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DISASTER ASSISTANCE AND SOCIOECONOMIC
RECOVERY AT THE INDIVIDUAL AND
HOUSEHOLD LEVEL:
SOME OBSERVATIONS

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Introduction

We are going to cover three general topics in our remarks.

First, we will note that what seems a simple enough term or word --namely "recovery"--covers a variety of very complex matters which need to be addressed in any practical and/or theoretical discussion about the issue. It can make a significant difference in consequences as to what something is called.

Second, we will highlight and summarize some ten general themes from the research literature about what is known about those who are **assisted** in the recovery effort after disasters. There are substantial differences regarding for instance the sources of aid, the kinds of help provided, and the effects of the assistance given to victims--especially at the individual and at the family and household levels--in the recovery process.

Third, we will conclude with a few briefer comments about what the research literature says about those who **give** or provide recovery assistance in the aftermath of a disaster. The givers or providers are somewhat different and have more complex problems than usually recognized.

Our remarks are drawn from the existing social science research literature. The core of this material consists of about three dozen publications which deal unevenly with diverse topics in the disaster recovery area. The major sources we used are indicated in the selective bibliography at the end of this paper.

The Term "Recovery"

What does the term "recovery" mean?

In the research literature, in everyday disaster planning, and in actual practice, the referent of those who used the word is not very clear and often inconsistent and confused. While the general referent is obviously to a temporal dimension--part of what goes on in the postimpact phase at some point after the emergency time period of disaster--but practically all other aspects are rather murky in the thinking, writing, and doing of most people and groups.

In fact, there is not even much agreement on the specific term, word or label to use, or if the different concepts used have reference to the same or different kinds of phenomena. The very title of the session in which this paper is being presented uses three words--recovery, rehabilitation restitution. Presumably they mean something different, for otherwise why three different names?

Our impression is that most of the terms frequently used and sometimes interchangeably by both researchers and operational

personnel, with the more common ones being reconstruction, restoration, rehabilitation, restitution, and recovery are not quite always pointing to the same thing or process.

Let us give our general impression of how the terms seemed to be mostly used.

Those that use **reconstruction** seem to stress almost exclusively the postimpact rebuilding of the physical structures destroyed or damaged in a disaster. While for social scientists and most operational personnel that probably is not the most important dimension to consider, it is nevertheless what some individuals and groups primarily attempt or do--putting up buildings and material infrastructures to replace those impacted by disasters.

Restoration appears to be a statement about reestablishing prior or preimpact physical and social patterns. Whether one thinks of this as a goal, a measure of success, an indicator or personal and/or social change, it would seem to indicate a putting back into nearly the original form whatever existed before the disaster.

Rehabilitation would seem to also suggest a restoration although more of people than things. There is also the connotation of raising the restored level to a better one than before the disaster.

Restitution seems to suggest some kind of restoration to rightful claimant or owners. It implies legal actions to return to a former state.

Finally, the term **recovery** often seems to imply that attempting to and/or bringing the post disaster situation to some level of acceptability. This may or may not be the same as the preimpact level.

What's in a name?

A great deal and in this instance there is far more involved than semantic quibbling. There are, for example, policy implications linked to different labels. What something is called does make a difference.

Our intent here is not to lay down in an arbitrary manner what should be called what, but rather to call attention to the necessity whether by researchers or operational personnel to specify what they mean when they use one and/or all the different labels we have noted before. Likewise, others to whom the terms are directed must also have the same meaning in mind for otherwise there will be miscommunication at best and conflict at worst. If you tell someone their property will be restored--having in mind bringing it to the preimpact state--and they have in mind reconstruction to a better than preimpact status, for instance,

insures difficulties and problems.

For our purposes in these remarks, we will primarily talk of the recovery process following major disasters. By that we mean that after the impact of a community type disaster and after emergency time needs have been met, there will be a period of time where deliberate actions are undertaken to routinize everyday activities of those individuals and groups whose daily routines have been disrupted. These activities may restore old patterns and/or institute new ones; what actually results is an empirical matter and is not part of the symbolic conceptualization of the process. For purposes of identification our emphasis is on the process, not the end product.

Nevertheless, there are policy implications from this approach in considering what might constitute **success** or **failure** in recovery. Let us mention six.

1. The goals of recovery.

One could assess recovery in terms of restoration of whatever previously existed prior to the impact of the disaster. On the other hand, the process could be evaluated in terms of bringing the postimpact level up to a higher level than existed in the preimpact phase. This is a decision that sometime has to be made at the operational level.

