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ORGANIZATIONAL INNOVATION IN ANTICIPATION OF CRISIS:

SOME POSSIBLE STUDIES

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Introduction

We want to express as explicitly as possible the current directions of our thoughts about DRC's study of organizational changes designed to meet the problems of response to community crisis. The most important reason for expression of these tentative and diffuse ideas is to provoke responses about their relevance, fruitfulness, and omissions; most of all a push in a fruitful direction would be appreciated.

The baselines for our current thinking derive from DRC's and personal experiences in various crisis-relevant organizations (police, fire, hospitals, etc.) which have been observed to change plans, policies, organizational structure, etc. because of anticipation of possible crisis response; and the literature on organizations. DRC's research experience, through our selective perceptions, indicated low levels of change in disaster-relevant organizations even after experience of disaster has clearly demonstrated the shortcomings of current organizational plans and preparations. It has also indicated relatively high levels of innovation in anticipation of possible civil disturbances, even in some cases where community factors make them seem unlikely. Presently, important research goals would seem to be development of more extensive and systematic data on the empirical distributions and patterns of organizational innovation in anticipation of crisis and attempts at ordering possible factors which may account for the empirical patterns in ways which indicate which are most important for accounting for similarities and differences in organizational innovation.

Some working definitions may help to delimit the area of study. Thus, a _community crisis_ is defined as "a major threatening situation for which normal or routine community and organizational social structures and activities are inadequate to cope in a manner meeting even a minimum level of (subjective) community approval." Such situations include natural and man-made disasters as well as civil disturbances. More diffuse and long-range situations might also be included. A _crisis-relevant organization_ is "a local organization which would have responsibility to respond if a crisis (or perhaps a particular type of crisis) occurred in its community." For the purposes of a study of organizational innovation in anticipation of crisis it seems important to include some notion of known responsibility or expectation of response in defining the population of organizations under consideration. While these are not the only organizations to respond to crisis, they are the ones which might be supposed to have some plans ready in case of response. For these organizations response is obligatory.

Organizational innovation is conceived of as "purposeful alteration of some aspect of a crisis-relevant organization by those having the authority to do so." There are three general attributes of innovation which seem to separate it from the general notion of social or organizational change. (1) The change existed as an idea prior to its institution. (2) There is an implicit notion that the change was decided upon. (3) The decision was reached by some person(s) occupying statuses with the authority to change the organization. Such authority may be found both within and outside particular local organizations.

We want to work toward enumeration of testable hypotheses relating independent factors to some aspects of innovations in some broad sample of organizations according to the above definitions. This appears to require simultaneous work along the following lines: conceptualization of organizations and of the phenomena, selection of variables to be related to innovation, development of measures or indicators of the variables, selection of some mode(s) of data analysis, development of procedures and instruments to collect needed data, location of relevant bodies of secondary data, review of current DRC data, review of literature on various types of organizations to be studied. There are certain immediate needs which have to be met before some guiding instruments are developed: (1) Review of some literature on police departments: A number of sources have been located which should provide needed background information on police departments and their innovations. Also a content analysis of police journals would provide similar information as well as useful primary data. (2) Review of hospital journals: Again this provides needed background information on the range and types of innovations these organizations attempted, as well as primary data on information and knowledge inputs into hospitals. (3) More generally library searches for secondary data on all types of organizations that it is decided will be included for study. (4) Additionally, after examination of interviews from a few of the 16 cities, it is apparent that a complete review of this data is of high priority. This primary data is relevant to all of the enumerated current tasks -- conceptualization, insight into the range and specific types of innovations in each type of organization, leads to eliminating and adding hypothetically-relevant variables to be tested for their relationship to levels and types of innovation, etc. However, it is also apparent that there is not enough time for these to be reviewed by the principles of our two-man committee. We do not have time to locate, let alone assess the relevance of our primary data references in time to also develop concepts, choose variables, derive indicators, and develop even a very rough instrument soon, but the work needs to be done.

