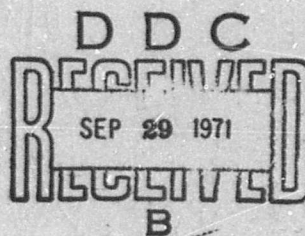


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**A STUDY OF CONSENSUS  
ON PSYCHOLOGICAL FACTORS RELATED TO RECOVERY  
FROM NUCLEAR ATTACK**

**Bruce C. Allnutt**

**May 1971**



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A study of the agreement that exists among experts about the probable social and psychological consequences of nuclear war, and the impact of such factors on the process of national recovery. The research method involved the interrogation of a panel of cognizant government officials, military officers, and research scientists, using a variation of the iterative Delphi procedure.

Very generally, the panel was in agreement that, while the variety of individual and group behaviors could be expected to increase, the incidence of adaptive behavior would likely outweigh that of maladaptive behavior. However a very strong tendency for social systems to fragment into small, local, short-sighted, and self-interested groups was predicted.

A diverse set of projections are presented and discussed in depth by the panelists, and estimations of the effects of social and psychological factors on such numerical variables as the postattack availability of labor are given. ( ) ←

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A STUDY OF CONSENSUS ON  
SOCIAL AND PSYCHOLOGICAL FACTORS RELATED TO  
RECOVERY FROM NUCLEAR ATTACK

SUMMARY

This report is on a study of the agreement that exists about the probable social and psychological consequences of nuclear war and the impact of such factors on the process of national recovery. In a sense, the study is a response to the frequent criticism of studies of national recovery from nuclear attack for failing to take social and psychological factors into account. The study sought to determine more precisely what this criticism means in detail and, where feasible, to specify social and psychological factors in a form appropriate for input to post-attack systems studies. In the course of the study, a selected panel of those closely involved with the field--scientists who have been involved in disaster or post-attack research, federal officials in agencies dealing with civil defense and emergency preparedness, and military officers whose responsibilities include planning for the nuclear war contingency--were asked for their projections about the state of society during a postattack period. Then, using a modification of the Delphi technique, the panelists considered and evaluated the total set of projections, thereby producing a list of those social and psychological factors considered critical to recovery from nuclear attack. In addition, an attempt was made to quantify the effects of these factors on such variables as the postattack availability of labor, and countermeasures to reduce dysfunctional effects were recommended.

Very generally, the panel was in agreement that, while the variety of behavior exhibited by individuals and groups could be expected to increase after a nuclear attack, the incidence of positive, adaptive social behavior would be likely to outweigh the incidence of negative, maladaptive antisocial behavior. In other words, even though one could expect an increase in looting, conflict, apathy, aggression, and so on, the impact of these negative factors would be greatly mitigated by a concurrent increase in cooperativeness, community spirit, altruism,

and motivation to aid in the process of rebuilding the nation. Simple fear emerged as the greatest psychological barrier to recovery, and communications appeared to be the key to penetrating that barrier, since the immense needs for leadership, information, reassurance, and instruction would all be dependent on the ability of the government to communicate with its surviving constituents.

The panelists also generally agreed that a sharp narrowing of focus would be a common reaction, with survivors tending to be preoccupied with their own families and localities at the expense of the larger society, and with the present at the expense of the future. Though most panelists foresaw serious problems arising from the conflict between local and small group needs and the needs of larger segments of society, with locally or temporarily beneficial actions being dysfunctional on the larger scale, there was a strong minority position that decentralization and fragmentation would be the proper response, and that what is good for the parts would eventually be good for the whole.

These two themes--the positive predominating over the negative, and the temporary fragmentation of society into small, self-interested groups--pervade the results, as does the dispute as to whether the latter factor would aid or hinder national recovery.

The more specific findings can be listed rather briefly, though the reader is recommended to refer to appropriate sections of the report itself before inferring too much from this very short summary.