In the past although not now, for example, the American National Red Cross took the position that their criteria in providing assistance was need not loss, that individuals and families ought to be assisted to the extent that they would have a certain standard of living irrespective of whatever they had lost. One result of this is that some victimized by disasters ended up living better than they had before impact, whereas others who had lost substantially more were given the same kind of assistance which left them considerably below their prior-to-disaster standard of living. This also illustrates there can be problems if organizations providing recovery aid have different goals in mind than those that are assisted.

But apart from the view of those assisted, those helping or assisting should be clear about their goals. Whether it be about individuals, households, organizations or communities, what is the goal or the criteria to be used for assessing success in recovery? Is it enough to bring back the past, or is something new or different necessary?

2. The levels of recovery.

Not only is it necessary to specify what the goal is in the recovery process, but it is also necessary to note that the process might not proceed at the same rate or in the same way at different

levels of the social units involved. This is to say that while the recovery of individuals, households, organizations, the community, and the society are not totally independent of one another, neither is the linkage or correlation necessarily very tight.

For example, a community might lose part of its tax base or some particular industrial plant or business and in that sense might not recover well from a disaster. However, individual citizens or households in the impacted area might recover well from the same disaster in the sense of reestablishing routine patterns and not be directly or even indirectly affected especially in the lifetime of the person or family by the community loss. In terms of a concrete example, Valdez, Alaska (of more recent notoriety) obtained much better port facilities after the 1964 earthquake than it had before whereas, conversely, certain families and households were forever destroyed by the disaster.

Thus, any assessment of success in recovery has to specify what social level or unit is being evaluated; it may vary from one level to another.

3. The size of the recovering unit.

We can also probably say that the larger the social unit involved, the more likely there will be postimpact recovery. Several families may, for instance, be literally destroyed by a disaster but in terms of the overall community of which they were a part, their loss could be completely insignificant insofar as overall community recovery from a disaster is concerned. The specific families may not recover in any sense from the disaster; the community involved might recover completely.

In fact, Drabek has written;

for most disasters studied--aside from a few cases that appear to have important differentiating qualities--the overall picture is one of mixed, but relatively minor, ripples in the long-term developmental cycle. Thus, impacts are mixed, in the sense that some could be regarded as negative, others as positive. Resiliency is high for most, but not all systems impacted. For example, a tornado killing seven people may evidence no discernible impact on the total community, but the families from which these seven were lost will be disrupted severely (1986: 250).

In one sense, an implication here is that smaller units or lower social levels will have more recovery problems. The exceptions would be, as implied in the quotation, if for example in a company town, a mining community, the local mine operation was forever shut

down by the disaster. But generally, the larger social entity absorbs rather easily smaller internal losses. Peter Rossi and his colleagues, for instance, found no discernable effects on demographic or housing characteristics at the county level in the United States a decade after smaller neighborhoods within counties had been impacted by disaster.

Thus, in assessing recovery, it is necessary to recognize that it will be affected by the size of the recovering unit with the larger ones more likely to recover well.

4. The perspective on recovery.

There are also some other interesting policy implications from the probability that larger social units are more likely to recover from disasters. It has to do with the perspective that is taken on recovery as a result of prior experience. What might be deemed an unsuccessful recovery from the viewpoint of one local community may not be deemed unsuccessful from the viewpoint of higher levels such as the province or state and particularly the federal or national level which normally will have to deal with more disasters within their larger geographic area of jurisdictional responsibility. Higher levels will have relatively many experiences of disasters, while for most given communities, it is the experience of a lifetime. As such, the former are more likely than the latter to have realistic rather than idealistic conceptions about recover.

Our point here is that assessment of recovery is not just a matter of what actually occurs, but also prior experiences which affect perceptions of the process.

5. The recovery from secondary or ripple effects of disasters.

There is a strong tendency in disaster occasions to focus on the obvious and direct destruction and damage. One consequence is that the recovery process sometimes ignores or downplays the secondary or ripple effects of disasters. This is well illustrated by the Three Mile Island nuclear accident. Deaths, injuries, and property damage were almost nonexistent. But the indirect and secondary economic costs were enormous. Apart from the financial devastation of the power company involved, the stricter regulations on the nuclear industry and the increased costs of reactor construction and updating, the reduced operations of reactors around the world, and a turning to more expensive energy sources, have undoubtedly cost in the hundreds of million of dollars.