Dimensions of the Organizational Innovations Under Consideration

DRC's primary data includes references to a variety of concrete changes in crisis-relevant organizations which would be included as "organizational innovations in anticipation of crisis response." Respondents have reported

changes in plans, policies, routine programs, creation of new organizational subunits, new statuses, new responsibilities, establishment of new inter-organizational relationships and so forth. The variety and range of such innovations, which are currently considered as dependent variables, perhaps approaches that of the organizations themselves. Thus, some clarification and distinctions along more sociological lines is needed to delimit the nature of the dependent variable in the proposed study. The following are some initial distinctions which tend to separate the class of innovations along sociological lines:

(1) We can distinguish between innovations which change the stand-by social mechanisms designed for response to crisis from changes in the routine and ongoing organizational structure and activities. Plans and policies which are developed for implementation in crisis response are examples of the former, while creation of a new bureau to routinely write and review plans would be an example of the latter.

(2) We can distinguish innovations which are related to improving response from those which are designed to reduce the probability of occurrence of crisis or reduce the possibility of blame assessment for crisis. Both the examples under "1" above are of the former, while creation of police-community relations bureaus, sensitivity training, temporary dams, and public relations programs to improve organizational prestige or image are examples of the latter.

(3) As sub-distinctions among those innovations which change structural aspects of either crisis response or routine structures the following sub-divisions may be made among both types: (a) new responsibilities (sometimes labeled with a new title) added to an existing status, (b) new statuses, (c) new organizational subunits, (d) entirely new organizations, (e) new or altered interorganizational relationships, (f) new resources or facilities, (g) new member-socialization programs, (h) new policies and (i) changes in organizational domain.

(4) We can also sometimes distinguish between innovations which were initiated by authority within the local organization and those decided upon by authority external to the local organization.

Of course, these analytical distinctions are neither mutually exclusive nor exhaustive, but they are examples of differences in the dependent variable which may have different independent antecedents and which may turn out to distinguish different patterns of innovation from organization to organization.

General types of Independent Variables Which May Account for Variation In Patterns of Organizational Innovation

Concretely there are many factors which have contributed to organizational innovation in anticipation of crisis. Their variety is attested in both the

DRC's primary data and the literature on organizations. In the absence of some guidance from a coherent theory of either organizations or social change, it is very difficult to enumerate with either parsimony or closure those concrete factors which should be hypothetically linked with organizational innovation. At an abstract level, however, there are several "types" of variables which should be systematically taken into account. (1) Our research design should include a set of variables measuring organizational characteristics. These for the most part would include variables usually referred to as "structural characteristics" of organizations. Examples would be size, complexity, wealth, level of professionalization, domain, status structure, authority structure, etc. Also included here would be such events or conditions as past experience with crisis response, leadership changes, etc. (2) Another set of variables which apparently affect organizational innovations is the community context of the local organizations. Here are included global properties of communities such as size, ethnic composition, degree to which crisis or crisis response has become a political or community issue or controversy, organizational profile of the community, degree of minority militancy, etc. (3) The third set of variables refers to the social network context of the focal organizations. Social network is used here in the sense defined by Olsen (from Nadel) as the complete set of organizations within a particular society functionally related through relationship to a common problem, concern, responsibility, etc. For example, in the present context we can speak synthetically of the social network of organizations which share a concern for police preparedness. Again, for example, we can focus on global, relational and distributional properties of different social networks associated with focal organizations: wealth, organizational profiles, confederated or corporate structure, level of free-floating resources, level of mobilization as change agents, etc. (4) A final set of variables are specific organization-environment relationships of focal organizations. Actually these would be included under either community context or network context, except in the present usage they are reserved to indicate truly contextual attributes of the organizational environments, while organization-environment relationships are meant to represent conceptualized and measured relationships with specific members of the focal organization's organization set. Such concrete relationships can be conceptualized along a number of dimensions, for example comparative versus normative reference organizations, degree to which new linkages are established, degree to which use of old relationships is intensified, the actual inputs which flow through the relationships (i.e., information about possible innovations, evaluations of possible innovations, grants to procure resources and finance programs, authoritative commands, etc.), the interests in common to the organizations in the relationships, etc. These relationships can be viewed from a number of stances including the organization-set formulation of Evans, Simon and March's informational-input framework, and Thompson's eclectic approach to environmental influences on organizational structures.

