A Dialectical Analysis of Role Enactment during the Emergency Period of Natural Disasters

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A DIALECTICAL ANALYSIS OF ROLE ENACTMENT DURING THE EMERGENCY
PERIOD OF NATURAL DISASTERS

A Thesis

Presented to
The Faculty of the Department of Sociology
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by
Kristen A. Myers
1990
APPROVAL SHEET

This thesis is submitted in partial fulfillment of
the requirements for the degree of

Master of Arts

Author

Gary A. Kreps

Approved, August 1990

Satoshi Ito

David P. Aday
To Michael and all my parents
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ABSTRACT

This study is the latest addition to a continuing research program originated by Kreps (1985), and then developed by him and several associates. The basis for the research program is Kreps' taxonomy of structural elements which is used to describe organization. The taxonomy includes the following elements: domains (D), tasks (T), resources (R) and activities (A). Explicit in Kreps' research is the dialectic of social action and social order and its effects on organizing and role enactment. Natural disasters are used as empirical settings for applying Kreps' taxonomy. After Bosworth and Kreps' original study of emergent and established organizations, a leading role theorist, Ralph Turner, suggested a change in methodology which would allow established and emergent organizations to be examined separately and then compared. Mooney's study dealt with 29 emergent disaster organizations; and Russell, using a slightly different methodology, analyzed participants from 52 emergent organizations. These two earlier studies address the complexities of organization and the complexities of role, respectively. The present study, like Russell's, attempts to explore the complexities of role enactment.

The present study documents role enactment by some 200 participants in organizations characterized as established by Saunders and Kreps (1987). The data are taken from the Disaster Research Center archives at the University of Delaware. The methodology of this study is more similar to Russell's than to Mooney's; therefore, the findings of this study are compared with Russell's. This comparison reveals that role-playing and role-making can be attributed to both emergent and established organizations. This means that role-playing and role-making are not mutually exclusive. The findings reveal that there is often a combination of the two operating in both emergent and established organizations. The dialogue with Ralph Turner has therefore proven to be quite productive and important.
A DIALECTICAL ANALYSIS OF ROLE ENACTMENT DURING THE EMERGENCY PERIOD OF NATURAL DISASTERS
INTRODUCTION

In a continuing research program, Kreps and his associates examine the process by which organizations are created or transformed during the emergency periods of natural disasters. My work will be the latest in a series of studies dealing with organization and role enactment. The purpose of this thesis is to extend, using a refined methodology, the previous research of Bosworth and Kreps (1986), Mooney (1989), and Russell (1989). In this paper, I will begin with a theoretical review of literature concerning the action/order dialectic, which is the theoretical foundation of the research team's work. The purpose of this review is to further elucidate the importance of Kreps' research program for the field of sociology. I will then review Kreps' organizational code because it provided the impetus for my own study. This will be followed by a discussion of the research on role enactment conducted previously by Kreps and his associates. I will then provide the rationale for the evolution of the current methodology. Finally, I will summarize and discuss my findings as the latest segment of Kreps' research.
THEORETICAL REVIEW OF THE ACTION/ORDER DIALECTIC

This review will be a theoretical one. My intent is to illustrate the development of individualism in the face of social constraint. To that end, I will ground my discussion in what Kreps (1985) terms the dialectic of social action and social order. In the first part of this review, I will discuss the works of two classical theorists, Weber and Durkheim. I will follow this section with a discussion of some works of contemporary theorists, principally Giddens, Collins and Habermas. Finally, I will review some key elements of role theory to distinguish between role-taking, role-playing and role-making.

For many years, sociologists have been trying to solve perplexing conceptual problems related to social action and social order (Alexander, 1982). These social scientists can be aligned with one of two dominant paradigms in the discipline: positivism and interpretivism (Kreps, 1989). But whether positivist or interpretivist, the primary issue to be faced is how to designate the role of the actor in social structure. According to Kreps, the positivist approach posits that "...the actor in the natural state is uncomplicated and motivated purely by self-gratification." (1989:257) The actors' ends justify their means, and their means can only be constrained by an external order (as Hobbes foretold). How individual actions are shaped by this external social structure has been termed the problem of order. The interpretivists, on
the other hand, look at "...the human actor as the prime mover of social structure" (Kreps, 1989:262). Normative constraint is internal and voluntary rather than external and coercive. Under this paradigm, the actor often behaves unpredictably and unhindered by social order. How social structure is possible in the face of individual action has been termed the problem of action.

Serving as a possible bridge between these two orientations is an implicit structuralist paradigm which acknowledges the dialectic of action and order. According to this paradigm, "...action and order are at once autonomous and fixed, yet in a state of mutual transformation" (Kreps, 1989:268). In other words, social actors are both subjects in that their actions shape social order, and they are objects, in that their actions are constrained by social order. Kreps and his associates are concerned with the implications that this dialectic of action and order has for two major concepts in sociology: organization and role.

**Classical Theorists**

When discussing "social action," it is important to define its meaning. Max Weber, in his article entitled, "Social Action and Its Types" (1961:173-179), discusses the term in depth by isolating types of action that cannot be considered "social" from definitions of different types of action that can be. Weber says that action which is not social can be oriented to inanimate objects, or it may be behavior that does not involve actual interaction between individuals. With respect to the latter, he argues that individual acts which are identical with the actions of many people are not necessarily social. An example is a crowd of people, all of whom open their umbrellas when it begins to
Weber's four types of social action are the following: zweckrational, wertrational, affectual, and traditional. Zweckrational action is rational, goal-oriented behavior. The objective of this action is similar to the Machiavellian principle that the ends justify the means. Wertrational, on the other hand, is behavior for its own sake; that is, the means are the ends. Affectual action is nonrational action, such as an emotional response. And, lastly, traditional action refers to habits or acts which people do not make a conscious decision to perform. Weber's discussion shows that there is not merely one type of action in which an individual may engage. Weber illustrates also that action may or may not be rational. Thus, Weber helps open the positivist blinders to types of social action which are not rational in the classic utilitarian sense. The realm of possibilities clearly is much broader. Yet, this is not Weber's only statement about individualism and social action (1958), as I will now discuss.

In *The Protestant Ethic and the Spirit of Capitalism*, Weber traces the development of Protestantism in relation to capitalism. Implicit in this excellent treatise is that individualism is fostered by Protestantism rather than Catholicism. Through his historical discussion of the development of Protestantism, Weber shows how the individual has come to be seen as supreme in modern society. I will review some main tenets of Weber's argument in order to make a case for the action/order dialectic; that is, that the individual is both a free and thinking being, yet at all times shaped and constrained by social structure.
In his discussion of Lutheranism, Weber describes a "calling" as the way to glorify God. He says "...that work in the calling was a, or rather the, task set by God" (1958:85). These callings were individual ways to show God one’s appreciation. To show God gratitude, people were supposed to perform their calling well. The performance of this calling was not dependent on others; the responsibility lay on the individual alone.

Weber relates his conception of "calling" to the predestination dimension of Calvinism. According to Calvin, God has pre-chosen who will be saved and who will be damned. Human beings do not know into which category they fall, so they all must glorify God as a safety measure for attaining salvation. Because they cannot learn whether or not they are saved by consulting their fellow human beings, they must put their faith in God alone. Weber discusses evidence of this mindset; he writes, "it comes out for instance in the strikingly frequent repetition, especially in the English Puritan literature, of warnings against any trust in the aid of friendship of men" (1958:106). The people were left with a "you're on your own" kind of mindset which lead, according to Weber, to "...a feeling of unprecedented inner loneliness of the individual" (1958:104).

The questions which the Calvinist indoctrination inspires are many: why would people glorify God if they have the belief that there is nothing they can do to influence their salvation? Why not just live their lives and discover their faith after they die? What reward is there for worshiping God and living a good life? Weber responds to these logical questions with a logical answer. He claims that those who
live good, pious lives are considered by others to be chosen. That is, when people know a person who loves and fears God, lives a clean, successful life, and contributes to the community, they say "She must be a chosen one; look how perfect her life is." In Weber's words, in practice this means that God helps those who help themselves. Thus the Calvinist, as it is sometimes put, himself creates his own salvation, or, as would be correct, the conviction of it (1959:115).

Thus, the religious sects which grew out of Protestantism have led to the trend of individualism experienced in Western countries today. It is fascinating that an ideology as over-arching and influential in society can have come from religious doctrines. Yet, Weber argues convincingly that these doctrines, which emphasize that individuals are responsible for their own salvation, have indeed contributed to the notion that the individual is sacred above the group as interpretivists tend to claim. The institution of religion has shaped people's lives, and certain people have shaped the institution of religion. Yet, there is more to the development of individualism than religious beliefs, as is evidenced by the work of Emile Durkheim.

In prominent theories of social change, one can find more evidence of emphasis on the social actor. Though the prospect of treating the individual as superior may have been born with the Reformation, it did not affect all societies at once. According to Emile Durkheim, societies develop from one stage to another and, as this change occurs, only then do people's notions of individuality evolve. According to Durkheim, societies all have a certain cohesion or solidarity. There are two different types of solidarity, and they are termed mechanical and organic. In The Division of Labor, Durkheim describes these two
forms of solidarity and the transformation which occurs from one to the other.

Societies characterized by mechanical solidarity tend to be more simple than those characterized by organic solidarity. Here the people in the society are similar, and the society is held together by these similarities. Members have a strong collective conscience which means they are oriented to the whole instead of the parts (individuals). They see the forest, not the trees. In these societies, therefore, there is little or no individualism because this would undermine the stability of society, or "social order." But as population and density increase, societies begin to transform. No longer can members all perform similar functions-- life has become too complex. People begin to specialize and this specialization leads to an evolving division of labor. Societies evidencing organic solidarity are likened to biological bodies in that each part is necessary for the functioning of the whole. Yet, in these societies the collective conscience is weak. Here, the individual is valued highly and differentiation is encouraged rather than discouraged. Each tree is stressed more than the forest. Durkheim does not claim that mechanical societies lack a division of labor. In fact, he describes a simple division of labor in the following passage:

as richly endowed as we may be, we always lack something, and the best of us realize our own insufficiency. That is why we seek in our friends the qualities that we lack, since in joining with them, we participate in some measure in their nature and thus feel less incomplete. So it is that small friendly associations are formed wherein each one plays a role conformable to his character, where there is true exchange of services (Durkheim, 1933:56).

Thus, even in mechanical societies there exists a division of labor. Yet, Durkheim is concerned mostly with complex divisions of labor in
organic societies. Using Durkheim as a guide, we can see how (with or without religion) the emphasis on individual freedom becomes institutionalized in modern, industrialized societies out of structural necessity.

The most prominent question asked about societies in which the individual is considered predominant is "How is social order maintained?" This is a good question because it is a logical response to individualism. That is, in organic societies where people are more concerned with themselves than the good of the community, how can social order operate? If individuals are free, what, if anything, constrains them? Why is society not totally chaotic? There have been several theoretical responses to these questions. Order-driven theorists respond that individuals simply are not free; their actions are shaped if not determined by the structure around them. Although this is one possible response to these questions, there is another point of view which claims that the individuals are free, and yet social order also exists. I will discuss various theories which originate from this perspective for the remainder of this section. Since I have just discussed Durkheim, I will begin with his solution to the problem of social order in the face of free individuals.

Although societies characterized by organic solidarity have a weak collective conscience, they have strong social ties. This may sound like a paradox, but it is also quite logical. According to Durkheim, as the division of labor becomes more complex, "the different parts of the aggregate, because they fill different functions, cannot be easily separated" (1933:149). In other words, because people specialize, they
must rely on others for goods and services which they, themselves, cannot produce. For instance, it is more than likely that professors do not grow their own food, build their homes with their own hands, make their own clothing, etc. In mechanical societies, however, it is quite likely that people did all of these things for themselves either alone or with the help of their neighbors. Yet, though the professors do not necessarily feel an obligation to their neighbors, they are dependent on them for many of their own needs. This is the paradox of organic solidarity. Individuals are free to make more choices, yet they are constrained by their ties to the conventional order. They cannot upset their security within the order or else they will lose the ability to receive services from the society.

Durkheim also proposes a way to maintain a collective conscience in spite of increasing diversity and individualism. He says that occupational groups can serve the function of integrating individuals. These worker/owner associations provide a common ground on which people can identify with one another. Durkheim says that work is one thing which almost everyone must do, so the occupational associations are the most viable source of cohesion. In less diverse societies, these associations will take the form of guilds, or club-like associations in which employers and employees can interact and make policy. Yet, Durkheim devises a more elaborate schema for more complex societies.