In general, the panel considered aberrant behavior, both individual and group, as a relatively insignificant (though not nonexistent) consequence of nuclear war. Thus, such individual reactions as panic, shock, grief, apathy, fatalism, and despair, and such group reactions as rioting, rebellion, mass psychosis, intergroup violence, and anarchy would occur on a minor scale or would not present extremely serious impediments to national recovery. All such reactions would certainly occur, the panel agreed, but their extent would be limited and their overall impact small.

On the other hand, most panelists agreed that group membership would increase as survivors responded to urgent needs with cooperation and to uncertainty with a desire to contribute to goal-oriented work. Similarly, innovation

would increase, as would energy and motivation, in reaction to individuals and localities being cast back upon their own resources.

Major institutions and organizations were seen as fragmenting in most cases and collapsing in others, but the seriousness of this result would be relieved somewhat by the irrelevancy of many of them to the early stages of recovery, and by the ability of social structure to spring back into action when physical conditions permit. The federal government would make serious mistakes and suffer a loss of power and prestige, but not a loss of faith so serious as to favor the possibility of revolt. Financial institutions would be modified greatly, and barter would be a widespread reaction to inflation, but money was not seen as going out of style, nor was a barter economy foreseen. Legal, judicial, and enforcement systems would similarly undergo great strains, being overwhelmed entirely in some areas, but again, due process, though delayed, would not be lost in principle. Industries and commercial organizations were expected to fragment into autonomous, local entities until communications and transportation systems were repaired, but the goals of such corporations would not be greatly changed.

Though the panel predicted that most survivors would place the blame for their suffering on the enemy, the smaller number who would blame the federal government could be expected to have as great an impact as the majority, for such blame would result in reluctance to participate in government programs without first seriously questioning both the objectives and the means. Such blame, however, was seen more as leading to diminished credibility than to revolution. Panelists generally predicted that the desire for peace would greatly outweigh that for revenge against the enemy, but they also agreed that the war would not likely end with the first exchange of missiles.

Most panelists did predict an increase in conflict between sections of the country, between advocates of varying war policies, and between urban and rural populations; and also that such conflict would pose serious problems--though a minority opinion disagreed with this position--and many predicted racial or class conflict as well. Such conflict, most panelists noted, as well as that between families and other small-groups, would necessitate the imposition of martial law

or other authoritarian systems in many localities, and the widespread use of troops to maintain order, and many panelists attributed high importance to the proper administration of such emergency measures, since overreaction would lead to resistance.

Religion was seen as irrelevant, save for the solace it might provide, and very few fundamental changes in national character or values were predicted, most panelists agreeing that there would be a strong desire to return to preattack standards and ways of life.

Very generally, the panel seemed confident that the nation would survive an attack resulting in up to something like 70 percent casualties, but many respondents had serious doubts beyond that level.

Among the most significant results are quantitative estimates of the impact of such social and psychological factors on the availability and efficiency of the surviving labor force. Though the extent of consensus diminished with the attempt to quantify effects, the results indicate, for example, that, one month after the attack, less than half of the potential labor force could be expected to work without immediately beneficial compensation, and that, of these, one in five would be able to function only at a level greatly degraded from his normal abilities.

The reader is reminded that the above generalities are intended merely to provide an introductory overview of the findings, and that specific results should be pursued through the text of this report, so that important sidelights and comments may be considered in greater detail. Topical areas are clearly marked in the report to facilitate this pursuit.

A STUDY OF CONSENSUS ON  
SOCIAL AND PSYCHOLOGICAL FACTORS RELATED TO  
RECOVERY FROM NUCLEAR ATTACK

CHAPTER I  
RATIONALE FOR THE STUDY

A. The Problem

Since the advent of nuclear weaponry, the likely effect of a full-scale nuclear attack has been a continuing subject of speculation and study. The entire literature on nuclear weapons effects has been created during the past twenty-five years. In the early part of this period, concern tended to focus primarily on determining the effects of blast, radiation, and fire. Initially, such questions were asked as: How do overpressures affect buildings? How do radioactive particles distribute themselves? What dose rates produce what effects on plants and animals? In the main, the concern was with producing data on physical weapons effects. In this early period, only the novelists considered what have come to be called "social and psychological effects" which would result from a massive attack by nuclear weapons. Only in the past ten to fifteen years has there been any effort at all to systematically study the likely social and psychological effects of nuclear attack and to understand what would happen to a total functioning social system subjected to massive nuclear attack.

