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THOUGHTS ON THE ALASKAN EARTHQUAKE*

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Introduction

It is the intent of this paper to look at the 1964 Alaskan earthquake, known also as the Good Friday Earthquake or the Great Alaskan earthquake, and to focus on Anchorage, the "largest city which was affected by the event. The focus on Anchorage is used as a case study to understand the nature and outcome of the "reconstruction" process and to serve as a basis for more general comments about the nature of earthquake reconstruction processes in urban communities.

Our professional knowledge about the disaster is richest for the emergency time period and the early part of the recovery and reconstruction. The Disaster Research Center (DRC) had a research team on the scene within 24 hours after impact and continued studies in the field for about another 18 months afterwards. We have depended for supplementary information and for understanding of later phases on such sources as Dacy and Kunreuther economic analysis of the disaster (1969), the Summary and Recommendations of the National Academy of Sciences Committee on the Alaskan Earthquake (1973), the book edited by Haas, Kates and Bowden on the reconstruction process, and on the relatively recent volume by Selkregg and her colleagues in their retrospective look at the long run consequences of the earthquake (1984). We have also utilized our knowledge of the growing social science literature on various phases of disaster occasions (see, e.g. Drabek, 1986). From these latter sources, we hope to make certain generalization above and beyond the specific case study of Anchorage.

Key Terms

It is useful to start with some discussion of terms, not with the purpose of establishing "correct meanings" but to indicate how we will use some words which are often used interchangeably. These words or terms are "restoration," "reconstruction," and "recovery."

It seems to us that restoration implies that, after a disaster such as an earthquake, things are brought back to the original pre-earthquake state. Thus, it is a rather static conception. However, as used, it is not always clear if the term is meant to be an empirical statement of what actually occurs or if it is an administrative goal that is desired. But the connotation is clear -- an earlier state of affairs is disrupted and that earlier state is to be restored.

Reconstruction, on the other hand, seems to stress the physical aspect of the post disaster or post earthquake situation. It conveys the notion of rebuilding damaged or destroyed buildings. It also sometime has the connotation of changing the pre-earthquake community by making it "better," but it seldom is clear as to why it should be changed and by whom. Reconstruction could be guided, among others by the desires of victims, by powerful community groups, by "experts" in rebuilding, by planners, or varying combination of these interested parties. There is an implication in

reconstructing that there are possibilities of making things better, such as by increasing safety, improving aesthetics, designing architecturally better structures, undertaking better land use, and more generally, improving the quality of life for "the people" in the area. However, the core meaning seems to center on the physical rebuilding of human communities in the post earthquake period.

The concept of recovery appears to suggest a broader view. While it can encompass reconstruction, it is more inclusive with its implication that an earthquake impacted community moves to a healthy state. That state of health could include restoring parts of the community, reconstructing others, and there is even an implication that some social change might occur. Thus recovery could result in improvement in various social relationships and units and involve a social "healing" process rather than just physical rebuilding.

A major theme of our paper is that reconstruction can only be understood in the larger context of recovery and that reconstruction--the physical rebuilding--is in effect, a social process. This social process conditions the nature of reconstruction. In turn, reconstruction affects recovery. We would argue that many of the failures of disaster reconstruction in the past have come about as a result of not recognizing that interdependence. Success in future reconstruction efforts depends on recognizing and understanding that relationship.

The importance of the concept of "recovery" does not mean that it is conceptually more precise than restoration or reconstruction. It is not. It is also not neatly separable from either the response or the mitigation processes of disasters. Since social life does not stop with the onset of an earthquake, it is difficult to untangle long term trends from effects of earthquake disasters. In fact, the longer away from impact time, the more difficult it is to attribute whatever has developed to the disaster rather than to deeply rooted social trends.

Furthermore, it is possible to talk about the recovery of different social units such as individuals, families or households, groups, organizations, communities and nation states. Our choice here is communities. However, since the case examples chosen for this conference are each in quite different national social systems, we will suggest certain variables among different social systems which might affect the reconstruction process.

Some Relationships Between The Emergency Response Period and The Recovery Process

We need to introduce other ideas here as background for our subsequent discussion. These ideas center the differences between activities in the emergency response period and the recovery period. Perhaps a major difference can be phrased in this way--in the emergency period, things get done; in the recovery period, they might not.