According to Durkheim, each profession would have a council of representatives. Each council sends representatives to a national council for their particular profession. Then, the various national councils all send representatives who would form the governing body of
the society. Through this system, "...the national governing body would represent the interests of everyone, as well as having all the various expertise and knowledge of its diverse membership to call on in the formulation of national policy" (Ashley and Orenstein, 1985: 109). This is an interesting idea, but it has been criticized as being naive (Krause, 1982). The associations could be used for corrupt purposes and this would not serve to integrate the society but, to polarize it. Nevertheless, Durkheim tries to make allowances for human interaction albeit on a less familiar level than in mechanical societies.

Contemporary Theorists

The Classical statements of Weber and Durkheim are not the only relevant theories concerning the problems of social action and order. Many contemporary theorists have been perplexed by these problems as well. These theorists feel that structure is influential in people's lives, but then add that social structure and individual freedom are not mutually exclusive. Modern theorists, therefore, see both the forest and the trees, to maintain the same analogy. It simply cannot be possible that individuals' lives are completely predetermined by social structure. Yet, it is also impossible that individuals are free to choose any life-style they desire with no regard for greater society. There must be some common ground. A personal example may prove useful: I was free to choose the university that I wanted to attend. Yet, as a middle-class woman, I had been channeled into higher education by family expectations. While I was free to choose among colleges, I had much less of a choice about whether or not to obtain a Bachelor's degree.

Only one of countless examples, this illustrates the types of
choices people make routinely in day to day living. This conception of constrained freedom is not consistent with C. Wright Mills' definition. He writes, "freedom is, first of all, the chance to formulate the available choices, to argue over them-- and then, the opportunity to choose" (1959:174). According to structuralists people have a great many options, but only a set number from which to choose. They cannot decide what the options will be because these are determined by the structure. As stated above, there are several contemporary theorists who have discussed this dilemma. Because I am discussing the inseparability of structure and the individual, I should begin with Anthony Giddens.

Anthony Giddens' work on what he calls "structuration" has been quite helpful in deciphering the relation between social action, the individual, and social order. Giddens disagrees with Claude Levi-Strauss because the latter's structuralism "...simply ignores human agency or the capacity of people to reflect, monitor, define, and decide" (Turner, 1986:460). Giddens posits that individuals are free to choose for themselves and that structure is not deterministic. Giddens says the following:

structure is not some ex cathedra, external, and constraining force that makes humans into robots and dupes. Rather, structure is implicated in, and reproduced by, the day-to-day routines of people in interaction (Turner, 1986:460).

Giddens elaborates on this issue in his discussion of duality and dualism. According to Giddens, dualism refers to the separation of structure and the individual. Obviously, Giddens does not accept the notion of dualism. Duality, on the other hand, means that the individual and structure are interrelated. He writes that "structure is
not to be equated with constraint but is always both constraining and enabling" (1984:25). Duality, therefore, is an idea consistent with the action/order dialectic.

Giddens' discussion of routines is also useful in understanding the connection of the individual to structure. Giddens does not simply state that the two entities are interconnected; he goes on to explain how they are. According to Giddens, although individuals are free, there are rules which serve as guidelines for their actions. He calls groups of rules "structural sets." These structures "...are used to produce and reproduce certain types and forms of social relations across time and space" (Turner, 1986:467). Thus, though individuals have choices, they become patterned over time, and can, therefore, be studied. Actions are not seen as random, unpredictable spurts from different individuals. He says that people also use routines in their interactions to reproduce structures. He cites several ways people can routinize interaction such as turn-taking, tact, and role enactment. As people enact certain roles, they "...bring to situations a position or 'social identity that carries with it a certain range or prerogatives and obligations...'" (Turner, 1986: 472). Roles, because they can be generalized beyond time and place, tie individuals to the larger structure. I find this a compelling notion, and one which I will discuss in reference to Kreps' research program. But before I move on, let me conclude that Giddens' work is thorough and quite useful in decoding the puzzle of the action/order dilemma.

Randall Collins is another contemporary theorist who is concerned with the dialectic in question. Collins has a delimited view of
structure and what he defines as macrostructure. Collins says that, basically, all there is to society is the moving back and forth of different people. Yet, he says that

"social structure" could be brought into such a picture if we understand that men live by anticipating future encounters and remembering past ones. Structure is recurring sorts of encounters' (Turner,1986:435).

Structure, therefore, is background motivations for action and also the patterning of actions. Collins distinguishes between two types of structure which are microstructure and macrostructure. Microstructure refers to the small-scale interactions of individuals. Collins sees microprocesses as the focus for study. Macrostructure, however, does exist. Yet, Collins says that macrostructure refers only to the number of people involved in an interaction, the space occupied during the interaction, and the time span of the interaction. If each of these three elements is large, then the structure is on the macro level. Therefore, although Collins acknowledges the existence of a macrostructure, he sees it as merely large chains of interactions among individuals. Because he asserts that "'structures never do anything; it is only persons in real situations who act'" (Turner,1986:438), Collins concentrates on patterns of individual interaction.

Collins' notion of social order is quite similar to Giddens' in that both see patterns of individual action as providing order over chaos. Yet, I feel that Giddens' conceptualization of structuration and duality are more sophisticated than Collins' ideas of macro and microstructure. I agree with Jonathan Turner's assessment that Collins' formulations are "rather vague and metaphorical" (1986:454). Collins' theory does, however, apply to many modern institutions such as social
control and politics in that it demonstrates how the size and scale of social organization may limit or enhance its effectiveness.

Jurgen Habermas, a critical theorist, takes another approach to the action/order dilemma. Coming from the Frankfurt school, Habermas incorporates Marxian ideas into his theories. Habermas sees the state as encroaching on the freedom of individuals. He discusses the "public sphere" as the realm of society where people can discuss issues and problems of society and work them out together. He sees people as, in Weber's terms, rational and perfectly capable of maintaining order through this rationality. He does not see individuals as the Hobbesian beasts which are always in need of checks and balances to control them. In his discussion of the "legitimation crisis," Habermas says that modern society is experiencing the following three problems:

1) the decline of the public sphere, 2) the increasing intervention of the state into the economy, and 3) the growing dominance of science in the service of the state's interests in technical control (Turner, 1986:194).

Because of these problems or trends, individuals have become less free and less in control of their own lives. Habermas proposes that people need to throw off the shackles of the state and reestablish the public sphere. If individuals can have a way of influencing the content of the social structure, then it will be more meaningful to them (Turner, 1986:212). Social order will prevail if individuals can once again play this creative role throughout the public sphere. Habermas sees existing social order as too constraining, yet he does not propose the abolition of social order. He feels that social order will exist with an automatic type of regulation if people are given more freedom. This is a compelling argument, and one which I find interesting.
Throughout this review, I have emphasized the role of the social actor in society. I feel that through this discussion it is apparent that the individual does, indeed, have a part in the structure of society; yet the structure of society also shapes and constrains the actor. One aspect of this discussion which has not been fully developed, however, is exactly how the actor is tied to the structure. This is a critical matter which must be explained and discussed before I can describe the research conducted by Kreps and his research team. Thus, the last segment of this theoretical review will address role theory.

**Role Theory**

Role, as I have stated above, is a useful way of linking individuals to a broader social order. As Alvin L. Bertrand says, role relationships must be seen as the 'threads' from which the fabric of social organization is woven. They are vital to the system structure which allows for predictability in human behavior (1972:42).

Kreps uses role to tie the individual to the social order (as Giddens proposes in his work). In order to explain clearly the most recent research done on disaster organizations, it is first necessary to explain some elements of role theory. Over the years, role has been conceptualized in several different ways. Goffman equates roles with masks that people wear according to different situations (Vander Zanden, 1987). Vander Zanden describes roles as involving categorizing. He says that "by means of roles we structure our social world in terms of classes or categories of potential coactors (individuals with whom we may interact)" (1987:238). Roles have inherent expectations as to what the actor must do to perform the role correctly. Allen and van de
Vliert describe general role expectations as the following:

they indicate what the focal position incumbent ought to do. As a bus driver, one must stick to the schedule and stay on the route. As their foreman, one must hire, evaluate, and dismiss employees (1982:65).

Every role entails expectations of some sort. There are three different ways to enact roles, and they are the following: role-taking, role-playing, and role-making. The first is a concept coined by Jacob Moreno. According to Moreno (as opposed to Mead), "role-taking suggests the acting out of a finished or completed role, role-playing suggests freedom in the acting and manipulating of roles, and role-making implies a high degree of freedom to create and reconstruct roles" (Russell, 1989: 14). Kreps and associates are mainly concerned with the latter two concepts.

Kreps' interpretation of role has also been influenced by the work of Ralph Turner. Turner does not agree with the contention that roles are prescribed sets of expectations which must be enacted as dictated by these expectations. In fact,

Turner believes that roles involving normative conformity are, in reality, exceptional cases that occur when a structure limits opportunities, when people receive few rewards from their roles, and when people are insecure about their capabilities (Turner, 1986:370).

Turner says most roles are enacted with some improvisation, and that there are more flexible interpretations of role expectations than role theorists suggest. Kreps and his group have sought to discover whether roles are improvised or formally enacted more often during a highly chaotic period, such as the emergency period of natural disasters.

Kreps and associates use what Barry Wellman calls a networking approach in that they "...analyze personal networks--defined from the
standpoints of focal individuals—to study how the composition, content, and configuration of ties affect the flow of resources to these persons" (Wellman, 1984:160). They also look to the links between individuals and organizations to analyze role enactment. Ralph Turner has been instrumental in this research, as I will discuss briefly below with respect to roles, social organizations, and, most importantly, the action/order dialectic.
THE IMPLEMENTATION OF ROLE THEORY IN STUDIES OF DISASTER

The theoretical background which I have described sets the stage for the research conducted in this and previous studies by Kreps. Yet, before I expound on these various research projects, I must first explain Kreps' structural code, for it is the basis for all the relevant research which has been conducted in the past ten years.

Kreps' Structural Code

Kreps has designed a structural code in trying to capture the essence of the action/order dialectic. The elements of the code (domains, tasks, resources, and activities) are "individually necessary and collectively sufficient for organization to exist" (Bosworth and Kreps, 1986: 699-700). Domains (D) and tasks (T) are ends of organizing, and resources (R) and activities (A) are means of organizing. Kreps and Bosworth capture the dialectic in the sense that "means-ends relationships involving (D), (T), (R), and (A) reveal organization as ever-emerging and changing" (1986: 700). In order for any research to be replicated accurately, all central concepts must be well defined. As Aday states, "the validity of the research depends on the researcher's success in defining the concepts (ideas) so that relevant observations can be made" (1990: 82). Bosworth and Kreps (1986) have painstakingly defined their concepts, so I will present them verbatim. The elements of Kreps' structural code are defined as the following:
Domains (D) are collective representations of bounded units and their reasons for being (Durkheim, 1938). In the circumstance of disaster, domains translate actual or threatened impacts as spheres of collective action which distinguish direct participants from all others. Stated or written in communications at the boundaries of the spheres of action, domains identify organization as open system that has power and external legitimacy (Thompson, 1967).

Tasks (T) are collective representations of a division of labor for the enactment of human activities (Durkheim, 1938). As such, they are vocabularies of collective action which give it focus and interdependence (March and Simon, 1958). Stated or written in communications of those who enact them, tasks identify organization as closed system that has power and internal legitimacy (Thompson, 1967). As things, domains and tasks are independent and may precede or follow each other in the unfolding of organization.

Resources (R) are individual capacities and collective technologies of human populations (Durkheim, 1933; Weber, 1968; Lenski and Lenski, 1982). Widely varying in both kind and quantity, resources provide objective and subjective requisites of collective action (McCarthy and Zald, 1977; Gamson, et al., 1972). Their presence as things comes to be defined with reference to domains and tasks. However, their mobilization may precede or follow either of them.

Activities (A) are the conjoined actions of individuals and social units (Alihan, 1938; Hawley, 1950). As things, activities both enable and are constrained by domains, tasks and resources. Accordingly, they are no more or less important than the remaining elements (1986:700).