Some research has been done on these effects--although relatively little compared with the amount of work done on physical effects--but the results, for the most part, have not been taken into account or used as inputs in civil defense exercises, systems analyses and systems evaluations. This fact has led to frequent questioning of the results of those studies which omit consideration of social and psychological factors. Obviously, if the incorporation of social and psychological factors produced real differences in the outcomes of these analyses, this would have meaningful practical significance for civil defense planning. The basic problem, therefore, is to identify what these social and psychological factors might be, how they would affect the outcomes of system studies, and the practical consequences of such effects.

One of the major deterrents to using the knowledge that does exist in this area is that it is seldom expressed in a form which permits ready quantification, and subsequent integration with physical and economic factors. Another deterrent is simply the fact that the findings of these studies are not subject to direct, empirical verification. They are necessarily extrapolations of data from situations other than massive nuclear attack. For that reason, it is easy for any proposition to be disputed or disregarded by an analyst if its import should be unacceptable or inconvenient to him. The question this study addressed is not so much whether the whole issue of social and psychological factors can be definitively resolved, but rather, whether a substantial and useful advance can be made.

### B. Research Approach

One approach to this problem would be to have someone review the available literature once again, with the objective of identifying pertinent social and psychological factors, assessing the evidence for them, and indicating the ways in which these factors would be important to civil defense planning and recovery management. However, this has been done already, several times and in a variety of ways, and still the base problems remain. It is difficult to see how repeating this approach once more would lead to a useful advance.

To our knowledge, however, no previous study has been focused directly on the question of how much agreement exists among experts in the field--among the scientists who have made the studies, and the government officials and military officers who administer the research, create programs for the nuclear war contingency, and command the operational end of the business. Frequently, it is a question of everyone agreeing that something important exists, but no one being aware of how his own understanding of it is similar to or different from the understanding of his colleagues. Because of this uncertainty, and because of the increasingly apparent need for agreed-upon quantifications of social and psychological effects for application in the planning process, the present study was designed more to determine the consensus that exists about these phenomena, than to increase our knowledge of the phenomena themselves.

In considering the alternative approaches toward a study of consensus, the Delphi method naturally suggests itself, since Delphi is itself a technique often used for formulating group decisions.<sup>1</sup> Perhaps it would be possible to form a panel of people who are knowledgeable in this general area, and to have them pool their knowledge of social and psychological factors through some form of Delphi procedure. Such a process would allow us to determine the extent to which panel members agree about the importance and recovery implications of different factors, and thus to explore the full meaning of the common general criticism that games and systems studies fail to take such factors into account.

It was decided, therefore, that there was sufficient reason to examine the feasibility of an application of the Delphi method to this problem area. The ultimate goal, of course, was to develop improved data on social and psychological factors which could be used as inputs to studies of the effects of hypothetical nuclear attacks. The procedure by which this was to be accomplished, however, would identify not only those factors on which there was strong agreement--some of which might be quantified, and all of which should be considered in planning--but also those factors on which there are two schools of thought or no consensus at all. These latter factors can then be used to identify areas where more research is needed.

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<sup>1</sup>For a concise description of the Delphi method, see "A Review of the Development and Application of the Delphi method," which appears in Appendix A, pp. A-13 to A-24.

## CHAPTER II

### OVERVIEW OF THE DATA-GATHERING PROCESS

#### A. The Plan

The primary aim of the study being to investigate the types and amounts of consensus that exist among experts on the critical social and psychological consequences of nuclear war, the study plan was a fairly obvious one: First, select a group of individuals highly familiar with civil defense issues; second, question them about which social and psychological factors they consider to be important; and third, compare their responses one with the other. The actual implementation of such a plan, however, involves a number of fairly subtle considerations, and since the approach finally taken was unique in several ways, it will be worthwhile to cover the design of the study in some detail.