In terms of our current guesses and assessments of the relative weight of these types of variables in facilitating and providing conducive

situations for organizational innovations, we want to particularly concen-
trate on the role of organization-environment relationships. While it is
certainly not clear what determinant role is played by each of the types
of variables (i.e., facilitating, thwarting, limiting innovation) this
type of variable is often referred to in the interviews as important sources
of information, impetus, and so forth in the process of deciding to under-
take innovation. The environment of the organization seems to provide not
only threats of negative sanctions if organizations do not innovate, but cer-
tain degrees of uncertainty which encourage it also. Further, as the
community and network contexts become mobilized through public opinion,
legislation, etc. the forms of innovations are structured and limited.
Finally, interorganizational relationships among other local organizations
facing the same environmental constraints provides sources of information,
models for innovation, and bad examples of responses which seem to influence
innovation.

(5) Finally, the characteristics of the anticipated crises and organi-
zational conceptions of the nature of the crisis agents may also be important
independent variables. So might be the values threatened differentially by
different sorts of crises. However, these last types of variables are
difficult to conceptualize and directly measure. They should however be
kept in mind.

Possible Foci of Research

There are basically two research traditions which are germane to the
present study. These are first, the diffusion of innovation literature and
second, analyses of organization change. With regard to the former, the
perspective has been generally individualistic. Rogers (1962), in his
systematic review of the diffusion literature, delineates elements of the
innovation process and characterizes innovators, adopters, and the innova-
tions themselves along a series of conceptual categories. Though indivi-
dualistically oriented for the most part, the generalizations and the
emergent conceptual development from this literature has relevance for our
organizational analysis. The organization change literature is not parti-
cularly well developed nor systematically codified in any coherent fashion.
There are some general conceptualizations of import such as that of Burns,
Simon and others which have heuristic value, empirical work such as that
of Aiken and Hage which have methodological relevance, and the literature
on planned change, such as Bennes, Triandis, which may provide relevant
ideas. In addition some of the decision-making literature, particularly
Simon, March, Thompson and Dill, has import for an analyses of the internal
organization process of innovation which in some measure parallels conceptions
of the adoption process in the diffusion literature. Furthermore, the
growing literature on organization-environment relationships is of direct
relevance as this is a major variable of the study. And the conceptualiza-
tions of organization learning, often couched in terms of a cybernetic model

may be profitably employed, (Dill, Caldwallader, Buckley, Degler). Finally
in a more general sense, a requisite of this study is a well-reasoned con-
ceptualization of organization; thus, the research draws sustenance from
a rather large number of conceptualizations of organizations. With this in
mind the following represent possible foci of research. As a general point,
the actual data obtained for a general study of organizational innovation
represents inputs for other research foci. This should become more clear
in the following section.

A. A study of the diffusion of specific innovations among a population
of organizations. Rogers and similarly Katz and Levin delineate
basically 4 elements to the diffusion process. These are:

1. The innovation itself perceived as new

2. Its communication through specific channels of communications

3. Within a given social structure

4. Over time

Our effort, therefore, will be first to specify specific innovations
such as the creation of community relations bureaus in police depart-
ments or the development of task force operations in fire departments.
Second, specify a time context; in this case, we can begin with
July, 1965 (Watts) to present in yearly intervals. Third, identify
the relevant mechanisms through which innovations diffused such as
various network linkages. On the basis of this analysis we will
be able, hopefully, to distinguish between innovators, early and
late adopters and non-adopters. In conclusion then, the dependent
variable of this study will be adoption versus non-adoption of specific
innovations within sets of organizations.

B. A second study will treat specific focal organizations in terms
of all innovations made as a basis of comparative analysis.
Thus the dependent variable becomes the overall profile of
innovations made by a specific organization. The dependent vari-
able can be expressed in terms of the overall adoption versus
non-adoption of innovation based upon the series of measures
tentatively discussed on pages earlier. (These measures may
be amenable to scaling for unidimensionality in the Guttman
sense, but this will be determined later.) The dependent variable
can also be expressed in terms of global measures of innovation,
e.g., total allocations for training as a basis for comparison.
At any rate, with this study, two types of comparative analysis
appear to be plausible. First, comparisons along a few dimensions

with reliable measures across all organizations studied, e.g.,
taking 1 or 2 interval level measures of each of the 3 dimen-
sions discussed earlier, and determining their independent
effect through multivariate analysis. Second, meaningful com-
parisons, though on less universal dimensions can be made on
sub-populations of organizations. The basis of these compari-
sons will be different sociologically relevant configurations
of variables as well as what we empirically determine as
critical inputs. The possibilities appear to be considerable.