Each element in the code is a unique expression of social structure. Organization exists when all four elements are present. There are 64 ways to combine these elements (see Table 1), and no pattern can be assumed (Bosworth and Kreps, 1986:700). Bosworth and Kreps examine all possible combinations of the elements and they develop a 64 cell
TABLE 1: The Taxonomy of the Sixty-four Forms of Association

<table>
<thead>
<tr>
<th>One-Element Forms</th>
<th>Two-Element Forms</th>
<th>Three-Element Forms</th>
<th>Four-Element Forms</th>
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</tr>
<tr>
<td></td>
<td>ART</td>
<td>ARTD</td>
<td></td>
</tr>
</tbody>
</table>

Total 4 12 24 24

(Table taken from Kreps, 1989:112)
taxonomy which includes the following: "...4 one-element forms, 12 two-element forms, 24 three-element forms, and 24 four-element forms" (1986:700). The four-element forms are organizations, but the remaining 40 patterns illustrate other structural forms. The organization pattern described as (DTRA) is order-driven, and the organization with the pattern described as (ARTD) is action-driven (these are a polar ends of the continuum). In between these two poles, there is a range which contains the remaining 22 four-element forms; and this range, or taxonomy, illustrates the action/order dialectic.

Kreps and associates' research has been funded by grants numbered CEE-8121135, CEE-840048, and CEE-9121135 from the National Science Foundation. The research group examines interviews which were conducted during the response periods of natural disasters. These interviews are located in the archives of the disaster research center, and they are used with the permission of Henry Quarantelli and Russell Dynes. In their research, the Kreps' team has

...played the role of outside observer in [their] archival studies of disaster response...[They] have searched for instances of organization and then [tried] to reconstruct how they took place (Kreps,1989:214).

Using their taxonomy, Kreps et al can trace the development of the disaster response. After each organization has been designated with a code type, it is then given a score according to a derived metric (see Table 2). The metric is "...designed to capture all the transivities between the two pure forms [DTRA and ARTD]" (Mooney,1989:12). Given one point for each conforming transitivity, the metric works in the following manner: starting with the social order end of the continuum, when (D) precedes (T), (R) and (A), the score is 3 points; when (T)
### TABLE 2: The Origins Metric

<table>
<thead>
<tr>
<th>Organizational Form</th>
<th>Logical Metric</th>
<th>Number of Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTRA</td>
<td>6 (+3)</td>
<td>(1)</td>
</tr>
<tr>
<td>DTAR</td>
<td>5 (+2)</td>
<td>(3)</td>
</tr>
<tr>
<td>DRTA</td>
<td>4 (+1)</td>
<td>(5)</td>
</tr>
<tr>
<td>TDRA</td>
<td>3 (0)</td>
<td>(6)</td>
</tr>
<tr>
<td>TRDA</td>
<td>2 (-1)</td>
<td>(5)</td>
</tr>
<tr>
<td>TARD</td>
<td>1 (-2)</td>
<td>(3)</td>
</tr>
<tr>
<td>ARTD</td>
<td>0 (-3)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

(Table taken from Kreps, 1989)
precedes (R) and (A), the score is 2 points; when (R) precedes (A), the score is 1 point. Thus, the pattern (DTRA) receives a score of 6 (3 + 2 + 1), while (ARTD) receives a score of 0. Bosworth and Kreps (1986) then subtracted a constant 3 so that action and order would be mathematically polar (+3 and -3), and 0 would indicate a perfect balance. It is on this conception of organization as alternative structural forms that Kreps' and associates' subsequent work is based.

Original Study by Bosworth and Kreps

As mentioned above, Kreps and his associates are mostly concerned with role-making and role-playing as defined earlier by Jacob Moreno. In his methodology, Kreps has designed a way to measure role so that the action/order dialectic is exemplified. According to this methodology, role-playing, or role imitation, lies at the order end of the continuum. At the action end of the continuum is role-making, or role innovation. Looking at the archival information, Kreps and Bosworth use the concepts of role-playing and role-making to fortify their theory of an action/order dialectic. They draw a purposive sample from all of the completed organizations (those with all 4 elements). This sample consists of 37 cases from both emergent and established organized responses. Emergent organized responses are those which are created during the event, and established organized responses are those which exist prior to the event. An example of an emergent organized response would be a make-shift morgue set up in a high school gymnasium. An example of an established organized response would be a police evacuation. These cases were drawn from a population of cases with midpoint scores (zero) on the action/order metric.
Bosworth and Kreps use four criteria to assess whether the incumbents are role-playing, role-making, or if they enact a mixture of two forms. Before a criterion can be implemented, primary post-disaster roles must be discerned. To standardize the methodology, the researchers compare post-disaster roles with the pre-disaster occupations of the incumbents. Next, the incumbent role links during the disaster must be calibrated in order to determine their continuity or discontinuity with pre-disaster role links. These links do not include personal acquaintances. As Vander Zanden points out, "roles enable us to assume that in certain respects we can ignore personal differences; that people are interchangeable; and that as a practical matter we can deal with them in almost identical ways" (1987:238). The focus, therefore, is on the role and not the individual. Next, the researchers evaluate the incumbent's role performance. Lastly, the group examines the degree of task specialization for each incumbent's role.

These criteria have been refined over time, but they originally were operationalized by Bosworth and Kreps in the following manner:

**CRITERION 1: Inconsistency Vs. Consistency of Status/Role Nexus.** Role-playing occurs when role is consistent from pre-disaster to post-disaster. An example is a doctor administering first-aid. Role-making occurs when the role is inconsistent from pre-disaster to post-disaster. An example would be an accountant administering first-aid.

**CRITERION 2: Discontinuity vs. Continuity of Role Linkages.** Role-making occurs when "multiple roles of a post-disaster response are not connected prior to the event (705)." Role-playing occurs "where pre-disaster links among role are mirrored following impact (705)."

**CRITERION 3: Unique Role Performance vs. Role Boundary Expansion.** Role-making occurs when "...no collective
representation of role enactment exists at a given stage (705)." Role-playing occurs "...when such representation does exist (705)."

CRITERION 4: Homogeneity and Heterogeneity of Roles. Role-making, or homogeneity, "...suggests that the roles are undifferentiated and still in the process of being defined (705)." Role-playing, or heterogeneity, occurs "with increased specialization and task structure, roles are established and behavior dictated by social control (705)."

In Bosworth and Kreps' original findings, "role-playing increases as organization comes into being" (1986:707). That is, by the time all four elements are present, role-playing dominates.

Turner's Critique

Since the original findings, Kreps' research group has made several changes in methodology. Most of these changes were made in response to Ralph Turner's recommendations. Turner reviewed Bosworth and Kreps' paper, "Structure As Process: Organization and Role," and he raised two especially trenchant questions regarding their work. Firstly, Turner noted that "...if domain must be defined by some legitimate authority, a bias toward continuity rather than emergence is introduced" (Kreps, 1989: 212). Turner went on to propose that there is also a bias toward role-playing. Turner suggested that Bosworth and Kreps examine emergent organized responses separately from established organized responses and then compare their findings. This would eliminate the bias toward established organized responses. Bosworth and Kreps agreed that this would be a good methodology, as well as a test for reliability, and they began to expand their research.

Bosworth and Kreps have divided the organized responses into emergent and established responses. Using refined criteria, Jennifer
Mooney and Stephen Russell examine the emergent organized responses to determine if action or order dominates. To better explain their theses, the following are synopses of both Mooney and Russell's work.

**Mooney's Study of Emergent Organized Responses**

Jennifer Mooney, in her thesis entitled, "Organization and Role: Conception and Measurement," continues Bosworth and Kreps' research on role enactment and organization after natural disasters. Mooney's goal is to place the roles people enact onto an action/order continuum; role-playing is at the social order end, and role-making is on the social action end. Her objective is "...to illustrate the dialectic of role-making and role-playing that occurs in the operation of nascent organizations using archival data on natural disasters in the United States" (1989:5). Mooney undertakes role analysis only in the cases in which organization is emergent. She examines 52 case studies of emergent organization studied earlier by Saunders and Kreps (1987) to determine the roles which all of the participants enact in each organized response. This is a painstaking process because she must piece together scraps of information from multiple interviews.

Mooney uses three criteria in her analysis of role. These criteria were taken from Bosworth and Kreps' previous research, but Mooney modifies them in order to increase their descriptive power. Recall that criterion 1 is consistency vs. inconsistency of the pre- and post-disaster status/role nexus. The point here is to look at the pre-disaster occupational role of each actor, and compare it with his or her primary post-disaster role to see if each actor is enacting a role that would be expected of him or her. Status/role nexus consistency
indicates role-playing, and inconsistency indicates role-making.

Occupation is the focus of pre-disaster status/role because of the assumption that occupation is a central part of the individual's role repertoire, and also because it serves to standardize the findings. Mooney does not consider secondary occupational roles or primary non-occupational roles.

Criterion 2 concerns continuity vs. discontinuity of pre- and post-disaster linkages. Using this criterion, Mooney examines pairs of incumbents who are linked in their involvement in the same disaster response. She looks to see if their pre-disaster role linkages are what one would expect to find in a normal situation. For instance, do military police routinely interact with disc jockeys in daily affairs? If the answer is yes, the linkage is continuous; if not, as is the case here, the linkage is discontinuous. Continuous relationships (linkages) signify role-playing and discontinuous relationships signify role-making.

The third and final criterion is termed unique role performance vs. role boundary expansion. The goal here is to measure the amount of innovation employed in each post-disaster role. In order to do this, Mooney breaks role-playing and role-making down into specific categories. These divisions were inspired by Turner's notion of role-making being a normal component of role-playing and, as Kreps points out in response, that role-playing is a normal component of role-making. Under role-making she lists the following:

- role prototype enactment: role exists; change in incumbent; consistent performance
- role redefinition: role exists; change in incumbent; improvised performance
radical role redefinition: role exists; change in incumbent; fundamental change in performance
role invention: role does not exist; new incumbent; new performance

Under role-playing she lists the following:
formal role enactment: role exists; no change in incumbent; consistent performance
working role enactment: role exists; no change in incumbent; improvised performance
radical transformation: role exists; no change in incumbent; fundamental change in performance

Mooney omits the fourth criterion, homogeneity vs. heterogeneity of roles "because of a possible tautological effect (Turner, 1989)" (Mooney, 1989:17). Turner thought this criterion was already captured by the task element. Through this complex system, Mooney determines how much innovation each actor uses in his or her post-disaster role.

Mooney's findings augment those of Kreps and Bosworth. She finds for criterion 1 that, while a majority (65.8%) of the incumbent's roles are consistent from the pre- to the post-disaster period, there is a considerable degree of role-making in the emergent organizations.

Criterion 2 evidences a balance between continuity and discontinuity "...with a slightly greater tendency toward the creation of new links between the roles of incumbents (1989:84)." She finds that 32.9% of the links are continuous and 43.6% are discontinuous (1989:84). Once again, both role-playing and role-making operate to a substantial extent. In criterion 3, Mooney finds that most (54.8%) incumbents gravitate slightly toward role-playing.
Overall, Mooney concludes that role-playing dominates slightly in emergent organized responses to natural disasters. The dialectic of order and action is clear.

**Russell's Study of Individual Respondents in Emergent Organized Responses**

Stephen Russell, in his thesis entitled "Role Enactment and Disaster Response: A Methodological Exploration," continues Bosworth and Kreps' research on post-disaster organization, especially noting the most recent additions by Mooney. He uses Mooney's research to compare and contrast with his own research, thus enabling the reader to understand the evolutions of the conception and measurement of role enactment. A major portion of his conception of role enactment comes from the basis provided by previous researchers, but he also modifies several aspects of the measurement of role. To avoid repeating myself, I will concentrate only on those aspects which Russell modifies.

After considering the difficulties Mooney encountered in trying to track down actors in the various accounts of each disaster, Russell, with the advice of Kreps and Bosworth, decides to study only the respondent's (interviewee's) role enactment. Instead, he takes his data from "...the incumbent's perception of that role in terms of his role repertoire" (1989:53). If the respondent (interviewee) does not provide the necessary information, Russell disregards that particular case. This eliminates much of the data gaps that Mooney dealt with, and facilitates Russell's accumulation of data.

When examining pre-disaster roles, Russell looks at the incumbent's occupation; yet he adds a new dimension to be examined. Russell feels that secondary roles and primary nonoccupational roles can
be important, too. This is especially the case if a secondary role happens to be National Guardsman—a role that can affect role performance in the post-disaster period. A secondary role could be important in evaluating criterion 2, as well, because it might increase the continuity of the respondent's role links. Therefore, secondary roles are considered in the measurement of criterion 1 as well as 2.