The first set of considerations surrounded the selection of "experts." Expertise is difficult to define precisely in any field, and here the difficulty is compounded by the fact that long-term familiarity with civil defense is not necessarily the only criterion of great relevance. A number of people with diverse backgrounds and roles participate in the process of preparing the nation for the possibility of nuclear war. Because of this, the panel chosen included a somewhat broader range of individuals than would have resulted from a simple selection of postattack research scientists.

The second set of considerations had to do with the actual instruments used to probe the opinions and judgments of the panel. The selection of a modified Delphi technique was beneficial on the one hand because it allowed the widest possible expressions of individual judgment with a minimum of bias being introduced by the investigators, and on the other because it allowed the panel itself to design the experiment and analyze its results to a large extent. This method, being itself rather experimental, was sufficiently flexible that we could fit the method to the exigencies of the study.

## B. Selection of Panelists

It was apparent from the beginning that to study the meaningful agreement existent about the social and psychological factors crucial to national recovery, a simple interrogation of renowned research scientists would not be adequate. For, even though it may be that those who perform postattack or disaster research are the ones to formulate social and psychological theory and to make observations and recommendations on the basis of their investigations, the transformation of research findings into specific plans and programs is in the domain of those officials and commanders responsible for preparing the nation's reaction to the possibility of nuclear war. In addition, it is these people who also to some extent pre-structure those findings by requesting specific pieces of research and designing research programs. Thus, not only is the feedback system of on-going research influenced by a number of individuals in diverse roles, but the practical application of the research (which is what is relevant in the final analysis) is created on the basis of interpretations not only by the scientific community, but by those administrative officials and planning officers whose role it is to translate theory into action.

Because of this interrelationship, it was decided to select a panel consisting of three types of respondents in roughly equal numbers--private citizens who have been involved in postattack or disaster research (primarily social scientists),<sup>2</sup> government officials at the highest accessible level in agencies tasked with civil defense and emergency planning responsibilities, and military staff officers with assignments which include planning for the nuclear war contingency.

The size of the panel was another consideration of some delicacy. Because of the tendency for Delphi questionnaires to expand very rapidly, it was clear that the use of too large a sample would entail the collection and analysis of an unmanageable amount of data; on the other hand, too small a sample would preclude any comparisons between classes of respondents. As a compromise, it was

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<sup>2</sup>Since all but one of the panelists in the category has a scientific doctorate, we shall refer to them all as "scientists" for convenience--though not all are currently engaged in strictly scientific pursuits, and one is an attorney.

decided to keep the size of the panel around thirty. Thus, we traded off the possibility of complex statistical analysis of the results--one will not see any tests of significance in this report--in favor of maintaining an ability to probe more deeply into interesting questions. Statistical analyses might have been misleading anyway, since our sample was necessarily biased in several important ways, as will be evident in the description given below. A conscious attempt was made, however, not to pick a panel completely homogeneous with regard to their attitudes toward nuclear warfare and civil defense issues.

The three groups were selected with the assistance of cognizant officials at the Offices of Civil Defense and Emergency Preparedness, and with members of the PONAAT Production Committee of the Joint Chiefs of Staff. The size and composition of the panel varied from time to time during the course of the study, but the analysis presented in this report is of the responses of the thirty panelists who participated in the last two rounds.

### C. Development of the Data Collection Instruments

The method chosen to tap the knowledge and opinions of the panel on the social and psychological consequences of nuclear war was a modification of the Delphi technique. This method, first developed almost twenty years ago by Olaf Helmer and his colleagues, involves a series of questionnaires, each round being supplemented by feedback of information derived from the preceding round. By thus inserting the medium of the questionnaire between the discussants, many of the drawbacks inherent to debate or committee activity are alleviated. The discovery which prompted the new technique, in fact, was that a simple average of individual opinions, without discussion, tends to be more accurate than group opinion reached by discussion. The method itself and its historical development are discussed in some detail in the paper appended to our own first questionnaire (See Appendix A), so we will not go into the technique itself at this point, beyond pointing out some of the obvious advantages of it for this type of study.