If this kind of socioeconomic cost analysis has validity, it is a question if the United States and other societies have yet and have fully recovered from the Three Mile Island incident (and we leave aside here in what ways there has been recovery from the Chernobyl disaster with more far reaching effects of all kinds). At any

rate, our point is that in assessing recovery it is necessary to take into account whether not only direct effects but the more likely wider ranging indirect consequences of a disaster have been dealt with in the process.

6. Recovery from disasters differs from recovery from catastrophes.

Finally, it is easy to be misled in North America by the fact that the great majority of all the disasters that have happened up to now have been community disasters at worst. We have not had the regional or even national catastrophes that have impacted certain Latin American or Asian countries, for instance, where losses up to three percent of the annual gross national product have been sustained or as in Jamaica a few years ago where the basic industries of the country (in this case, tourism and sugar) were badly damaged, and therefore what occurred was a national rather than community level disaster. It is possible to see these kinds of differential effects on different social systems in what Hurricane Hugo did two years ago. For example, in Montserrat nearly all of the island's 12,000 residents were made homeless, a truly catastrophic occasion for that island system while at worst, Charleston, South Carolina suffered a disaster and not a catastrophe.

One major difference between community level and regional or national level disasters is that in the former there typically is a convergence of assistance from nearby communities. But the more a disaster encompasses nearby geographically contiguous areas, the less likely will those localities, themselves impacted, be able to help in emergency relief or recovery activities. Thus, the larger the disaster, not only is there more likely to be greater short and long run needs, but there is less likely to be available certain kinds of nearby assistance that would be present in smaller type disasters.

A policy implication of this is the need for a different kind of planning and managing for catastrophes compared with disasters. This is as true, if not more so, for recovery processes as it is for anything else.

Let us now present some short selective comments about ten major themes derived from the research literature regarding those who are assisted. Our remarks will primarily be about individuals, families and households.

Themes From the Research Literature On Those Assisted

1. Disaster victims tend to judge not only their losses but also what they obtain in recovery efforts in **relativistic** rather than absolute terms. Loss and assistance is often evaluated in terms of what others known to the victim have undergone or gotten. There

is an additional tendency for this to be even more prevalent the larger the disaster impact, that is, the more there are disaster victims the more probable is this relativistic attitude likely to prevail. This principle is far more applicable in community type disasters and less so in other kinds of disaster occasions such as transportation accidents where survivors tend to come from a variety of different of social settings to which they return for recovery.

2. Certain preimpact social locations or placements affect being helped in the recovery process. In general, those **outside** of the everyday mainstream remain outside in the postrecovery period. For example, single people, older women, the homeless, or non-religious persons in an area with strong religious affiliations, as social categories tend not to receive equivalent degrees of aid. Everything else equal, large metropolitan areas are more likely to have isolated individuals and households than other areas, and this carries over into the recovery period.

3. Some families/households receive more help from various sources than others with roughly equivalent losses/needs. Just as in everyday life some social units are in more formal and informal **interaction patterns** and **networks** than others, the same occurs in the postrecovery period. This is why some families from tightly integrated ethnic groups do so much better in recovering than other family units who are less linked into extended kinship patterns. Thus the social heterogeneity of a community is not necessarily bad for disaster recovery purposes.

4. Somewhat of a different nature, but involving the same principle, there is differential knowledge in terms of social status of where to go for help and how to obtain assistance. There are considerable differences in knowing how and where to approach bureaucracies, filling in forms and doing other paperwork, etc. Interestingly, low status and upper status individuals and families seem to know better **"how to work the system"** than do those from middle class status.

5. For the great majority of victims, relatives and kin are the major helping sources in the recovery period. More often than not the help is offered, not requested. In particular, housing help is often provided through such a source (although while short run sharing of housing with others is acceptable, serious stress in relationships occur if common quarters are shared for extended periods of time). But while recovery through the kinship system is usually the most important, there are of course families whose recovery is almost totally dependent on institutional help. Bolin (1982) in his study of how families recover after disasters also notes that there are even some relatively rare cases where recovery is rather autonomous, relatively independent of kin or organizational help.

6. The family **socioeconomic** status is important in the recovery process. The higher the socioeconomic level of the family, the more likely will it recover to a preimpact level. The converse is also true. While it would be an overstatement to say that disasters result in the "rich getting richer and the poor getting poorer", there is little evidence that disasters in the long run will materially change overall preimpact socioeconomic status differences, despite some individual case exceptions to the contrary.