In the emergency period, search and rescue is accomplished one way or another. Casualties are found. Some kind of medical care is provided. Survivors are provided the immediate necessities. In Anchorage that process

was guided by what we called an emergency consensus which evolved a set of functional priorities for the community (see Yutzy, Anderson and Dynes, 1969; Yutzy and Haas, 1970). Some of the things may not have gotten done as effectively or as efficiently as the residents or others may have wished, but they got done. Equally as important, the residents of Anchorage felt good about what they had accomplished, often attributing their good works to a mythical notion of the frontier spirit of Alaskans. Goods and services were generally provided on the basis of need, not status. One consequence of that heightened morale was some hostility towards "outsiders."

However, in the reconstruction and recovery period, not everything gets done and, when it is attempted, it is often surrounded by dispute and bureaucracy. The emergency consensus breaks down and the functional priorities are no longer clear but conflicting and competitive. What was accomplished during the emergency period by direct action and by individual and small group initiative now requires multiple forms and the granting of permission by a resurgent and multi-headed bureaucracy. Old pre-disaster animosities re-emerge and are compounded by new issues relating to reconstruction. Needs were relatively obvious during the emergency period; "needs" in the recovery phase now raise questions of equity, particularly since the reconstruction process will frequently and literally make decisions in concrete.

The emergency phase then is a time period when things get done because values and priorities are clear and resource allocation is based on observable needs. Few questions are asked about "needs." Old conflicts are temporarily suspended. The emergency period is characterized by hard work, altruism as well as observable accomplishments and conflict is minimal.

By contrast, the recovery period is characterized by conflicting priorities, by issues of equity and by inattention. The community moves back toward the pre-impact state of affairs when everything did not get done. Some of the heightened conflict may center around decisions which were made during the emergency period and which seemed quite appropriate at the time. For example, the relocation of people out of damaged or risky areas into temporary housing often becomes a major item of contention. This decision, unintentionally, can create a "permanent solution." One illustration is the continued existence of "temporary" housing created after the Sicilian earthquake in 1963.

One important result of the emergency response period is the increased morale of the residents of the earthquake affected community and the associated hostility toward outsiders. This limits the nature and direction of the reconstruction process, although in other ways it might be very functional in the overall recovery process. We think that the research evidence is exceptionally clear that residents in a disaster impacted communities are primarily interested in restoring the community to its pre-disaster state as quickly as possible. While the emergency period has provided some freedom from the obligations of the past, there is strong pressure to get back to "normal"; living without a roof or with neighbors who get old quickly. That does not mean a total reproduction of the past but that past is the basis for their image of the future. The plan that the residents have of reconstruction is not

on the drawing board but in their minds of what they wanted their future to be.

Residents may be confronted early in the recovery period by outsiders who claim to know a better future for them. That future offered may be neatly packaged, advertising increased safety and the reduction of risk. It might provide visions of new alabaster cities where life is safe. Most of the outsiders do not speak the local language, only that of some "ology". The heightened morale carried over from the response experience provides rich soil for the development of hostility toward such ideas. The residents may not express their hostility openly and in fact might be quite courteous and listen but it is their future that others are discussing. The earthquake has been disruptive, not just of physical structures but of routines and social relationships and now that the tremors are over, it is time to repair those relationships. And you repair them best and most efficiently by moving back, not away from the pre-impact patterns.

One should not assume that this desire of residents to move back to a reproduction of pre-impact conditions is an isolated example or that it only occurs in the context of disasters, such as earthquakes. Fred Ikle, in his careful study of the social impact of World War II bombing, noted that cities suffering considerable bombing damage tended to be reconstructed in ways that approximate their pre-war pattern. He said:

"The persistence of the social and economic characteristics of bombed districts after World War II was partly due to the attachment of persons to their former neighborhoods. Older residents were especially anxious to move back into areas where they used to live....

For the viewpoint of city planning, this inertia in the redevelopment of war damaged cities may have been undesirable. There was a noticeable disappointment among the enthusiasts for garden cities and decentralization schemes, who had hoped that destruction would spur the decongestion of large cities and enhance planned improvements on a grand scale. because, as it turned out, destruction of homes did not remove the social and economic obstacles to far reaching changes in the cities' internal pattern." (1958: 222)

The fact is that there is a strong and seemingly universal desire on the part of residents of earthquake - impacted communities to re-establish the past. Their mental model for the reconstruction of the community is to restore. Those who have different images of their future, most of whom are outsiders, and experts, without much effort, evoke the hostility of the residents.