Since our objective here was primarily to explore and map the consensus that exists between people working in a given field, the Delphi method was a logical

choice, since the use of an iterative series of interrogations allows the respondents to consider the arguments of those holding other opinions at leisure, and to modify their own responses without the often difficult necessity of abandoning publicly-stated positions, or publicly disputing the opinions of friends or respected colleagues, and with little likelihood of being swayed by some particularly persuasive or charismatic speaker. Thus, we have the advantages of continued debate without many of its drawbacks. The method is not only good for uncovering previously undiscernable agreement, but occasionally it can even facilitate the growth of new agreement where none had existed previously. There are of course other advantages, and a few drawbacks--the reader is referred again to Appendix A for further discussion.

In the present study, there was only time for three rounds of questionnaires, which, because of the unique characteristics of the first round, amounted to only one iteration. The first questionnaire was essentially a fishing expedition, designed to catch the widest possible variety of basic data for refinement and evaluation in succeeding rounds. These second and third rounds, then, formed the Delphi series, in which the panelists considered and reconsidered the concepts they held in relation to the concepts held by their colleagues.

### 1. The Round One Questionnaire

In order to minimize our effects on the panel, it was decided to allow the panel itself to design the instrument to be iterated. Toward this end, the first questionnaire consisted essentially of only one question, a question designed to capture the complete range of considerations held by the various respondents on the subject at hand--the effects of nuclear war on individuals and society.

Of course, one question in a vacuum would not have been very meaningful, so the stage had to be set extensively. Thus, the "First Round Data Collection Package" (Cf: Appendix A) consisted of several parts. First, was a brief explanation of the procedure we intended to use during the course of the study, kept brief by referring to the more extensive paper dealing with the Delphi method itself, which was appended to the first round.

Second was the scenario, a description of a specific series of events postulated to have occurred, leading to a specific nuclear exchange, presented in order that all respondents might begin on a common set of assumptions. This scenario had to be designed with some care, so that it would be both reasonable (in that it might be believable), and relevant to current and projected future studies. The time frame, for example, was chosen to be the near future, so that no panelists' assumptions about intervening developments might interfere; but not the immediate future, so that transitory preoccupations panelists might have about current events might not interfere. Likewise, the antagonist was chosen to be the Soviet Union, not only because the Soviet Union is the only power currently capable of launching a barrage of the size contemplated, but also to minimize any political objections to the likelihood of such a development. The pattern and size of the attack was chosen to correspond to the sort of studies currently being undertaken in various branches of the government, and the resulting damage assessments and casualty rates were derived from consideration of earlier studies (notably UNCLEX-66). On the other hand, as far as possible, no assumptions were included that directly described the social or psychological state of the nation; thus, for example, public reactions to the preattack rise in international tensions were not described, nor were such possible accompaniments to the scenario as spontaneous preattack evacuation of cities, nor anything about postattack reactions.

The questionnaire itself, then, asked the panelists to:

Assume that the attack described in the scenario has occurred and assume that an effort will be made by the government to initiate and facilitate nationwide recovery activities.

Then came the question itself:

What social and psychological factors do you think would significantly influence the behavior of people in the postattack situation? For each factor you identify, please indicate what positive or negative effects that factor is likely to have on recovery activities.

Following this question was a page elaborating briefly on what was meant by such terms as "social and psychological factors," "effects," and "recovery activities."

Such terms, however, were defined as broadly as possible, once again to put the minimal number of constraints on the panelists' perceptions and categories of thought.