C. A study of the organizational decision-making process to innovate.
Here we are concerned with the internal dynamics of decision
making and the relevant inputs to that process. Thus both
organizational attributes and dimensions of the environment
become important considerations. By way of illustration, the
following factors appear relevant for analysis. First, the pro-
cess through which the organization perceives an alteration in
its task environment. Second, the nature and types of communica-
tions linkages with the environment are crucial. Third, resource
inputs for innovation such as budgetary allocations, resources
for planning, external funding, etc. are important. Fourth,
the mechanism of trial or evaluation of innovation must be
identified. Fifth, the identification of the key decision makers
at various levels of the organization appears essential. As a
general statement, there appear to be intermediate stages from
the awareness of environmental uncertainty or threat to the
actual decision to innovate. These must be identified. A
good approach at this point appears to be to forego a priori
conceptualization of the process, as opposed to attempting to
discern empirically what was important for each organization
studied and then compare, perhaps within specific types of
organizations, to see if particular patterns or types of pro-
cesses are operative. At this point, we have little or no
reliable data on this dimension. Yet this decision-making
process is definitely important and we feel it can be made amenable
to analysis.

D. Community Level Comparisons

The final focus of research entails a comparative analysis
of community change as an adoptive response to the threat or
occurrence of civil disturbance. At one level, this can be re-
presented as the sum total of the innovations made by the
community's component organizations. Community change may be
more profitably analyzed in terms of the degree to which the
innovative activities of component organizations become integrated

in various ways such as preparations for coordinated response
or collective efforts to ameliorate perceived antecedent con-
ditions for civil unrest. This study requires a delineation
of the conditions for community mobilization such as facilitating
community characteristics, the activation of community influentials,
and the mobilization of the formal authority structure, etc.

A general assessment of community innovation appears derivable
from the data obtained in the general study. However, explanation
of the process of community change requires a much more intensive
study for any city. Thus, we suggest that for cities defined as
highly innovative, 3 or 4 might be chosen for case studies. Now,
at the very last, these studies would require the identification
of community influentials. Therefore, the methodological advances
made in the water resources project would be very helpful here.
More importantly, this study represents a lead-in to a general
convergence of research interests at DRC. In other words, we
will have the basis for comparative community studies in terms
of types of community crisis, i.e., natural disasters (the
community coordination study is relevant here), water-related
problems (water resources project), and civil disturbances
(NIMH), differential community characteristics and different
types and levels of innovation to meet crisis.

Possible Organizations for Study

1. Police Departments: Appear to have the highest levels of innovations
   along a number of dimensions. Entree and rapport has been good; with
   the exception of information on internal decision processes our primary
   data has been very good and useful.

   Steps to Research: (a) Review of the current literature for secondary
   data; for information on police journals as primary data, and for
   isolating the particular innovations which have diffused among police
   departments. One problem here is that only one police journal appears
   to be in the OSU library system. (b) Contact and interview Ohio
   state officials in agencies assisting and coordinating assistance to
   local police departments. (c) Contact and interviews with national
   level organizations concerned with police preparedness, including the
   national police associations, and Federal officials in National Guard,
   Justice Department, HUD, etc.

2. Fire Departments: Seem to have much lower overall degree of innovation
   than police departments, but the innovations involved show less local
   variation (e.g., adoption of "task-force" response techniques, etc.).
   The literature on fire departments is either much less developed than
   that of police or is particularly illusive. Federal funds are not
   available for fire departments.

<u>Steps to Research</u>: Continue search for relevant literature. Contacts with the International Association of Fire Fighters to get respondent information on their role in innovations at the local level and to tap them as a source of secondary data. Also, although OSU library sources do not indicate it, the Insurance Underwriters Association must have some extensive data on general characteristics of fire departments as a basis for rating insurance risks. We should attempt to follow this up. Other sources of secondary data on fire departments and their innovations need to be searched out.