It would seem that those "social facts" set the parameters for any discussion of reconstruction. What is accomplished is the result of the dynamics of that image, not the status of landslide risks, land use changes or seismically safe construction. These social facts about recovery set the

general limits on the nature of our discussion of reconstruction. These social facts are not trivial, easily set aside by the marshalling of other technical and scientific evidence. They set the limits on the possible and on the direction of change. Let us turn more specifically to the Alaskan earthquake.

Anchorage - A Case Example

On March 27, 1964, the Alaskan Earthquake occurred. The epicenter of the quake was some 80 miles ESE of Anchorage and the shock was felt through a wide area, including seismic sea waves which did significant damage as far south as Crescent City, California. A number of Alaskan communities, such as Valdez, Seward, and Kodiak were affected and several coastal native villages were extensively damaged. The focus here, however, is upon Anchorage. As the principal and largest center of government in the state, although the capital was not located there, Anchorage was the largest city in the newly formed state, consisting of around 85,000 persons in 1964, about one third of the state's population.

The initial damage estimates done in April 1964 placed the overall state damages at \$620 million which later, in December, was reduced to \$335 million. By September 1966, actual Federal expenditures amounted to \$321 million. An estimated \$71 million damage was done to various Federal facilities in Alaska, primarily damage to the Alaskan Railroad and to Department of Defense installations, most in the Anchorage area. There were estimates of damage to state and local public facilities, initially set at \$226 million which were reduced to \$150 million by June. Sixty four percent of that damage was in the Anchorage area. Losses to the private sector was initially estimated between \$178 and \$257 million but an estimate in May reduced that to \$77 million. Of that estimate, over half of the figure (\$43 million) was attributable to Anchorage.

More accurate data is available with respect to residential housing. Within the city limits, units requiring sixty percent or more repair were considered totally destroyed or uneconomical to restore or unfit for occupancy for two years. Units below that percentage were considered restorable within one year. Of the 12,747 units within the city limits, 971 units were classified as heavily damaged. Of these damaged units, 489 were in apartment houses with more than 40 units each. Most of the 219 private homes destroyed were in the Turnagain area where higher priced housing was located. It was not surprising (Table II) that over three quarters of them were worth more than \$30,000 (1960 prices).

Primary damage in Anchorage resulted mainly from landslides. The damage was mostly concentrated in three primary areas; (1) Fourth Street on the north side of the downtown area where many small businesses, and commercial buildings were located along with an apartment building and some residences; (2) I Street which included a rather densely populated residential and commercial area, and (3) The Turnagain area, southwest of the downtown area which was primarily a middle and upper class residential area. This is where the major residential housing damage was done. There were other areas through Anchorage which were damaged but the three areas indicated are of primary interest here.

On April 3, the Anchorage City Council passed a resolution authorizing the preparation of an urban renewal feasibility study for the downtown covering the Fourth and L Street areas. On April 7th, a similar resolution initiated an urban renewal project for the Turnagain area. On April 25, a Scientific and Engineering Task Force was established to guide the final reconstruction decisions. That Task Force, over the summer, made a series of recommendations and its final report was issued in the form of a map providing a classification of seismic risk areas and recommendations of intensity of use.

What were the consequences of those plans and recommendations? Perhaps the prime consequence was to create community conflict. Since considerable damage had occurred in the central business district, many people saw the requirements as constituting the further destruction of the downtown area. Through public meetings, the area designated for redevelopment in the Fourth Street area was reduced to include only the area which was needed to buttress adjacent land to keep it from sliding in another earthquake. Weight and height building restrictions were established for this area. This is the only area in Anchorage where today there are "visible" mitigation consequences of reconstruction.

The L Street area, which was composed mostly of single family dwellings, was rezoned residential/office which caused increased density and use of this area. (Since there are no height restrictions, the assessed value today of over \$100 million reflects the value of new apartments and office buildings which have been built after the earthquake). No study to stabilize the slide area was made and the urban renewal project was abandoned.

Several methods of soil stabilization were tried in the Turnagain area but were not successful. In April 1966, the Corps of Engineers issued a report indicating that the slide created a natural buttress which would withstand a quake of similar intensity as the Good Friday one but should not be built upon. It also indicated that, back of the buttress, the land could be removed from the high risk category if design consideration took certain conditions into account. Many of the residents were offered exchange of land in a new subdivision but neither the state nor the city demanded title to the "damaged" land. The area remained rather dormant until 1975. Since that time, there have been efforts to re-subdivide the land and several houses have been built on the bluffs.

What is the current status of the "reconstruction" of Anchorage? Today, Anchorage is a large metropolitan city with a population about three times what it was at the time of the Good Friday earthquake. It is more diversified. While the government is still the largest employer, the private sector is increasing especially in the service area, and in businesses related to the oil industry.