In criterion 2, Mooney assumed that role linkages existed if the incumbents were involved in the same organization. Russell decides to test these linkages empirically to be sure that these links exist. He also sees if the incumbents are linked to other organizations, and not just linked to other incumbents. Russell also undertakes the notion of intra- and inter-organizational links. Here Russell examines which roles are boundary spanning, or inter-organizational.

Russell struggles with Mooney's seven subdivisions of criterion 3, and decides to modify this criterion as well. He examines the entire current role repertoire. He asks, "'For whom does role exist?'" (1989:30), instead of wondering how society defines roles. He decides that the amount of knowledge of the expectations surrounding a role is crucial when someone is enacting that role. He also decides that knowledge is only relevant in role-making, because role-playing involves a substantial knowledge base already. He uses the categories that Mooney introduced, but he puts them into 4-celled tables which are organized by the amount of knowledge possessed by respondents, and the type of knowledge required for the role to be adequately performed (general or specific). These tables are distinguished according to disaster impact (high or low). The rationale for including this
TABLE 3: Russell's Findings

Criterion 1:

<table>
<thead>
<tr>
<th>Consistent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistent</td>
<td>22</td>
<td>38.6%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>1</td>
<td>1.8%</td>
</tr>
<tr>
<td>totals</td>
<td>(57)</td>
<td>(100.0%)</td>
</tr>
</tbody>
</table>

Criterion 2:

<table>
<thead>
<tr>
<th>Continuous</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discontinuous</td>
<td>120</td>
<td>21.9%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>42</td>
<td>7.7%</td>
</tr>
<tr>
<td>totals</td>
<td>(547)</td>
<td>(100.0%)</td>
</tr>
</tbody>
</table>

Criterion 3:

<table>
<thead>
<tr>
<th>Role-Playing</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Role Enactment</td>
<td>10</td>
<td>17.5%</td>
</tr>
<tr>
<td>Working Role Enactment</td>
<td>13</td>
<td>22.8%</td>
</tr>
<tr>
<td>Radical Transformation</td>
<td>9</td>
<td>15.8%</td>
</tr>
<tr>
<td>subtotal</td>
<td>32</td>
<td>56.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role-Making</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Prototyping</td>
<td>8</td>
<td>14.0%</td>
</tr>
<tr>
<td>Role Redefinition</td>
<td>14</td>
<td>24.6%</td>
</tr>
<tr>
<td>Radical Role Redefinition</td>
<td>2</td>
<td>3.5%</td>
</tr>
<tr>
<td>Role Invention</td>
<td>1</td>
<td>1.8%</td>
</tr>
<tr>
<td>subtotal</td>
<td>25</td>
<td>43.9%</td>
</tr>
<tr>
<td>total</td>
<td>(57)</td>
<td>(100.0%)</td>
</tr>
</tbody>
</table>
variable is that "when considering distinctions within role-making, it seems that the level of disaster impact, general knowledge of role requirements, and incumbent knowledge of those same requirements all must be considered" (1989:33).

Russell's findings on 57 role incumbents are similar to Mooney's findings on 29 emergent organizations. Russell's findings are displayed in Table 3. In criterion 1, Russell finds 59.6% of the incumbents (as opposed to 67% of Mooney's organization members) had consistent roles in the post-disaster period. Russell's results in criterion 2 point more directly to role-playing (75% of intra-organizational links), whereas Mooney's illustrate a mixture of role-playing and role-making. Russell attributes these findings to the use of "other relevant role." Russell says that "because the researcher used whatever role was relevant to the link, more continuous linkages were recorded than when simply considering the occupational role" (1989:83). Overall, Russell states that his findings "...generally support Mooney's findings, except that it seems to have taken one more step in the direction of innovation, the number of consistent roles were not as high and there was less role playing" (1989:88). Yet, his overall findings show considerable role-playing in emergent organizations. The counterpoint question for my study becomes as follows: is there evidence of role-making in established organizations?

Russell's research shows a more specific method of approaching the disaster data. He has taken ideas from past research and improved them where he, along with Kreps and Bosworth, deemed necessary. Yet, as with Mooney, his research can serve as a doorway to more clarifications and
modifications that can only improve upon the base which Russell helped to build. As Russell said in his thesis, "the next logical step for Kreps' research program would be an examination of established organizations using these two refined methodologies" (1989:88-9).

The Present Study

The purpose of my segment of this research project, as I have stated above, is to examine the roles enacted by respondents (interviewees) in established organized responses to disasters. Once again, I am searching for similarities and differences between degrees of role-playing and role-making in established organizations as opposed to emergent organizations. My primary model for comparison will be the work completed by Russell on role enactment by respondents (interviewees) in emergent organized responses.
METHODOLOGY

The methodology which I use is similar to Russell's, but the criteria for measuring role have been refined even further. While some of the elements in the criteria have already been mentioned, I will review them in depth to emphasize their main components as well as the changes that have been made. These changes have been made on the advice of Bosworth and Kreps. Within the definitions of criteria 1 and 2, I have added examples from my research. I provide several examples of criterion 3 in the Findings section of this thesis.

CRITERION 1: Consistency vs. Inconsistency of Status/Role Nexus. The question addressed in this criterion is whether or not involvement in a post-disaster response is expected for a respondent, given his primary occupational role. If involvement is expected, there is consistency. If not, there is inconsistency. For example, a policeman would be expected to be involved in a search and rescue operation, whereas a superintendent of schools would not.

CRITERION 2: Continuity vs. Discontinuity of Role Linkages. The goal here is to capture the relational dimension of roles. Continuous role relationships are linked in the pre-disaster period, and they indicate role-playing. New role relationships are discontinuous, and they indicate role-making. Some roles are intra-organizational, and some are inter-organizational (boundary spanning). For example, a police patrolman is routinely linked to a police sergeant, but not to a radio announcer.

CRITERION 3: Post-Disaster Role Performance. An underlying continuum of social action and social order is assumed, regardless of whether or not the incumbent is established or emergent. This criterion measures the extent to which role-making is part of role-playing, and vice versa. Two decisions must be made: First, is the incumbent emergent or established in the post-disaster role? By that I mean, is the role part of the respondent's role repertoire or not? The
second question asks, is the incumbent role-making or role-playing? The resulting 4-fold property space can be specified:

<table>
<thead>
<tr>
<th>Dimensions of Action and Order</th>
<th>Role-Playing</th>
<th>Role-Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Incumbency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Established</td>
<td>Formal</td>
<td>Working</td>
</tr>
<tr>
<td>Emergent</td>
<td>Prototyping</td>
<td>Redefinition</td>
</tr>
</tbody>
</table>

The elements of the table are defined as the following:
- **Formal Role Enactment**: role exists, established incumbent, programmed performance.
- **Working Role Enactment**: role exists, established incumbent, role improvisation.
- **Role Prototyping**: role exists, emergent incumbent, programmed performance.
- **Role Redefinition**: role exists, emergent incumbent, role improvisation.

In addition to these three primary criteria, I use a revised version of Russell's table on role knowledge. Russell's distinction by disaster impact is eliminated, but there is an added column under knowledge required (technical). The previous "general" and "specific" types were not exhaustive. The knowledge table now looks like the following:

<table>
<thead>
<tr>
<th>Knowledge Required</th>
<th>General</th>
<th>Specific</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incumbent Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>High</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
By general knowledge I mean that basic familiarity with the role's requirements will suffice for the role to be performed adequately. Anyone could walk in off of the street and enact the role with no trouble. By specific knowledge I mean that some sort of training or experience is required. If the role requires knowledge of certain networks through which contacts must be made, this knowledge is classified as specific. By technical knowledge I mean that the role enactment requires some sort of specialized education or training that cannot be readily transferred to the incumbent. The knowledge variable does not have the same importance as the three criteria, but it adds important information about the role of knowledge in role performance.

In the following section, I will discuss two case examples. The first is taken from a sample of emergent organized responses, and the second comes from the sample of established organized responses. Hopefully these examples will provide clear illustrations of the methodology and the data it produces.

Sample Case Number 1: Role Incumbent in Emergent Organization

Perhaps the best way to illustrate how this methodology operates is to give a step-by-step example. In my discussion of this interview, I will give the background and the rationale for my decisions concerning the three criteria. Although in my research I will deal strictly with established organizations, this case is one from an emergent organization. The interview I have chosen related to the flood in Fairbanks, Alaska, in 1967. This was a destructive flood that spread throughout the entire region. Fairbanks was a primary area for refugees to go. At first, the majority of victims came from rural Indian
reservations, but, as the water rose higher and higher, the citizens of Fairbanks themselves became refugees. Most of the schools in Fairbanks were used as shelters, and this interview was conducted in one of these shelter/schools. This interview is with Dr. Lark (a pseudonym), the superintendent of schools in Fairbanks (this is his pre-disaster occupation). During the post-disaster period, Lark acted as an ad hoc shelter manager. His pre- and post-disaster roles are not consistent (criterion 1) because one would not expect a superintendent of schools (pre-disaster occupation) to be involved directly in a shelter operation (post-disaster involvement). In the interview, there is no evidence to conclude whether or not Lark had any previous disaster experience, but he claims to have no previous role experience.

Criterion 2 deals with role linkages. Dr. Lark's role of shelter manager was linked to several other roles. In order to determine continuity or discontinuity, we compare Lark's pre-disaster role as superintendent to the pre-disaster roles of those who were linked to him during the disaster period. Table 4 lists the post-disaster roles of the people with whom Lark was linked in his role as shelter manager, and it also lists the pre-disaster roles of these people. The last column indicates whether or not these links are continuous with the role of school superintendent.

Role links which exist within the organized response are intra-organizational (for example, the links within the shelter), and links which expand past the boundaries of the organized response are inter-organizational (for example, the links between the shelter workers and officials in the city government). Intra-role links occur when two
TABLE 4: Criterion 2 for Sample Case 1

<table>
<thead>
<tr>
<th>POST-DISASTER LINK</th>
<th>PRE-DISASTER LINK</th>
<th>CONTINUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. assistant shelter</td>
<td>Civil defense rep.</td>
<td>N</td>
</tr>
<tr>
<td>manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. assistant shelter</td>
<td>assistant in schools</td>
<td>Y</td>
</tr>
<tr>
<td>manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. radio operator</td>
<td>District attorney rep.</td>
<td>N</td>
</tr>
<tr>
<td>4. plumber</td>
<td>contract plumber</td>
<td>N</td>
</tr>
<tr>
<td>5. cook</td>
<td>head of cafeteria</td>
<td>Y</td>
</tr>
<tr>
<td>6. cook 1</td>
<td>school cook</td>
<td>N</td>
</tr>
<tr>
<td>7. cook 2</td>
<td>school cook</td>
<td>N</td>
</tr>
<tr>
<td>8. custodian 1</td>
<td>school custodian</td>
<td>N</td>
</tr>
<tr>
<td>9. custodian 2</td>
<td>school custodian</td>
<td>N</td>
</tr>
<tr>
<td>10. volunteer 1</td>
<td>teacher</td>
<td>Y</td>
</tr>
<tr>
<td>11. volunteer 2</td>
<td>teacher</td>
<td>Y</td>
</tr>
<tr>
<td>12. grounds superintendent</td>
<td>grounds superintendent</td>
<td>Y</td>
</tr>
<tr>
<td>13. head of maintenance</td>
<td>head of maintenance</td>
<td>Y</td>
</tr>
<tr>
<td>14. volunteer 3</td>
<td>high school principal</td>
<td>Y</td>
</tr>
<tr>
<td>15. mayor</td>
<td>mayor</td>
<td>Y</td>
</tr>
<tr>
<td>commissioner</td>
<td>commissioner</td>
<td></td>
</tr>
<tr>
<td>17. governor</td>
<td>governor</td>
<td>N</td>
</tr>
</tbody>
</table>

Identical roles are linked to one another (assistant manager to assistant manager). Inter-role links occur when two different roles are linked (cook to shelter manager). When Kreps' group evaluates role links, they document both of these aspects. In this case example, links 1-14 are intra-organizational/inter-role, and links 15-17 are inter-organizational/inter-role.

Although Lark knew several of these people personally, criterion 2 merely looks at role to role links. In the day to day routine of a school superintendent, the incumbent is likely to have contact with the grounds superintendent and principals, but he is not likely to encounter the governor or a plumber.

