. What is the social organization of this clean-up work and what is the effect on social structure? Third,

how do understandings develop about what is an incident of routine nonconformity, who gets to decide what is and what is not, and how is routine nonconformity converted to mistake, misconduct, or disaster? Finally, there is the unresolved question of when conditions combine to produce the bright side and when they culminate in the dark side of organizations.

This discussion has been cast as a dark side/bright side dichotomy to emphasize variation from the usual treatment of organizational behavior. However, the variable relationship between structures and processes identified and the frequency and probability of unexpected suboptimal outcomes is an important question. Answers are likely to be forthcoming when scholars examine how the conjunction of institutional, organizational, and socio-cognitive elements combine to produce variation in individual choice and action. Necessarily, this agenda would add to and draw from Historical Sociology, investigating changes in law, science, technology, and knowledge that affect both the incidence of unanticipated adverse outcomes, understandings about what is culpable and what is tolerable, and social definitions of what is normative and deviant at a particular historic moment; Economic Sociology, for research on markets, competition, institutionalized inequality, and social costs; Rational Choice Sociology, examining the disjunction between rational choice and outcomes; and Cultural Sociology, for analyzing how culture mediates environment, organization characteristics, cognition, and choice. Much can be learned from the strong theoretical interdisciplinary work on the dark side of organizations (e.g., Jervis 1970, 1976, 1997, Gaba et al 1987, Moe 1991, Sagan 1994, Reason 1997, Allison & Zelikow 1999).

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