In the areas most affected by the Good Friday earthquake, there are ambiguous indications of seismic considerations which guided the reconstruction process. The Fourth Street area, the smallest area of damage, is the only area which reflects some recognition of the earlier event. The area was buttressed and new construction has weight and height restrictions

but the actual area to which these restrictions apply is considerably smaller than the original recommendations. In the L Street area, zoning was changed from low density single family to commercial. Since that time, the area has experienced considerable multistory construction in the form of office buildings and apartments. By 1983, the assessed value of property owners had been able to exchange their damaged lots for property across towns although the state did not require them to surrender title. In 1978, the Anchorage Assembly rejected a proposal which would have forbidden future residential development in the area. Now in Turnagain, behind the bluff, developers are pushing ahead. In addition, the population growth has meant that new construction has been on land, in nearby hills, and on man made fill, and by method such as pilings, which were not "tested" by the Good Friday Earthquake. It would be difficult to conclude that the larger population now in Anchorage live in more earthquake resistant structures on land which has lowered seismic risk. Perhaps the major consequence is that now in Anchorage an "earthquake park" exists, but the earthquake might have been a very expensive way to create a park.

How Does One Explain The Outcome of The Reconstruction of Anchorage?

Let us suggest an interesting paradox. The Alaskan Earthquake was perhaps the most studied earthquake in human history. Eight volumes were produced by the National Academy of Sciences report - (Biology, Engineering, Geology, Human Ecology, Hydrology, Oceanography and Coastal Engineering, Seismology and Geodesy and the Summary and Recommendations which included a bibliography of some 500 items, which were estimated to be only one-third of the literature produced by 1973). Without discounting the basic scientific knowledge which resulted from such studies, there is very little in that research material which contribute to the understanding of how Anchorage evolved in the reconstruction process.

Certainly, there were Federal and State decisions to replace and rebuild barracks, railroads, ports etc. It is quite possible that improvements in seismic safety were included in these decisions, but the emphasis was on replacement and restoration, quickly before winter closed the building season. On the other hand, there was considerable talk in Anchorage immediately after the emergency period as to the opportunities which the earthquake presented for "urban renewal".

We would argue that the best predictor of the subsequent reconstruction was not found in the geology, the seismicity or the engineering dimensions of the area but by the social characteristics of the damaged areas--the characteristics and interests of the people who worked and lived in the areas of damage. The areas included were those where the most powerful and active people in Anchorage worked and lived and the interests of those people persisted over the "outside experts". At the time, business interests were concerned about the continuing viability of the central business district and the effect of the earthquake upon that future. To demonstrate their confidence, the board of the First National Bank, one week following the quake agreed to proceed with its planned building. About the same time, it was announced that construction would start on the \$1.75 million dollar Captain

Cook Hotel. Practically all of the damaged businesses and establishments restored or modernized within the year following the earthquake. The only exception was J.C. Penny's which delayed getting a permit until December, no doubt because the corporate decision was made elsewhere. The next year building activities continued at a high level, including three new retail stores and several storage tanks and warehouses. None of these were replacements but reflected an optimism that Anchorage should continue much like it had been developing prior to the earthquake.

The motives for quick building were no doubt mixed. In addition to providing a symbolic statement for the future, certainly these were economic motives to minimize business losses. Over 65 percent of all non-residential building permits during the year, were made in the second quarter. (The advisory plan from the Scientific and Engineering Panel was not made until the end of the third quarter in September). The ability to make quick decisions was facilitated by cheap money from the Small Business Administration. Dacy and Kunreuther indicate that there were 823 business loans, averaging almost \$93,000. A portion of these loans were undoubtedly devoted to "modernization" rather than to restoration. Previously planned improvements were implemented because cheaper interest rates were now available because of the earthquake.