Criterion 3 looks at the way in which the incumbent plays his or her role. Dr. Lark, in his role as shelter manager, was an emergent
incumbent. That is, being a shelter manager was not a part of his role repertoire in the pre-disaster period. Dr. Lark was role-making in that his performance was improvised. Lark went to the shelter as a victim and was subsequently appointed by the mayor to manage the shelter. Due to the magnitude of the flood, this shelter housed approximately 3500 people. The school was built to accommodate about 2000. Because of the incredible number of refugees being sheltered, people had to sleep wherever they could, including the cafeteria. Thus, there was no designated area in which the shelter could feed the victims. Lark had to improvise on how he arranged the shelter. Victims were forced to eat where they slept, and they had little space in which to move around. This factor, combined with the unusually large number of people requiring food, makes Lark's role as shelter manager an improvised one. Thus, Lark's role can be characterized as redefinition.

In the knowledge category, Lark ranks as a 5: high knowledge with specific requirements. His knowledge is ranked as high because, as superintendent, Lark had access to high ranking people whom the average person could not easily contact. In dealing with the school system, Lark also had acquired knowledge of how to handle large numbers of people. The requirements for this role are specific: adequate role enactment requires knowledge of how to deal with the problems involved in handling large numbers of people. These problems include feeding, eliminating large amounts of waste, providing supplies, etc. While these knowledge requirements are not technical, they are not generally acquired through everyday living. Overall, Lark's role enactment shows considerable role-making (criterion 1 and 3), although he has a good
balance of continuous vs. discontinuous role links (criterion 2).

Sample Case Number 2: Role Incumbent in Established Organization

Unlike the previous example, this case is taken from an established organized response instead of an emergent one. Just as before, however, I will go through the case step by step, explaining the rationale for each criterion. The case I have chosen is an interesting one in that it is not what one might expect to find in an established organized response. In other words, the incumbent takes on a new role and uses improvisation in the enactment of this role. I will explain this in more detail in the description which follows.

This case is also taken from the flood in Fairbanks, Alaska. The local civil defense office was supposed to help the residents deal with the damage and the dangers of the flood. Due to the magnitude of the flood, the state CD office in Anchorage became involved in the disaster response, as well. The Assistant Director of the Alaska Disaster Office (state CD) went to Fairbanks to help the local CD office in the organized response. Al Drake (a pseudonym) was one of the representatives from Anchorage sent to help in Fairbanks. When Drake arrived in Fairbanks, however, he discovered that the local CD director was not performing his duties. Mr. Drake subsequently took over the role of local CD director.

With respect to criterion 1, then, Drake's pre-disaster occupation was the Assistant Director of the Alaska Disaster Office, and his post-disaster role was the local civil defense director in Fairbanks. This role is consistent with Drake's pre-disaster occupation because, as an employee of the state level CD, Drake would be expected to be involved
in some fashion in a large scale disaster within the state.

Throughout the duration of the organized response, Drake was linked with numerous people. Once again, with respect to criterion 2, continuity of linkages is measured by comparing the pre-disaster occupations of Drake's linkages to Drake's own occupation to see if these roles are normally linked in day to day affairs. Drake's post-disaster links are displayed in Table 5. Most of Drake's links are intra-organizational and inter-role. The only inter-organizational links listed are with the two representatives from the OEP and the

### TABLE 5: Criterion 2 for Sample Case 2

<table>
<thead>
<tr>
<th>Post-Disaster Link</th>
<th>Pre-Disaster Occupation</th>
<th>Continuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. state CD employee</td>
<td>state CD employee</td>
<td>Y</td>
</tr>
<tr>
<td>2. area CD director</td>
<td>area CD director</td>
<td>Y</td>
</tr>
<tr>
<td>3. state CD employee</td>
<td>state CD employee</td>
<td>Y</td>
</tr>
<tr>
<td>4. aid to the area CD director</td>
<td>aid to the area CD director</td>
<td>N</td>
</tr>
<tr>
<td>5. representative from the Office of Emergency Planning 1</td>
<td>representative from the Office of Emergency Planning</td>
<td>N</td>
</tr>
<tr>
<td>6. volunteer owner of a trucking co.</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>7. city CD director</td>
<td>city CD director</td>
<td>Y</td>
</tr>
<tr>
<td>8. representative from the Office of Emergency Planning 2</td>
<td>representative from the Office of Emergency Planning</td>
<td>N</td>
</tr>
<tr>
<td>9. governor's assistant</td>
<td>governor's assistant</td>
<td>N</td>
</tr>
<tr>
<td>10. state CD employee</td>
<td>state CD employee</td>
<td>Y</td>
</tr>
<tr>
<td>11. volunteer uncertain</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>12. messenger 1 uncertain</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>13. messenger 2 uncertain</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>14. HAM radio operator 1</td>
<td>uncertain</td>
<td>U</td>
</tr>
<tr>
<td>15. HAM radio operator 2</td>
<td>uncertain</td>
<td>U</td>
</tr>
<tr>
<td>16. volunteer uncertain</td>
<td>U</td>
<td></td>
</tr>
</tbody>
</table>

governor's assistant. Drake's case displays an array of continuity and discontinuity for criterion 2. Approximately one-third of his links are continuous, one-third are discontinuous and one-third are uncertain,
Hence, for criterion 2, Drake's case displays a mixture of role-playing and role-making, illustrating the spectrum of possibilities for this criterion.

Thus far, Drake's case displays a mixture of role-playing and role-making. While criterion 1 evidenced role-playing, criterion 2 showed a mix of the two. Criterion 3 enhances the complexity of role-enactment occurring in this case-example. With respect to criterion 3, Drake is a new incumbent. He has come to Fairbanks and adopted the role of local CD director. His pre-disaster role was on the state level. Thus, in taking over the duties of the local CD director and shedding his normal duties, Drake acts as an emergent incumbent.

During the course of Drake's involvement as local CD director, the headquarters where the CD was stationed began to flood. The encroaching water threatened the equipment and the safety of the CD employees. Drake ordered that the CD office evacuate to another building which was on higher ground. Due to the fact that he and his staff had to change their facilities and move all of their equipment, Drake is improvising in his role-enactment. Because Drake is role-making and he is a new incumbent, Drake's role performance can be categorized as role redefinition.

Overall Drake exhibits an almost perfect mix between role-making and role-playing. This is interesting in that he is working in an established and not an emergent organized response. This case, as well as others, serves as evidence for Ralph Turner's argument that improvisation occurs routinely in established organizations. While the results in Drake's case are not generalizable to all of my findings, I
cite this example because it is important to remember the wide range of possibilities involved in role enactment. Once again, this exemplifies the action/order dialectic which is at the root of this research project.
Sampling Plan

A file of 423 organized responses was generated from 1062 interviews in Kreps' (1985;1989) original study. Some 52 of these cases were emergent organized responses and the remaining 371 were established organized responses. Mooney's role analysis of the 52 emergent organizations were based on 107 interviews with people who were informants on one or more of these 52 cases. From these 107 informant interviews, Russell was then able to complete role analyses on 57 direct participants in 29 of the 52 emergent organizations. Table 6 arrays these respondents in terms of the form types (DTRA to ARTD) of the emergent organizations in which they participated.

My objective was to generate data on 200 respondents from a purposive sample of established organizations. I wanted that sample to be reasonably comparable to Russell's respondent data in terms of (1) form types of organized responses in which they participated and (2) types of events in which these organized responses took place (earthquakes, tornados, floods, hurricanes). This was accomplished in the following manner: of the 371 established organized responses in the original data file, Kreps identified 56 cases for which archival data was of the highest quality. No attention was given at this point to either form or event types for these cases. In order to increase the pool of cases from which comparability with Russell's data could be achieved, I then randomly sampled 34 additional cases from the remaining 315 established organized responses in Kreps' data file, using form type and event type as sampling criteria. This strategy yielded 420 interviews from 90 established organizations with which to begin my own
<table>
<thead>
<tr>
<th>Organizational Form</th>
<th>Logical Metric</th>
<th>Established Freq.</th>
<th>Established Percentage</th>
<th>Emergent Freq.</th>
<th>Emergent Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTRA</td>
<td>+3</td>
<td>45</td>
<td>22.5%</td>
<td>6</td>
<td>10.5%</td>
</tr>
<tr>
<td>DTAR</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>DRTA</td>
<td>+2</td>
<td>23</td>
<td>11.5%</td>
<td>7</td>
<td>12.3%</td>
</tr>
<tr>
<td>TDRA</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>(subtotals)</td>
<td></td>
<td>(11.5%)</td>
<td>(12.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRAT</td>
<td>31</td>
<td>15.5%</td>
<td>3</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>DATR</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>TRDA</td>
<td>+1</td>
<td>1</td>
<td>0.5%</td>
<td>2</td>
<td>3.5%</td>
</tr>
<tr>
<td>TDAR</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>RDTA</td>
<td>27</td>
<td>13.5%</td>
<td>16</td>
<td>28.0%</td>
<td></td>
</tr>
<tr>
<td>(subtotals)</td>
<td></td>
<td>(29.5%)</td>
<td>(36.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DART</td>
<td>1</td>
<td>0.5%</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>TRAD</td>
<td>9</td>
<td>4.5%</td>
<td>4</td>
<td>7.0%</td>
<td></td>
</tr>
<tr>
<td>TADR</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>RDAT</td>
<td>11</td>
<td>5.5%</td>
<td>4</td>
<td>7.0%</td>
<td></td>
</tr>
<tr>
<td>RTDA</td>
<td>3</td>
<td>1.5%</td>
<td>1</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>ADTR</td>
<td>5</td>
<td>2.50%</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>(subtotals)</td>
<td></td>
<td>(14.5%)</td>
<td>(15.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TARD</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>RADT</td>
<td>10</td>
<td>5.0%</td>
<td>1</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>RTAD</td>
<td>-1</td>
<td>2</td>
<td>1.0%</td>
<td>1</td>
<td>1.8%</td>
</tr>
<tr>
<td>ADRT</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>ATRD</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>(subtotals)</td>
<td></td>
<td>(6.0%)</td>
<td>(3.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RATD</td>
<td>9</td>
<td>4.5%</td>
<td>7</td>
<td>12.3%</td>
<td></td>
</tr>
<tr>
<td>ATRD</td>
<td>-2</td>
<td>7</td>
<td>3.5%</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>ARDT</td>
<td>11</td>
<td>5.5%</td>
<td>1</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>(subtotals)</td>
<td></td>
<td>(13.5%)</td>
<td>(14.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARTD</td>
<td>-3</td>
<td>5</td>
<td>2.5%</td>
<td>4</td>
<td>7.0%</td>
</tr>
<tr>
<td>(Totals)</td>
<td>(200)</td>
<td>(100.0%)</td>
<td>(57)</td>
<td>(100.0%)</td>
<td></td>
</tr>
</tbody>
</table>
role analysis.

Of these 420 interviews, some 172 respondents from 62 established organized responses proved useful for my research. Still short of my goal of 200 cases, and wanting to increase comparability with Russell's data, an additional 15 established organized responses (from the remaining 234 cases) were randomly selected to supplement the 90 cases noted above. In sum, an analysis of 444 interviews from 105 established organized responses produced adequate data on 200 participants from 77 established organized responses. Table 6 arrays the resulting distributions of respondent data for Russell's and my samples, respectively. As is evident in Table 6, the samples are similar but not identical. Discrepancies between Russell's and my sample are due to insufficient data on established organizations.
FINDINGS

In what follows, I will discuss the findings from my study on role enactment in established organizations, and I will compare them with Russell's findings on role enactment in emergent organizations (*). The comparisons between the findings from both emergent and established organized responses should help illuminate the similarities and differences between the two with respect to the action/order dialectic. The comparisons also provide a way to evaluate the data in the manner proposed by Ralph Turner.