3. National Guard Organizations: As far as can be determined we have had two contacts with such organizations: a single interview at the local level in Waterloo, Iowa and extensive interviewing at the state level (one at regional level) in Ohio. The data gleaned from these interviews has been good. Entree and rapport problems were much lower than feared. Essentially, the respondents have been very open in describing policy and the rationale supporting their policies. In general terms, they have been open about their increased engagement with local police organizations and telling of the existence of mutual written plans and close liaison relationships with local police. However, they were less open about information on specific relationships with specific departments. Essentially, this type of data must be gathered from the regional command headquarters (there are four in Ohio). These are commanded by "week-end" generals. The information gleaned from an interview with the General involved in Ohio was unsuccessful from the standpoint of getting such data on the specific interorganizational relationships between his HQ and local police departments. Of course, this may be an idiosyncratic case. When we tried to get permission to talk to the major (permanent staff member, full-time) who actually handles these interorganizational contacts in routine times the General evaded the request, saying he had all the information required by our questions. However, he did not give much information beyond describing general policies. It appears that interviews with those permanent staff members who actually handle the interorganizational contacts and liaison with local police can be a valuable source of information about local police departments as well as the National Guard.

<u>Steps Toward Research</u>: Initial checking of OSU library catalogue turned up no relevant literature; if we knew where to look it might be helpful to pursue this search further. Most important is to gain access to the restricted material which the Ohio National Guard office has. This included after-action reports of Guard response in civil disturbances (and perhaps disaster as well). We discussed this material when interviewing there, but they were hesitant to let us read it. Tentative clearance for the DRC Co-directors to examine it were okayed. Perhaps this should be followed up. Particularly, these documents might provide an assessment of some of the factors taken into account by the National Guard organizations in planning and deciding on change. Also

contact and interviews with national-level liaison and planning personnel should be considered. If contacts and data at the state level in Ohio continue to be fruitful, perhaps entree into the state-level National Guard organizations in neighboring states could be developed and followed up.

4. Public Utilities: Entree and data acquisition success has been very mixed with these organizations. There appear to be problems of organizational security regulations and of reaching those organizational members most knowledgeable about innovations, policies, and emergency plans. It appears that the authority to release sensitive information resides in different statuses than the expert knowledge of the content of innovations. Another interesting point is that although there is wide range in the size and territorial areas served by various utilities, local units tend to have a "corporate" rather than a confederated relationship with regional and national organizations. That is, the local organizations we have talked in are parts of larger regional and national structures. Thus, to a greater extent than in police, fire, and other confederated interorganizational structures, the innovation decisions and content of innovations are determined outside the local organizational structure. This has not only possible theoretical importance, but offers an alternative research strategy similar to one which might be followed in the case of the National Guard and other corporate interorganizational structures. We might, for example, attempt direct contact and interviewing of the members of the Ohio Bell Disaster Board (Commission) both as an entree into local organizations and as a preponderant source of information on the decision processes and content of the innovations.

Steps Toward Research: Search for secondary data on both local, regional, and national organizations. Make contact with policy-making level board and committee members (e.g., in Bell Telephone) at state, regional and national levels (we think some individuals are active at all three levels).

5. Hospitals: Hospitals are important organizations to include, because of the similarities in problems posed for them in both natural disaster. This similarity is partially rooted in the concrete activities occasioned by any possible mass-casualty situation. Such similarities in problems, level of involvement, and responsibilities (domain) are not typical of the other types of organizations mentioned here. For example, police departments do respond and do anticipate response to both natural disaster and civil disturbance, but along a number of dimensions -- operationally, relationship to normal-time domain, centrality of responsibility for overall response (see G. Warheit's dissertation), etc. -- civil disturbance disaster is much more salient for and intimately related to police departments than is natural disaster. Thus, hospitals offer interesting possibilities for comparing whether one type of crisis threat produced patterns of innovations not found in the other type.

<u>Steps Toward Research</u>: More general information might be obtained through interviews with officials of local, regional and national hospital associations. Also a superficial content analysis of hospital management journals should be fruitful in providing both secondary and primary data on the context of hospital innovations.