The rebuilding of residences was slower for several reasons. At the time of the earthquake, there were 425 vacant units, although most of them were small and quite likely not attractive to middle and upper class renters. We know that most people, after disasters, depend on friends and relatives for temporary housing and there was an indeterminacy about the status of Turnagain for rebuilding. Residential permits peaked the third quarter of 1964. Dacy and Kunreuther indicated that, by the end of 1965, single and multi family dwellings had equaled the actual housing loss. Given construction time, they suggested that recovery in the residential sector was completed in two and a half years. (1969) Dacy and Kunreuther's careful analysis of loan policies suggest ways some of the "victims" were compensated. The Small Business Association for the first time allowed victims to borrow to retire a previous mortgage. (For example, suppose a person lost a recently purchased house with a mortgage of \$20,000. That person could borrow \$40,000, purchase a new \$20,000 house, pay off the old 20 year mortgage at 6 percent and replace it with a 3 percent 20 year mortgage. The owner's increased cost rose only \$25 a month.) Of the loans examined, over 60 percent of the applicants received money for debt repayment. This use of loans for debt repayment was more frequent than for the purchase of new property or for repairs. They estimated that over \$7 million dollars were loaned for that purpose. In addition, some 20 percent of the loans which were made for properties designated as high seismic risk areas. In addition, they argue that low interest rate loans and long term maturity loans provided considerable windfall gains to the borrower. They point out the maximum gains would be derived from those who owed the most money on the old mortgage.

The analysis suggest that those who lived in the Turnagain area, although they were mostly displaced, did not suffer significant economic losses. They were able to pay off the previous expensive mortgages at lower rates. They were provided new land by the state to construct new houses with cheaper mortgage rates. They did not have to surrender title to the older

property and many began to pay taxes on that abandoned land to reestablish ownership anticipating the future redevelopment. Of course, there were other costs to the earthquake and there were losers, although they are more difficult to identify. The course of reconstruction in Anchorage suggested that the direction it took was in accordance with reproducing the city in similar terms to the way that it existed prior to the quake. Plans for change and modification of the community which existed prior to the quake were implemented almost irrespective of the quake. Federal policy, more specifically that of the Small Business Association, were adapted to reinforce the needs and aspirations of the business community and the housing preferences of the upper and middle class. The scientific and technical studies which were generated by the earthquake provided more of an irritant than a directive to the reconstruction process. Anchorage is now a much larger, more complex, more diversified community where their current concerns are less with seismic issues than with the recent oil spill and the future of the oil industry.

Conclusions And Implications

What can one make of the Anchorage experience? One can always discount a case study as atypical, of course, but if it is considered in the context of other urban earthquakes and other knowledge, it can support certain persistent themes and generalizations. Before moving to those observations, let us make certain comments.

Our analysis of Anchorage is of course based on the social sciences. In many interdisciplinary conferences, the introduction of such analysis is often met with a reaction that such an analysis may be worthwhile but, in effect, irrelevant to "real" scientific problems that other areas are concerned with. Another common response is to confine the role of the social sciences to providing knowledge about how to get scientific knowledge accepted by "people", who do not realize how important that technical knowledge is to them. This is often phrased--We know what they should do. It is the role of the social sciences to convince "them". We would, of course, reject those visions of the role and importance of the social sciences.

We would argue that social science knowledge is the key to understanding, not a trivial appendage. To explain the reconstruction of Managua without understanding the Somoza government misses the major determinant in the outcome. To explain the reconstruction in the recent Mexico City earthquake requires knowledge of the political and administrative process which existed in Mexico at present. To explain the post impact recovery in the 1985 southern Italian earthquake without taking into account the Mafia and similar sociocultural influences, is to fail to take into account what is crucial. Similarly, to account for what happened in Anchorage requires some understanding of the social context and timing of the event, and the social structure of that city and its relationship to State and Federal political structure.

If we take social science knowledge seriously, it is quite possible that our hopes of what might be accomplished in the reconstruction period may be quite modest. But perhaps, if refocused, the hopes will be realistic and

achievable. Our comments here are not an argument against change or improvement but only a plea that reconstruction has to be seen as a social process, not simply the implementation of technical standards.

Finally, let us suggest certain "conclusions". The qualifying quotation marks are more a reflection of our modesty than they are an indication of our certainty. In any case, the conclusions could be treated as hypotheses which could be verified empirically in most major earthquake reconstruction situations.

1. The reconstruction and recovery process is always characterized by heightened social conflict. Such conflict has a firm social base and is not likely to be avoided or reduced by increased precision in our technical knowledge about earthquake effects. It reflects a clash of different interests.
2. Social processes after an earthquake will direct the reconstruction along patterns already present prior to the earthquake. Restoration effectively "satisfies" those processes.
3. The reproduction of past patterns is most certain when high status groups are adversely affected. (But see 5 below) "Success" in reconstruction usually is judged from the top down.
4. This means that the reconstruction process benefits most the socially powerful at the expense of the less powerful. The end result may be marked by references to what is good for the "community".
5. Members of the most powerful segment of the community may vary in terms of their social locations, status and class. The possible inconsistency among these variables means that there is not necessarily a unified view of that future. In fact, major conflict during the reconstruction period can develop among elites with different visions of the future - e.g. the retention of past cultural symbols vs. economic development.
6. Reconstruction always raises issues of equity. This delays the recovery process, since a community is always more than the sum of its buildings.
7. Reconstruction which requires the relocation of parts of the community, raises issues of equity in a quite visible way. Since relocation disrupts the community fabric, it delays recovery.
8. The longer the reconstruction process, the slower the recovery of the community, since recovery in other dimensions is also slowed.
9. Government policies reinforce the advantage of the most powerful in the reconstruction period. Since the more powerful are not unified, that means that governmental policies will be inconsistent.
10. Looked at in an international context, the opportunity for increasing seismic safety during reconstruction are greater in centralized societies.