Criterion 1: Inconsistency Vs. Consistency of Status/Role Nexus

In analyzing criterion 1, I designed two tables using chi square to compare the results from the established and emergent organizations. In Table 7A, I consider only the primary occupation of the respondent. In Table 7B, I also include non-occupational, but disaster-relevant roles (e.g., Red Cross volunteers, National Guardsmen, Civil Air Patrol, etc.) As is evident in both tables, established organizations show substantially greater consistency than emergent organizations (84.8% vs. 55.3% in Table 7A and 94.0% vs. 68.4% in Table 7B). These results are

* In the interim between Russell's study and my own, Bosworth and Kreps reanalyzed each of his 57 emergent cases. Reliability was almost identical with Russell's with respect to criterion 1 and criterion 3. With respect to criterion 2, while the total number of links for criterion 2 were increased by the reanalysis, the degree of continuity vs. discontinuity was not significantly different.
TABLE 7A: Status/Role Nexus By Type of Organized Disaster Response: Occupation Only

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistent</td>
<td>15.2%</td>
<td>40.7%</td>
</tr>
<tr>
<td>Consistent</td>
<td>84.8%</td>
<td>55.3%</td>
</tr>
</tbody>
</table>

|                     |       |               |
| totals              | 100%  | 100%          |
| (184)               | (54)  |

missing cases = 19  
chi square = 16.388  
P < 0.0001  
phi = .262

---

TABLE 7B: Inconsistency vs. Consistency of Pre- and Post-Disaster Status/Role Nexus by Type of Organized Disaster Response: Other Relevant Roles Included

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistent</td>
<td>6.0%</td>
<td>31.6%</td>
</tr>
<tr>
<td>Consistent</td>
<td>94.0%</td>
<td>68.4%</td>
</tr>
</tbody>
</table>

|                     |       |               |
| totals              | 100%  | 100%          |
| (200)               | (57)  |

chi square = 28.149  
P < 0.0000  
phi = .331
not unexpected. That is, one would expect that in established organizations, most of which would necessarily be involved during an emergency (such as police, hospitals, etc.), social order should prevail with respect to criterion 1. What is interesting, however, is the extent of consistency even with emergent organizations. That is, when organizations are in the process of becoming (when they are emergent), it is interesting how much the "established" social order is involved. The relevance of social order in social action is affirmed.

The prominence of consistency in the emergent and established cases is partly attributable to the types of disasters which have been used in this research. Most of these natural disasters had a relatively low impact, and local communities were well equipped to respond. Consequently, the high degree of consistency is also a by-product of the type of disasters studied in this research.

As is evident from Table 7B, accounting for other relevant roles of respondents greatly increases consistency for both the emergent and the established cases. Yet, there is still a 25.58% difference between the established and emergent cases which indicates that consistency is much more likely in established organizations. Nevertheless, Russell's addition of the other relevant role to the methodology has been beneficial for documenting the importance of pre-disaster social structure for post-disaster role performance.

**Criterion 2: Continuity Vs. Discontinuity of Role Linkages**

As mentioned above, criterion 2 examines whether or not the links of the respondent are continuous from the pre- to post-disaster period. Table 8A summarizes comparative data on criterion 2. This table only
### TABLE 8A: Discontinuity vs. Continuity of Role Linkages by Type of Organized Disaster Response: Occupation Only

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>69.4%</td>
<td>66.8%</td>
</tr>
<tr>
<td>Discontinuous</td>
<td>30.6%</td>
<td>33.2%</td>
</tr>
<tr>
<td>totals</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(1316)</td>
<td>(738)</td>
<td></td>
</tr>
<tr>
<td>missing (uncertain)</td>
<td>(379)</td>
<td>(104)</td>
</tr>
<tr>
<td>chi square</td>
<td>1.457</td>
<td></td>
</tr>
<tr>
<td>P &lt; .30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>phi = .027</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 8B: Discontinuity vs. Continuity of Role Linkages by Type of Organized Disaster Response: Other Relevant Role Included

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>77.7%</td>
<td>74.9%</td>
</tr>
<tr>
<td>Discontinuous</td>
<td>22.3%</td>
<td>25.1%</td>
</tr>
<tr>
<td>totals</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(1559)</td>
<td>(776)</td>
<td></td>
</tr>
<tr>
<td>missing (uncertain)</td>
<td>(136)</td>
<td>(66)</td>
</tr>
<tr>
<td>chi square</td>
<td>2.404</td>
<td></td>
</tr>
<tr>
<td>P &lt; .30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>phi = .032</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
deals with the primary occupations of the respondents and their links. Other relevant roles are not considered in Table 8A. Overall, I find that there is no significant difference between the continuity of links in established and emergent organizations. Both types display roughly 70% continuity from the pre- to post-disaster period. Yet, some 30% of all links are discontinuous. So, although there is a high degree of role-playing occurring in both established and emergent cases, role-making is occurring in both as well.

Table 8B shows that continuity of linkages increases when we consider other relevant roles of the respondents and the people with whom they are linked. Although people might not have been linked by their occupations in the pre-disaster period, some people may have been linked by their other relevant roles (e.g., friend, volunteer, etc.) Once again, there is no significant difference in continuity of links between the established and emergent cases. Both reveal an increase in continuity when other relevant roles are added to the equation.

Neither Table 8A nor Table 8B shows statistically significant differences between established and emergent respondents. However, when looking only at linkages within the organized response, I find that respondents from established organizations are 6.1% more likely to have continuous occupational links than respondents from emergent organizations. When considering other relevant links within an organized response, respondents from established organizations are 5.7% more likely to have continuous links than respondents from emergent organizations. In sum, there is an appreciable difference in continuity of links between established and emergent organized responses only when
considering intra-organizational links alone. Perhaps this is due to the fact that established organizations have a stable internal network, whereas emergent organizations, though stable for the most part, must develop many of their links during the emergency period.

I ran a t-test on the total number of links for both respondents from established and emergent organizations to find out if there was a statistically significant difference between the average number of links for each. I find that the average number of links for respondents from established organizations is only 8.5, whereas the average for respondents from emergent organizations is 14.8 links. The difference is statistically significant (two-tailed test) at the .001 level. This suggests that the respondents from established organizations are more self-sufficient than those working in emergent ones. Established organizations exist before the emergency period and often benefit from past experience and contacts. Because emergent organizations do not exist before the emergency period, participants in them may have to rely on a greater number of people within the organized response, as well as a greater number of outside people in order for them to operate efficiently. I researched this possibility through another t-test to see if there is a statistically significant difference between the average number of external and internal links for both respondents from established and emergent organizations. Once again, I find that respondents from emergent organizations have a greater number of links than those from established organizations, regardless of whether or not these links are intra- or inter-organizational (an average of 9 vs. 5 intra-organizational links, and 4 vs. 2 inter-organizational links).
Both differences are statistically significant (at the .01 level). This suggests that participant role for emergent organizations tend to be more boundary spanning, and, yet, also require a greater number of internal links in order to fulfill their objectives. Perhaps emergent organizations require broader social networks than the established ones: the emergent organizations would probably need to contact more people in order to operate, regardless of whether or not these people come from within the organization or from outside organizations.

There are significant differences between respondents from established and emergent organizations when looking at the types of relevant links which are possible, as Table 8C illustrates. Relevancy is based on pre-disaster links that are not solely occupational. I will first discuss each of the three types of relevant links, and then I will explain the significance of the findings.

When considering the ways in which other relevant roles may be linked to one another, the first possibility is for the respondent's primary occupation to be linked to another person's other relevant role. An example would be a police chief who is linked to an auxiliary policeman. The second possibility is for the respondent's other relevant role to be linked to another person's other relevant roles. An example here would be a Civil Air Patrolman linked to a Civil Air Patrol Captain. The last possibility is for the respondent's other relevant role to be linked to another person's occupations. An example would be a Red Cross volunteer who is linked to a Red Cross professional.

The findings displayed in Table 8C are interesting with respect to the two different types of organized responses. In analyzing these
### TABLE 8C: Types of Relevant Linkages by Case Type

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent's occupation to</td>
<td>53.5%</td>
<td>32.9%</td>
</tr>
<tr>
<td>another person's other relevant role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent's other relevant role</td>
<td>27.8%</td>
<td>45.5%</td>
</tr>
<tr>
<td>role to another person's other relevant role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent's other relevant role</td>
<td>18.7%</td>
<td>21.6%</td>
</tr>
<tr>
<td>role to another person's occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>totals</td>
<td>100.0% (299)</td>
<td>100.0% (88)</td>
</tr>
</tbody>
</table>

chi square = 12.839  
P < .01  
phi = .182
findings, it is important to note that continuity increases only about 9% when other relevant links are considered. A majority of the links involved in criterion 2, then, are occupation to occupation, and few links involve other relevant roles at all. Thus, the findings in Table 8C should be kept in this perspective.

Table 8C indicates a difference between respondents from established and emergent organized responses with respect to the three types of other relevant linkage. In established organizations, when considering other relevant linkages, the other relevant roles are usually enacted by the people with whom the respondent is linked-- while the respondents are linked because of their primary occupations (53.5% of the time). Conversely, in emergent organizations, both the respondents and their links are usually joined by their other relevant roles (45.5% of the time).

In summary of criterion 2, there is no significant difference between the continuity and discontinuity of role linkages when comparing respondents from established and emergent organizations. Both exhibit a high degree of continuity, although discontinuity exists in both case types. The only significant difference in continuity between established and emergent cases is found when examining intra-organizational links only. Even then, respondents from established organizations are only slightly more apt to have continuous links than respondents from emergent ones. T-tests indicate that respondents from emergent organizations tend to have more links than respondents from established ones, and this suggests that emergent organized responses are less self-sufficient.
Criterion 3: Post-Disaster Role Performance

As I mentioned above, incumbents may enact their roles in a variety of ways. In order to convey the nuances of each type of role performance, I will cite an example for each of the four possibilities under criterion 3 before I discuss the findings for this criterion. Recall that the sample case involving Drake was an example of role redefinition. Drake, whose occupation was the assistant director of the Alaska Disaster Office, was acting as a local CD director in Fairbanks: he was a new incumbent. Drake was also improvising in that he had to evacuate his headquarters due to rising water levels. Hence, Drake is an example of role redefinition. Because I have already discussed this case at length, I will discuss in this section the remaining three types of role enactment: formal role enactment, working role enactment, and role prototyping.

An Example of Formal Role Enactment

The first case example comes from a series of floods in Southwest Colorado. These floods were unexpected and they washed through a series of towns, carrying debris and dead animals along with them. The respondent is a Denver Police official who was involved in protective action. During the post-disaster period, this official supervised his men as usual, and his tasks were not out of the ordinary. He is classified as an established incumbent because his post-disaster role was a part of his repertoire. The official did not innovate while enacting his role, so his performance is classified as formal role enactment. This case is exemplary of this type of role enactment; that is, the official is an incumbent whose occupation is disaster relevant,
and he plays his role as prescribed.

An Example of Working Role Enactment

The next case comes from a tornado in Minneapolis, Minnesota. This tornado followed directly after extensive flooding in the same area, so the people in this area received a double blow. The respondent was employed as a public information officer for a radio station. The employees at his radio station were involved in dissemination of predictions and warnings. During the post-disaster period, this incumbent manned a desk and a telephone in order to help the disc jockeys screen phone calls. He is, thus, an established incumbent in that he is normally involved in public information, as he is during the disaster period. Yet, procedures did not operate as they normally would have. The employees set up a "conveyor belt" method in screening calls. When people called in to the station, one person would answer the call and hear the caller's story. Then, he would transfer the call to another person who would ask the caller questions and then decide if the call should be broadcast over the radio. Then, he would transfer the call to the disc-jockey who would broadcast the call. Normally, they do not make a point of broadcasting calls, but they felt the actual victims could describe conditions and warnings better than the people at the radio station could. Also, during the pre-disaster period, such an elaborate system of screening would not be used. Therefore, this respondent was improvising, and this case is an example of working role enactment.

An Example of Role Prototyping

The last example, like the first, comes from the Topeka tornado.
This respondent was a patrolman in the traffic division for the Topeka Police Department. During the post-disaster period, he acted as a supervisor of traffic patrolmen. This respondent is an emergent incumbent because of what his post disaster role entailed. During the disaster response period, this patrolman acted as a leader over his fellow patrolmen; he gave orders and helped organize other patrolmen. This is not part of his pre-disaster role repertoire because patrolmen do not have authority over other policemen. However, he enacted his role by rote, using no improvisation. He did not need to develop any innovative means for supervising the other patrolmen. Thus, this case is an example of role prototyping.