6. Civil Defense Agencies: Although there are some difficulties in subsuming many CD agencies under a complex organization framework of concepts, they can at least be treated as formal organizations or offices. In fact this difficulty presents an interesting dimension to explore in terms of its consequences for innovation. The relatively poor, small, and low prestige character of such agencies might show systematic effects on their ability to change plans, especially interorganizationally and at the community levels. Another interesting type of variation in CD agencies appears to be the variety of structures and locations of CD functions and programs from city to city. In some cities the CD functions and programs seem to be isolated in one organizational setting, while in others (e.g., Los Angeles, New York City) they are scattered among other agencies. An additional consideration for CD agencies might be the current effects of changes in OEP and Corps of Engineers relative emphases on preparation for crisis versus reconstruction-recovery from crisis. Since one of the fundamental impressions developed in our work so far is that inducements, resources, expertise, encouragement, and, more generally, active interorganizational ties between the local (focal) organization and other organizations in its social network (Nadel) increases the level and probability of innovation, this change in policy at the national level might be expected to evoke systematic changes in the innovation patterns of civil defense agencies. This idea is also applicable to other natural disaster-relevant organizations such as public works (Cf. La Crosse, Wisconsin) and city governments in general (Cf. Mankato, Minnesota).

   <u>Steps Toward Research</u>: We, of course, have had extensive contacts with CD agencies in the past. Perhaps, one way we might go about learning more would be to make some more contacts at state levels. Our greatest problem here is to develop or find concepts and dimensions which facilitate comparison among the variety of organizational forms taken by local CD agencies and between them and other organizations.

7. Community or Human Relations Commissions and Agencies: This group of organizations has not been considered too fully by our task force. The other task force working on this problem should have much to contribute to the considerations necessary for the present study. It should be pointed out that there are very interesting possibilities in the <u>development</u> of these organizations as well as their functions.

Since a number of these organizations are themselves innovations of recent vintage it might be very interesting to study the correspondence between the objectives for which they were ostensibly created (organizational charter) and the activities which they now perform, as well as looking for factors which might account for variations along these lines. Particularly, we might look for factors in their environments which influence the emerging structure and functions of these new organizations.

In terms of comparisons of these organizations with other types with respect to their innovations in anticipation of crisis, there is a major difficulty: vis., it is difficult to see how one may treat new organizations within a framework of concepts designed to handle innovations and changes within existing organizations. It seems that innovation to create new human relations and community relations agencies should be conceptualized as an aspect of a community level of analysis, rather than as organizational innovation.

Steps Toward Research: This depends entirely on what the other task force recommends, as well as continuing review of the primary data already gathered.

8. Public Works Organizations: We do not have too much to say here, except that they would appear to differ among themselves as to their relevance for this study depending on the type of disaster threat they might conceivably encounter.

Steps Toward Research: We could work from Brouillette's bibliography and secondary sources to derive secondary data on these organizations, but we would need more information in the form of primary or secondary data to ascertain the appropriateness of studying them. That is, we need to know more about whether there is innovation in these types of organizations and in what ways they innovate.

9. Local Red Cross Chapters: These organizations are interesting because of the similarities with Salvation Army in domain, but they contrast along a number of other dimensions. They also appear to be imbedded in something between either "corporate" or "federated" interorganizational structures. Thus, some changes are dictated by national policy, while others may be undertaken on local cognizance.

Steps Toward Research: We should probably try to get more of a national view of the changes in Red Cross by interviews at regional and national levels.

10. Salvation Army: One interesting thing which has turned up here is the requirement for after-action reports of each response of local SA to civil disturbance. These reports were sent to regional HQ,

duplicated and distributed to all local SA organizations. This presents a foothold on the questions of organizational learning we might want to ask. How were these reports differently used by different locals? What changes can be traced to this mechanism of learning the nature of civil disorder and the problems encountered in it?

Steps Toward Research: Again, there might be some utility in interviewing regional and national officers as sources of both primary and secondary data.

11. Mass Media: We are counting on Brook's study of these organizations to indicate the utility of additional study with a greater sample of organizations than the present six-city focus.

Summary Comments on "Initial Steps Toward Research"

Currently, we are reviewing the Center's primary data on all of the above types of organizations except mass media. So this is included in all of the sections above. Also sporadic library searches for secondary data and background sources are underway.