7. The later a victim family is in the **life cycle**, the less likely will there be recovery to a preimpact level. Both economic and psychological factors appear to be involved. For instance, retired couples who have suffered losses find it more difficult to obtain bank loans to rebuild a house and also they think, probably correctly, that they will simply have less time in the rest of their lives to be able to do so. This is simply another way of saying that not all socioeconomic losses are equivalent even though in financial terms the figures may be the same.

8. There is a difference, and no necessary strong correlation, between **perceptual/symbolic** recovery and economic recovery. That is, sometime there is recovery in terms of material things but often there can be no restoration of lost symbolic possessions or things, be these important family remembrances such as photographs or the old trees that will never exist again in the front or back yard. For some families, the past can never be recovered no matter what is provided materially in the recovery process.

9. The more temporary housing **relocations** occur, the more difficulties there will be in the recover period. Moving victims more than once into temporary shelters seems to prolong or delay recovery. Victims usually cope relatively well with the immediate disaster impact and the first move into emergency quarters, but show sharply decreasing adaptability to cope with additional moves. This is why sometime the postimpact period is more stressful and may be, in one sense of the term, more of a "disaster" than the actual impact of the disaster agent itself.

10. There can be **positive** as well as negative consequences from involvement in the recovery process, social psychological as well as socioeconomical. For example, household family ties often tend to be strengthened among victim families. This appears to be somewhat more true at the perceptual than the behavioral level. To a certain extent there is also the strengthening of ties with other kin. On the other hand, while initial responses to recovery aid tends to be favorable, hostilities frequently develop in later phases. In fact, at the collective level, there is almost always a "bitch phase" with a striking out and negative criticisms of whoever happens to be around even though they may be helping groups.

Overall, running through our remarks and the research literature is the idea that what occurs in the recovery period reflects considerably whatever existed in the preimpact period of the social system involved. This stands out most clearly in extreme cases of what might be called shortcircuited recovery efforts. Thus, in St. Croix after Hurricane Hugo, a part of the local population engaged in behavior very rarely seen in disasters, namely, widespread, public, collective and socially supported looting--something which research has consistently found to be almost nonexistent in most community disasters (but which is the pattern that typically surfaces in civil disturbance and riot situations). But what occurred in St. Croix was essentially a continuation of the preimpact social situation, an almost anomic social system characterized by widespread poverty and extensive stealing of goods (although it is very important to note that poverty per se does not automatically lead to criminal behavior; other sociocultural factors must be present). After the hurricane, some parts of the population involved took advantage of the situation to attempt to shortcircuit their recovery from the disaster. In more general terms, if we know what exists before a disaster impact, we can have good although not perfect prediction about what will affect what will happen in the emergency and recovery time periods.

Themes From the Research Literature On Those Who Assist

It is easy in talking of disaster recovery to focus almost solely on those assisted. However, it is important that we have understanding and knowledge of those who provide assistance. In some ways, from the viewpoint of disaster planning and managing, it probably is easier to change those who assist than those who are helped. Furthermore, as we have often discussed elsewhere, the locus and source of most postdisaster problems are the helping organizations rather than individual victims as such.

At any rate, we indicate about five selective general themes from the research literature about those who assist after disasters. Some of the specific findings are simply the converse of those we have reported about with respect to those that are helped in the recovery process (e.g., the tendency of agencies to help victims in the mainstream of social life and to miss those outside), but some are not. However, our comments here are in terms of general themes, not specific research findings.

1. Almost all of the assistance provided informally and also by relatives and friends is less noticed and reported, giving formal agencies the impression that they proportionately provided more recovery help than is actually the case. It is not that official relief and recovery groups do not provide substantial and important help; they do, but not to the extreme extent that they usually believe. This may lead to a formal overestimation of disaster

related individual and household needs in a stricken community, and also to duplication of recovery assistance along some lines. More important, this lack of attention if not unawareness of the influx of informal and/or kinship recovery assistance leads to an ignoring of the process in both the planning for and the managing of recovery.

In particular, religious and quasi religious groups play a more important informal role in recovery activities than is usually realized. There are many such groups and many of them operate very informally. Only to the extent that they may take an advocacy role on behalf of victims, do they tend to become publicly visible. In certain city neighborhoods, ethnic groups may play a similar unnoticed role in recovery.