The results for criterion 3 have been as interesting to me as those for the previous criteria. Table 9A shows the 4 possibilities of role enactment and compares them by the type of case. For respondents from established organizations, formal role enactment occurs most often (51.5% of the time). Conversely, role redefinition occurs most often in emergent cases (47.4% of the time). These results support the notion of an action/order dialectic. Cases which evolve from established organized responses tend to be order dominated whereas emergent organized responses tend to come from the polar opposite, the action end. Yet, formal role enactment is not the only type of role enactment found in established organized responses; and, likewise, role redefinition is not the only type of role enactment found in emergent organized responses. In both established and emergent responses, respondents are involved in working role enactment approximately 25% of the time, and the respondents are role prototyping approximately 10% of
TABLE 9A: Post-Disaster Role Performance by Type of Organized Response

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>51.5%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Prototyping</td>
<td>9.5%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Working</td>
<td>25.5%</td>
<td>24.6%</td>
</tr>
<tr>
<td>Redefinition</td>
<td>13.5%</td>
<td>47.4%</td>
</tr>
</tbody>
</table>

totals 100.0% 100.0%
(200) (57)

chi square = 35.912
P < 0.0000
Cramer's V = .374
TABLE 9B: Role Playing and Role Making by Type of Organized Response

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Playing</td>
<td>61.0%</td>
<td>28.1%</td>
</tr>
<tr>
<td>Role Making</td>
<td>39.0%</td>
<td>71.9%</td>
</tr>
<tr>
<td>totals</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>(200)</td>
<td>(57)</td>
</tr>
<tr>
<td>chi square = 19.346</td>
<td>P &lt; 0.0000</td>
<td>phi = .274</td>
</tr>
</tbody>
</table>

TABLE 9C: Established and Emergent Incumbents by Case Type of Organized Response

<table>
<thead>
<tr>
<th></th>
<th>Established Cases</th>
<th>Emergent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established Incumbent</td>
<td>77.0%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Emergent Incumbent</td>
<td>33.0%</td>
<td>57.9%</td>
</tr>
<tr>
<td>totals</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>(200)</td>
<td>(57)</td>
</tr>
<tr>
<td>chi square = 25.369</td>
<td>P &lt; 0.0000</td>
<td>phi = .314</td>
</tr>
</tbody>
</table>
the time. Therefore, both established and emergent cases reflect a healthy mixture of action and order, although they each tend to lean one way or another. This exemplifies the dialectic beautifully. Tables 9B and 9C elaborate these findings.

In Table 9B, I have lumped cases in which the respondent role-plays (that is, during formal role enactment or role prototyping) and those in which the respondent role-makes (working role enactment and role redefinition). As implied by Table 9A, role playing dominates in the established cases (61.0%) and role making dominates in emergent cases (71.9%). In this table, role-playing is 32.9% more likely in established organizations than emergent ones, and vice versa for role making. Yet, role-making occurs 39.0% of the time in established organized responses, and role-playing occurs 28.1% of the time in emergent organized responses as well. Thus, action and order are not mutually exclusive. They are both present in both types of organized response, although established cases lean toward the order end and emergent cases lean toward the action end of the continuum.

In Table 9C, I lumped cases in which the incumbent was established (formal role enactment and working role enactment) and I lumped cases in which the respondent was emergent (role prototyping and role redefinition). As expected, I find that established cases are more likely to have established incumbents (77.0% of the time), and emergent cases tend to have emergent respondents (57.9%). There is a 34.9% difference between established and emergent, and this difference is statistically significant. Yet, 33% of established cases have emergent incumbents and 42% of emergent cases have established incumbents. These
figures should not be overlooked. As in Table 9B, these statistics show that, although either action or order may prevail in a situation, both are always present.

In summary, throughout criterion 3 role-playing, or social order, is more prominent for respondents from established organizations. Conversely, role-making, or social action, is more prominent for respondents from emergent organizations. Yet, there is evidence of both role playing and role making in both established and emergent cases, as predicted by Ralph Turner. While it is obvious social action and social order can be attributed to emergent and established cases respectively, it is not possible to conclude that all established cases are order driven and all emergent cases are action driven. They are not mutually exclusive. Once again, this exemplifies the action/order dialectic.

Discussion of the Criteria

As I mentioned in my discussion of each criteria, I cannot conclude that social order only equates with established organizations and that social action only equates with emergent organizations. This would be empirically incorrect (see criterion 2), and it would not be consistent with the action/order dialectic. It is true, however, that my findings reveal a tendency for role playing to occur in established organized responses more often than in emergent organized responses. Yet, a second glance at the tables will show that there is still a great deal of role playing going on in emergent organized responses as well. A good example of this occurrence can be found in criterion 2 which shows a tendency for links to be continuous in emergent as well as established cases. Statistical evidence of this phenomenon can be found in the low
phi scores under each table. Each phi is under .50. This seems to suggest that there is such a mixture of role-playing and role-making that the two cannot be easily separated. Logically, it seems that a perfect mixture of role-playing and role-making would reveal insignificant chi-squares and phi scores of zero, or what Dubin (1978) terms a null law of interaction. Another important aspect of the research which is not captured by these tables is that a respondent can be categorized as role-making for one criterion and categorized as role-playing for the other two criteria. This possibility only serves to reinforce Turner's idea that there can be flexibility in role enactment even in cases of role playing. Overall, I am confident that these findings show that both social action and social order are essential constructs. That is to say, there is always a strain to maintain social order while at the same time a strain to change it; hence, the action/order dialectic. To use Giddens' terms, duality rather than dualism flourishes.
PROSPECTS FOR FUTURE RESEARCH

The interviews and cases used in this research were conducted 20 years ago, and the interviewers were concerned with organization and not role. Often, the interviewer never asked the respondents to explain their occupations or post-disaster roles. Likewise, the respondents often did not discuss the occupations or roles of the people with whom they were working. Certainly, therefore, this research program would be facilitated if a new research instrument were developed and implemented in the field. Some potential questions pertaining to the three criteria are the following:

Criterion 1) Before the disaster, what was your primary occupation? Did you enact another role (other than your occupation) which is pertinent to this disaster response? During the disaster, what types of duties did you perform? Keeping these duties in mind, how would you label your primary post-disaster role? Given your occupation, would you be expected to be involved in this organized response to the disaster? Given your other relevant role (if any), would you be expected to be involved?

Criterion 2) During the disaster period, with whom did you interact? What are the pre-disaster occupations of these people? With which of these occupations would you normally be linked (in non-emergency periods)? Do any of these people have relevant roles other than their occupations which would explain their involvement in the response? Are you normally linked occupationally or otherwise to any of these roles?

Criterion 3) Is the role you performed in the post-disaster period part of your normal (pre-emergency) role repertoire?
Do you feel you employed innovation while performing your post-disaster duties? If so, how was this accomplished?

These are just a few of the many questions an interviewer should ask in future research. Like in any research project, the interviewer should spend time evaluating these questions and the proposed format to ensure reliability, validity, and clean data. I do feel, however, that once a tested questionnaire is developed, this research can be conducted easily, and the resulting data will be rich and ready for analysis.

Once a new questionnaire is completed and implemented, the possibilities for research with this data set will be endless. Aside from the questions concerning the criteria, the questionnaire might include demographic questions which can open all sorts of doors to researchers interested in explaining role performance. The instrument will include various questions about the respondents' experience with natural disasters. Thus, I feel it is important to devise the questionnaire and begin its implementation as soon as possible. Once this methodology can be perfected, the field of sociology will begin to reap the scientific benefits of this research on the dialectic of social action and social order.
CONCLUSION

This research program was created originally by Gary Kreps and then developed by him and his associates. It will continue to be valuable to the field of disaster research. This research will also be valuable to sociology generally because it employs the concepts of organization and role to highlight the action/order dialectic. Duality seems to be supported rather than dualism; Giddens' idea of structuration is supported, as well. For many years there has been a cleavage between positivists and interpretivists. Perhaps this research will provide the materials with which a bridge can be built. Sociology would be a much more effective field if its members could agree on a paradigm, or at least come to a compromise. I conclude from my participation in it that Kreps' research program is a powerful tool that can be used for the betterment of sociology.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>COLUMNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Number: ID</td>
<td>4 (1-4)</td>
</tr>
<tr>
<td>Interviews:</td>
<td></td>
</tr>
<tr>
<td>Organized disaster response number: RESPN</td>
<td>3 (5-7)</td>
</tr>
<tr>
<td>Event number: EVENT</td>
<td>2 (8-9)</td>
</tr>
<tr>
<td>1 = Fairbanks flood</td>
<td>12 = Jonesboro tornado</td>
</tr>
<tr>
<td>2 = Alaska earthquake</td>
<td>13 = Oaklawn tornado</td>
</tr>
<tr>
<td>3 = Topeka tornado</td>
<td>14 = Jackson tornado</td>
</tr>
<tr>
<td>4 = Hurricane Betsy</td>
<td>15 = Hurricane Camille</td>
</tr>
<tr>
<td>5 = Belmond tornado</td>
<td>16 = Xenia tornado</td>
</tr>
<tr>
<td>6 = Fargo floods</td>
<td>17 = Lake Pomona tornado</td>
</tr>
<tr>
<td>7 = Mankato floods</td>
<td>18 = Wichita Falls tornado</td>
</tr>
<tr>
<td>8 = Minot floods</td>
<td>19 = Cheyenne tornado</td>
</tr>
<tr>
<td>9 = Minneapolis tornado</td>
<td>20 = Texas floods</td>
</tr>
<tr>
<td>10 = St Paul floods</td>
<td>21 = Hurricane Frederic</td>
</tr>
<tr>
<td>11 = Colorado floods</td>
<td>22 = Mount St Helens eruption</td>
</tr>
<tr>
<td></td>
<td>23 = Wilkes Barre flood</td>
</tr>
<tr>
<td>Event type: EVENTTP</td>
<td>1 (10)</td>
</tr>
<tr>
<td>1 = earthquake</td>
<td></td>
</tr>
<tr>
<td>2 = tornado</td>
<td></td>
</tr>
<tr>
<td>3 = flood</td>
<td></td>
</tr>
<tr>
<td>4 = hurricane</td>
<td></td>
</tr>
<tr>
<td>5 = volcanic eruption</td>
<td></td>
</tr>
<tr>
<td>Post-disaster domain type: DOMTYPE</td>
<td>2 (11-12)</td>
</tr>
<tr>
<td>1 = hazard-vulnerability analysis</td>
<td></td>
</tr>
<tr>
<td>2 = maintenance of standby human and material resources</td>
<td></td>
</tr>
<tr>
<td>3 = disaster preparedness, planning, and training</td>
<td></td>
</tr>
<tr>
<td>4 = public education</td>
<td></td>
</tr>
<tr>
<td>5 = hazard mitigation-structural</td>
<td></td>
</tr>
<tr>
<td>6 = hazard mitigation-nonstructural</td>
<td></td>
</tr>
<tr>
<td>7 = insurance</td>
<td></td>
</tr>
<tr>
<td>8 = issuance of predictions and warnings</td>
<td></td>
</tr>
<tr>
<td>9 = dissemination of predictions and warnings</td>
<td></td>
</tr>
<tr>
<td>10 = evacuation</td>
<td></td>
</tr>
<tr>
<td>11 = mobilization of emergency personnel</td>
<td></td>
</tr>
<tr>
<td>12 = protective action</td>
<td></td>
</tr>
<tr>
<td>13 = search and rescue</td>
<td></td>
</tr>
<tr>
<td>14 = medical care</td>
<td></td>
</tr>
<tr>
<td>15 = provision of victim basic needs</td>
<td></td>
</tr>
<tr>
<td>(food, clothing, shelter)</td>
<td></td>
</tr>
<tr>
<td>16 = damage and needs assessments and inventory</td>
<td></td>
</tr>
<tr>
<td>of available resources</td>
<td></td>
</tr>
<tr>
<td>17 = damage control</td>
<td></td>
</tr>
<tr>
<td>18 = restoration of essential public services</td>
<td></td>
</tr>
<tr>
<td>19 = public information</td>
<td></td>
</tr>
</tbody>
</table>
20 = traffic control
21 = law enforcement
22 = local governance
23 = coordination and control (organization of emergency personnel and resources)
24 = reconstruction of physical structures
25 = re-establishment of production, distribution, and consumption activities (economic functioning)
26 = resumption of other social institutions
27 = determination of responsibility and legal liability for the event
28 = reconstruction planning
29 = care of fatalities
30 = communications
31 = other
99 = uncertain

Elemental form of organization: FORM 2 (13-14) 
1 = DTRA 9 = TADR 17 = RTDA
2 = DTAR 10 = TARD 18 = RTAD
3 = DRAT 11 = TDRA 19 = ADTR
4 = DRTA 12 = TDAR 20 = ADRT
5 = DATR 13 = RADT 21 = ATDR
6 = DART 14 = RATD 22 = ATRD
7 = TRAD 15 = RDTA 23 = ARDT
8 = TRDA 16 = RDAT 24 = ARTD