Those gains are usually made in the face of increased resident hostility and lengthen the time of community recovery.

11. The opportunity for increasing seismic safety during reconstruction are quite limited in decentralized societies. This would seem to be especially true of residential and industrial reconstruction, and perhaps less so with respect to community facilities, such as schools.

12. Probably the most critical determinant of the nature and direction of reconstruction is the banking/financial sector and the relationship of those sectoral institutions to pre and post impact policies, of the central bank. In some societies, developers and others in the real estate area might have considerable influence.

13. Economic factors determine the nature and direction of reconstruction more than increased technical and engineering knowledge or by changes in construction standards and land use patterns. But the economic factors themselves are rooted in sociostructural factors such as norms, values and beliefs.

14. Any improvements in seismic safety during the reconstruction period will depend on their presence of such measures in the patterns of community planning prior to the earthquake. If post earthquake construction is guided by updated codes, the replacements would represent a gain in seismic safety without usually being identified as such.

15. There may be a small window of opportunity for increases in seismic safety, very early in the reconstruction period. Those openings are usually lost because of delays in collecting technical information. A useful research effort could be directed to understanding the few successful cases of change.

16. In the future, comprehensive reconstruction planning of earthquake damaged urban areas is not likely. Such planning has not been successful. In the past it has delayed recovery. It has been primarily attempted in centralized societies. In part, the current disintegration of those types of social systems may be partly as a consequence of such past efforts.

17. Since a totally seismically safe, rationally planned reconstructed community is not likely, it still might be possible to make modest incremental gains, especially through the use of economic controls. Grandiose plans for reconstruction may have to be confined to designing small memorial parks. Such memorials quite likely will facilitate the recovery process and, therefore, are a useful social innovation.

18. Perhaps we might make our greatest gains in some developing countries. That does not mean that issues of equity are not important in such countries or that there the powerful would not win. But in many of those countries, earthquake victims are difficult to identify from the "normal" victims. Our efforts to increase seismic safety might produce some marginal increase in the general standard of living, even for those who continue to live in high risk areas. We could take credit for that.

19. Actually, as said earlier, there is likely to be greater payoff by focusing on the pre rather than the post impact period. Thus, improvements are most likely if they are introduced into the development planning of a society, prior to any earthquake.

In conclusion, and more important, we have tried to suggest that any discussion of reconstruction must start with the right approach. This approach in our view requires recognizing that reconstruction is part of the more general process of recovery from disaster. In turn, how recovery proceeds is rooted in the very social structure and fabric of the impacted society. Put another way, reconstruction is less a technical issue than it is a social matter. Reconstruction only partly involves bricks and land use codes, it mostly concerns social values and group interests.

TABLE I

Earthquake Damage to Anchorage Residential Housing

Units	Percentage Damaged
921	80 - 100
50	60 - 80
26	40 - 60
35	20 - 40
11,715	0 - 20

Source: Anchorage City Planning Commission
land-use maps

@Housing includes 518 trailers, only 5 of which
were severely damaged.

TABLE II

Distribution, by Value, of Private Homes Destroyed
in Anchorage

Value of Home, in Dollars (1960 Census Figures)	Percentage of All Homes Destroyed
Under 15,000	2.3
15,000 - 19,999	3.8
20,000 - 24,999	5.0
25,000 - 29,999	12.3
30,000 - 34,999	58.6
35,000 - 39,999	13.8
40,000 and over	4.2
	100.0

Source: Federal Housing Administration

Adapted from Howard Kunreuther, "Statistical Studies of the Postdisaster Period," Appendix B in Committee on the Alaskan Earthquake of the National Research Council, The Great Alaska Earthquake of 1964. Human Ecology Volume. Washington, D.C.: National Academy of Sciences, 1970: 425-450.

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