2. A very typical characteristic of disasters is the appearance of new groups and new ways of doing things, what has sometime been called the "emergent" quality of disaster response. This is as true of recovery organizations and recovery activities as it is of any disaster phenomena. Sometime rather different ways of providing help and even at times new groups are created for giving recovery assistance. Emergence is forced by the fact that traditional agencies and procedures cannot always deal effectively with disaster generated needs and difficulties. In particular, bureaucracies often do not have the flexibility necessary to cope with unusual or unexpected demands, the very aspects typical of recovery situations. In fact, to the extent there is not some degree of emergence, recovery will not be handled well by responsible organizations.

But while emergence is usually functional for disaster recovery, it is not without problems. Traditional and emergent procedures do not always mesh well. Established organizations and new groups likewise often have difficulty working together. Furthermore, whatever innovations there might be will become quickly status quo, that is relatively inflexible and unresponsive to changing or different social situations.

3. Even leaving emergent groups aside, there tends to be relatively little coordination among the formal organizations involved in recovery efforts. While this problem is not peculiar to groups that provide recovery assistance, it is sometime magnified among them. Many such agencies, unlike emergency oriented community groups such as police and fire departments and hospitals, do not have planning for disasters as a central or major responsibility. As such the necessity not only for intra but inter organizational coordination is easy to overlook until the time of a disaster impact.

There can be several negative outcomes from this lack of prior planning. Duplication of recovery activities can occur. In the worst cases, this could lead to serious interorganizational

conflicts. At times there might be recovery needs of victims which might go unmet because they fall in a territorial or domain gap between two organizations. Overall community recovery will be impeded.

4. Often overlooked are the personnel or staff problems of the organizations that undertake to provide recovery aid and assistance. There are a number of different factors involved. Staff members will often be working at non-regular tasks. Recovery organizations sometime expand to deal with new or extended responsibilities; at times volunteers are used but such personnel are almost always troublesome. Those organizational workers who have to interact directly with victims are seldom trained for dealing with persons under extreme stress. These and other factors do not make for efficiency and effectiveness in providing disaster recovery assistance.

5. Finally, unless there is systematic record keeping and a formal critique, there will be few lessons learned about organizational operations in recovery. On an everyday basis, most organizational bureaucracies are not very interested in obtaining accurate evaluations of their functioning. This is even truer of agencies which undertake traditional and new tasks in disaster recovery operations. Consequently, systematic assessments of what was done, particularly of innovations for recovery purposes, is seldom undertaken in the post recovery period.

There are several unfortunate consequences of this inaction. It makes it difficult to reach judgements about specific organizational success or failure in disaster recovery. It partly explains why most formal groups seem to learn very little for the future from a disaster experience. It is one reason why structural and functional innovations which might be useful for both everyday and disaster purposes seldom get institutionalized. Instead, what is often left in the collective memories of organizations in the aftermaths of disasters, are only "war stories" which are really not very useful for developing strategies and tactics that will make for more efficient and effective recovery assistance and for better socioeconomic recovery.

A Concluding Observation

In almost any area of study, including those that have nothing to do with disasters, it can almost always be anticipated ahead of time that the research results will eventually reach two general conclusions. One is that the phenomena being studied, whatever it is, is more complicated than might appear to be the case and in terms of first observations. The second is that apart from finding complexity rather than simplicity, research will typically find that many widely held beliefs about the phenomena will be doubtful if not downright incorrect. In our remarks we have tried to indicate in what ways recovery from disasters is complex rather

than simple and that the research findings are not necessarily supportive of common beliefs about the process.

Our view is that with such a perspective and with such knowledge, planning and managing of disaster recovery can be made more efficient and effective. Of course, we do not pretend that we have presented a complete and final picture about the recovery process, even of just socioeconomic aspects. But we do hope we have given enough so that those who have certain responsibilities for preparedness planning and management response may have been given some new and different intellectual tools for a difficult and important job, that of helping in recovering from disasters.

Bibliography

Bates, Frederick, C. Fogleman, V. Parenton, R. Pittman and G. Tracy
1963 The Social and Psychological Consequences of a
 Natural Disaster. Washington, D.C.: Natural
 Academy of Sciences.

(no author)
1979 Bibliography on Natural Disaster Recovery and
 Reconstruction. Boulder, CO.: Institute of
 Behavioral Science, University of Colorado.

Bolin, Robert
1982 Long Term Family Recovery From Disaster. Boulder,
 CO.: Institute of Behavioral Science, University of
 Colorado.