Domain problem: DOMPR 1 (15) 
0 = absent
1 = present
9 = uncertain

Task problem: TASKPR 1 (16) 
0 = absent
1 = present
9 = uncertain

Resource problem: RESPR 1 (17) 
0 = absent
1 = present
9 = uncertain

Activities problem: ACTPR 1 (18) 
0 = absent
1 = present
9 = uncertain

Type of enacting unit: UNITYPE 1 (19) 
1 = emergency relevant public bureaucracy
2 = other public bureaucracy
3 = emergency relevant voluntary agency
4 = special interest group
5 = private firm
6 = emergent group of individuals
7 = emergent group of other groups and organizations
8 = military unit
9 = other

Response task structure: RTSTR 1 (20) ____
1 = simple (1-3)
2 = complex (more than 3)
9 = uncertain

Social network relevance of responding unit at initiation: ILINKS 1 (21) ____
1 = self contained
2 = boundary spanning local
3 = boundary spanning state
4 = boundary spanning national
5 = boundary spanning-mixed local and state
6 = boundary spanning-mixed local and national
7 = boundary spanning-mixed state and national
8 = boundary spanning-mixed local, state, and national
9 = uncertain

Time initiation network established: ITLINKS 1 (22) ____
1 = established prior to disaster
2 = emergent
3 = mixed established and emergent
4 = not applicable
9 = uncertain

Number of network links at initiation: INLINKS 1 (23) ____
0 = none
1 - 3
2 = more than 3
9 = uncertain

Social network relevance of responding unit at maintenance: MLINKS 1 (24) ____
1 = self contained
2 = boundary spanning local
3 = boundary spanning state
4 = boundary spanning national
5 = boundary spanning-mixed local and state
6 = boundary spanning-mixed local and national
7 = boundary spanning-mixed state and national
8 = boundary spanning-mixed local, state, and national
9 = uncertain

Time network at maintenance established: MTLINKS 1 (25) ____
1 = established prior to disaster
2 = emergent
3 = mixed established and emergent
4 = not applicable
9 = uncertain
Number of network links at maintenance: MNLINKS
0 = none
1 = 1 - 3
2 = more than 3
9 = uncertain

Evidence of pre-planning prior to response: PLANN
1 = no pre-planning
2 = pre-planning evidenced
9 = uncertain

Size of focal organization: SIZ
1 = 9 or fewer
2 = 10 - 20
3 = 21 - 50
4 = over 50
9 = uncertain

Community disaster experience in past 10 years: C-EXP
1 = no disasters, few if any threats
2 = no disasters, several threats
3 = one or more disasters
4 = one or more disasters and several threats
9 = uncertain

Community (rural-urban): COMM
1 = rural area
2 = urban 10,000 or less
3 = urban 10,001 - 25,000
4 = urban 25,001 - 50,000
5 = urban metropolitan, 50,000+

Personal Biography

Age: AGE
99 = uncertain

Gender: SEX
1 = male
2 = female

Marital status: MARRIED
0 = single
1 = married
2 = separated
3 = divorced
4 = widowed
9 = uncertain

Parental status: PARENT
0 = not a parent
1 = parent
9 = uncertain
<table>
<thead>
<tr>
<th>Variable</th>
<th>Code</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence: WHERELIV</td>
<td>0</td>
<td>local</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>state</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>national</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>international</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>uncertain</td>
</tr>
<tr>
<td>Length of time at residence-in years: TIMELIV</td>
<td>99</td>
<td>uncertain</td>
</tr>
<tr>
<td>Victim in current disaster: VICTIM</td>
<td>0</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>no, but relative of victim(s)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>no, but friend of victim(s)</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>uncertain</td>
</tr>
<tr>
<td>Location of post-disaster role performance: LOC</td>
<td>1</td>
<td>within impact area</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>close to, but outside of impact area</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>outside local community</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>uncertain</td>
</tr>
<tr>
<td>Primary motivation for response involvement: MOTIVE</td>
<td>1</td>
<td>relevance to primary occupational role</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>relevance to other relevant role</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>proximity to impacted area</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>altruism</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>as victim</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>other</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>uncertain</td>
</tr>
<tr>
<td>Tenure in primary occupational role (in years): TENURE1</td>
<td>99</td>
<td>uncertain</td>
</tr>
<tr>
<td>Tenure in other relevant role (in years): TENURE2</td>
<td>00</td>
<td>not applicable</td>
</tr>
<tr>
<td></td>
<td>99</td>
<td>uncertain</td>
</tr>
<tr>
<td>Time of initiation of respondent in overall disaster response: TIME1</td>
<td>3</td>
<td>(46-48)</td>
</tr>
<tr>
<td></td>
<td>999</td>
<td>uncertain</td>
</tr>
<tr>
<td>Length of respondent involvement in overall disaster response (in hours): TIME2</td>
<td>3</td>
<td>(49-51)</td>
</tr>
<tr>
<td></td>
<td>888</td>
<td>involvement ongoing at time of interview</td>
</tr>
<tr>
<td></td>
<td>999</td>
<td>uncertain</td>
</tr>
<tr>
<td>Time of initiation of organized response: TIME3</td>
<td>3</td>
<td>(52-54)</td>
</tr>
<tr>
<td></td>
<td>999</td>
<td>uncertain</td>
</tr>
</tbody>
</table>
Time of initiation of respondent in organized response: TIME4
   Time of initiation in hours from impact:
   999 = uncertain

Length of respondent involvement in organized response (in hours): TIME5
   888 = involvement ongoing at time of interview
   999 = uncertain

Leadership

Instrumental leader: LEADI
   0 = no
   1 = yes, in sub-unit of organizational response
   2 = yes, in overall organizational response
   9 = uncertain

Expressive leader: LEADE
   0 = no
   1 = yes, in sub-unit of organizational response
   2 = yes, in overall organizational response
   9 = uncertain

Conflict in respondent leadership: LEADC0N1
   0 = no conflict identified
   1 = conflict identified in sub-unit leadership
   2 = conflict identified in overall leadership
   3 = conflict identified in both sub-unit and overall leadership
   8 = respondent not in leadership role
   9 = uncertain

Conflict in organizational leadership: LEADC0N2
   0 = no conflict identified
   1 = conflict identified in sub-unit leadership
   2 = conflict identified in overall leadership
   3 = conflict identified in both sub-unit and overall leadership
   9 = uncertain

ROLE CRITERIA

Incumbent's primary post-disaster role part of broader role repertoire: ROLEREP
   0 = no
   1 = yes
   9 = uncertain

Criterion 1

Consistency of primary occupational status: C11
   0 = inconsistent
   1 = consistent
   9 = uncertain
Consistency of other relevant status: C12
0 = inconsistent
1 = consistent
2 = not applicable
9 = uncertain

Evidence of previous disaster experience of respondent: C1EXP
0 = no
1 = yes
9 = uncertain

Evidence of previous experience of respondent in post-disaster role: ROLEEXP
0 = no
1 = yes
2 = role same as relevant pre-disaster role
9 = uncertain

Criterion 2

Number of INTRA-ROLE links (post-disaster): C2INTRA3

Number of INTER-ROLE links (post-disaster): C2INTER3

Number of post-disaster links to males: C2MALE

Number of post-disaster links to females: C2FEMALE

PRIMARY OCCUPATIONAL ROLE (PRE-DISASTER)

INTRA-ORGANIZATION - PRIMARY OCCUPATION

Number of post-disaster INTRA ROLE links discontinuous with pre-disaster links: C2IINO

Number of post-disaster INTRA ROLE links continuous with pre-disaster links: C2IYES

Number of post-disaster INTRA ROLE links not differentiated from pre-disaster links: C2ISAM

Number of post-disaster INTRA ROLE link type uncertain: C2IIU

Number of post-disaster INTER ROLE links discontinuous with pre-disaster links: C2IENO

Number of post-disaster INTER ROLE links continuous with pre-disaster links: C2IYES

Number of post-disaster INTER ROLE links not differentiated from pre-disaster links: C2IESAM
Number of post-disaster INTER ROLE link type uncertain: C21IEU

INTER-ORGANIZATION - PRIMARY OCCUPATION

Number of post-disaster INTRA ROLE links discontinuous with pre-disaster links: C21EINO
Number of post-disaster INTRA ROLE links continuous with pre-disaster links: C21EIYES
Number of post-disaster INTRA ROLE links not differentiated from pre-disaster links: C21EISAM
Number of post-disaster INTER ROLE links discontinuous with pre-disaster links: C21EEN0
Number of post-disaster INTER ROLE links continuous with pre-disaster links: C21EEYES
Number of post-disaster INTER ROLE links not differentiated from pre-disaster links: C21EESAM
Number of post-disaster INTER ROLE link type uncertain: C21EEU

OTHER RELEVANT ROLE (PRE-DISASTER)

INTRA-ORGANIZATION - OTHER RELEVANT ROLE

Number of INTRA ROLE links continuous with RELEVANT pre-disaster links: C22IIYES
Number of INTRA ROLE links not differentiated from RELEVANT pre-disaster links: C22IISAM
Number of INTER ROLE links continuous with RELEVANT pre-disaster links: C22IYES
Number of INTER ROLE links not differentiated from RELEVANT pre-disaster links: C22IESAM

INTER-ORGANIZATION - OTHER RELEVANT ROLE

Number of INTRA ROLE links continuous with RELEVANT pre-disaster links: C22EIYES
Number of INTRA ROLE links not differentiated from RELEVANT pre-disaster links: C22EISAM

Number of INTER ROLE links continuous with RELEVANT pre-disaster links: C22EEYES

Number of INTER ROLE links not differentiated from RELEVANT pre-disaster links: C22EESAM

Criterion 3

Type of post-disaster role performance: C3

0 = formal (role playing, established incumbent)
1 = prototyping (role playing, emergent incumbent)
2 = working (role making, established incumbent)
3 = redefinition (role making, emergent incumbent)
9 = uncertain

Knowledge requirements and respondent's knowledge of post-disaster role: KNOWLEDG

1 = general required, incumbent low
2 = specific required, incumbent low
3 = technical required, incumbent low
4 = general required, incumbent high
5 = specific required, incumbent high
6 = technical required, incumbent high
9 = uncertain

Focal organization DRC typology type: DRCTYPE

1 = established
2 = extending TASKS
3 = expanding Old New
4 = emergent Old 1 2
9 = uncertain STRUCTURE
   New 3 4
Criterion #1 Worksheet

Inconsistency vs consistency of pre- and post-disaster status/role

Primary post-disaster (organizational) role:

Pre-disaster roles consistent with post-disaster role
Primary occupational (and tenure):

Other relevant role (and tenure):

Respondent disaster experience

Respondent role experience
Criterion #2 Worksheet

Discontinuity vs continuity of pre- and post-impact role relationships

| POST-DISASTER LINKS | INTER/INTRA ORGANIZATION | INTER/INTRA ROLE |
### Criterion #2 Worksheet

**Pre-disaster Occupational Roles of Post-disaster Links**

<table>
<thead>
<tr>
<th>INTRA-ORGANIZATION/INTRA-ROLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link # -- Occup. Roles</td>
</tr>
<tr>
<td>Continuity</td>
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<tr>
<td>&lt;Rel. Role&gt;</td>
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<tr>
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</table>
Criterion #3 Worksheet

TYPES OF POST-DISASTER ROLE PERFORMANCE

DIMENSIONS OF ACTION AND ORDER

<table>
<thead>
<tr>
<th>ROLE INCUMBENCY</th>
<th>Role-playing</th>
<th>Role-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established</td>
<td>Formal</td>
<td>Working</td>
</tr>
<tr>
<td>Emergent</td>
<td>Prototyping</td>
<td>Redefinition</td>
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</table>

KNOWLEDGE REQUIREMENTS

<table>
<thead>
<tr>
<th>INCUMBENT'S KNOWLEDGE</th>
<th>General</th>
<th>Specific</th>
<th>Technical</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>High</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
Leadership Worksheet

Leadership role enactment:
   Instrumental (describe)--

Expressive (describe)--

Leadership negotiated (describe conflicts or problems in establishing/maintaining leadership role/s)
BIBLIOGRAPHY


VITA

Kristen Anne Myers