Bolin, Robert
1986 "Disaster impact and recovery: A comparison of black
 and white victims," International Journal of Mass
 Emergencies and Disasters 4: 35-50.

Bolin, Robert
1989 Temporary Sheltering After the Whittier Narrows
 Earthquake. Final Report. Las Cruces, NM.:
 Department of Sociology.

Bolin, Robert and Patricia Bolton
1983 "Recovery in Nicaragua and the U.S.A.,"
 International Journal of Mass Emergencies and
 Disasters 1: 125-152.

Caporale, Rocco
1989 "Toward a cultural-systemic theory of natural
 disasters: The case of the Italian earthquakes of
 1968 in Belice, 1976 in Friuli and 1980 in Campania-
 Basilicata," in E. L. Quarantelli and Carlo Pelanda
 (eds.) Proceedings of the Italy-United States
 Seminar on Preparations for, Responses to and

Recovery from Major Community Disasters. Newark, DE.: Disaster Research Center, University of Delaware.

Davis, Ian

1978 Shelter After Disaster. Oxford: Oxford Polytechnic Press.

Drabek, Thomas

1986 Human System Responses to Disaster. An Inventory of Sociological Findings. New York: Springer Verlag.

Drabek, Thomas and William Key

1984 Conquering Disaster: Family Recovery and Long Term Consequences. New York: Irvington.

Dynes, Russell R. and E. L. Quarantelli

1989 Reconstruction in the Context of Recovery: Thoughts on the Alaskan Earthquake. Unpublished paper.

Frie sema, H.P., J. Caporaso, G. Goldstein, R. Lineberry and R. McCleary

1979 Aftermath: Communities After Natural Disasters. Beverly Hills, CA.: Sage.

Golec, Judy

1983 "A contextual approach to the social psychological study of disaster recovery," International Journal of Mass Emergencies and Disasters 1: 255-276.

Haas, J. E., Robert Kates and M. Bowden (eds.)

1977 Reconstruction Following Disaster. Cambridge, MA.: The MIT Press.

Huerta, F. and R. Horton

1978 "Coping behavior of elderly flood victims," The Gerontologist 18: 542-546.

Kunreuther, Howard and E. S. Fiore

1966 The Alaskan Earthquake: A Case Study in the Economics of Disaster. Washington, D.C.: Institute of Defense Analysis.

LaPlante, Josephine

1988 "Recovery following disaster: policy issues and dimensions." Pp. 217-235 in Louise K. Comfort (ed.) Managing Disaster: Strategies and Policy Perspective. Durham, NC.: Duke University Press.

Minnis, Mhyra S.

1971 The Voice of the People in Disaster and After: A Study in Residential Integration. Lubbock, TX.:

Texas Tech University.

- Peacock, Walter G., C. Killian and F. Bates
1987 "The effects of disaster damage and housing aid on household recovery following the 1976 Guatemalan earthquake," International Journal of Mass Emergencies and Disasters 5: 63-88.
- Petty, Geraldine, L. and M. Krahenbuhl
1977 Economic Recovery Following Disaster: A Selected Annotated Bibliography. Santa Monica, CA.: The Rand Corporation.
- Quarantelli, E. L.
1982 Sheltering and Housing After Major Community Disasters: Case Studies and General Conclusions. Newark, DE.: Disaster Research Center, University of Delaware.
- Quarantelli, E. L.
1989 Disaster Recovery: Comments on the Literature and a Mostly Annotated Bibliography. Newark, DE: Disaster Research Center, University of Delaware.
- Rogers, George W.
1970 "Economic effects of the earthquake." Pp. 32-38 in The Great Alaska Earthquake of 1964: Human Ecology. Washington, DC: National Academy of Sciences.
- Rossi, P., J. Wright, E. Weber-Burdin and J. Pereira
1983 Victims of the Environment: Loss From Natural Hazards in the United States, 1970-1980. New York, NY: Plenum Press.
- Rubin, Claire
1981 Long Term Recovery from Natural Disasters: A Comparative Analysis of Six Local Experience. Washington, DC.: Academy of Contemporary Problems.
- Rubin, Claire
1985 "The community recovery process in the United States after a major natural disaster," International Journal of Mass Emergencies and Disasters 3: 10-28.
- Wurtele, Zivia S.
1972 A Case Study of Corpus Christi After Hurricane Celia and a Methodology for Evaluating Economic Impacts of Disasters and Disaster Assistance Programs. Santa Monica, CA.: System Development Corporation.