## 2. The Round Two Questionnaire

The response to the first round was actually astonishing to us. Though eight potential panelists sent their regrets that they were unable to participate and an equal number did not respond at all,<sup>3</sup> the twenty-six who did respond (and the six who participated in the pretest--a total of 32 panelists) submitted over two hundred pages of narrative, describing in great profusion and detail their projections about the nuclear war contingency. We will not discuss this testimony in detail, since the primary purpose of it was to generate the second questionnaire, which, because of its origin, is itself a sort of summary of the round one results.

The heart of the Second Round Questionnaire (which is also reprinted in Appendix A) consisted of one hundred statements, each one of which was made by one or more panelists in response to the first round. Each statement was in the subjunctive mode, and said something about how at least one panelist foresaw the postattack society; i. e., each statement was descriptive of a social or psychological consequence of nuclear war, as described by at least one panelist. The statements were very nearly verbatim, having been edited only enough to shape them into a common format, and to remove all quantifiers (which might indicate how important or extensive the panelist had expected the described phenomenon to be).

Each panelist was asked to read each of the hundred statements and evaluate it in each of three ways:

First, as to whether he agreed with the statement--i. e., whether he thought that the statement was a true description of something that would actually happen in the postattack world.

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<sup>3</sup>Herein lies our greatest source of unknown bias--one can only wonder why each of these eight never answered our letter--was it lack of time, disinterest in the study, forgetfulness, disgust with the concept, or, if several of these reasons, which, in what proportions?

Second, as to how extensive he would expect the described effect to be (assuming he agreed with it); i. e., how widespread the phenomenon mentioned in the statement might be.

Third, as to how important he would expect it to be with regard to the national recovery effort; i. e., whether the described effect would have a great impact on the prospects for survival as a nation.

Of course, if the panelist disagreed with a statement entirely, he did not have to consider the second two types of evaluation. Each evaluation was made by simply circling the appropriate descriptor--that is, agreement was indicated by marking Yes or No; projected extent was indicated by circling Large, Moderate, or Minor; and the importance attributed to a statement was indicated by marking High, Some, or Low.

In addition, a number of questions which panelists had raised in the First Round, and which were not translatable into the format of the hundred statements, were asked in checklist or multiple choice form; another section considered a set of independent variables which some respondents had felt should have been included in our scenario; and another section asked for some biographical data--age, education, experience, and so forth.

Finally, one section of the questionnaire asked the panelists to consider what effects the total set of social and psychological factors under consideration would have on one crucial recovery resource--the postattack labor force. As the prologue to the section described,

It is a relatively straightforward matter to calculate the size of the surviving physically healthy labor force at any given time after any given attack, and this may be further modified by considering other strictly physical factors--such as the availability of adequate diet, the presence of ill or injured family members requiring intensive care, and so on. What has not been so straightforward has been the further modification of this number from the influence of the numerous psychological/social factors under consideration here.

Panelists, then, were asked to estimate these further modifications on the size of the postattack labor force from psycho-social breakdown, from the felt need to

independently sustain one's self and family, from participation in anti-government activities, and from constraints about the type of recompense desired for one's labors. Further, the panelists were requested to estimate the effects of the war on the efficiency of the employed labor force.

Despite the complexity of the Round Two instrument, most of the panelists responded promptly and carefully, the only complaints being about the "absurdity" of some of the questions. Of course, it was not our place to rule on whether a particular question was absurd or not, but rather to feed back, in as mechanical and unevaluative manner as possible, whatever the panel submitted.

### 3. The Round Three Questionnaire

The third questionnaire was essentially a straightforward iteration of the second, though with several additions. One was an appended, narrative discussion of the results of Round Two as discovered by a first-slice analysis; and a second addition was three paragraphs tacked on to the end of the scenario, covering some of the "independent variables" which the panel had thought important. Also, a number of panelists had suggested questions which they, themselves, would like to have seen asked, and these were added to a final section.

But the heart of the questionnaire, once again, consisted of the hundred statements, repeated without alteration (despite a great desire to correct a couple of inadvertent omissions which had been discovered in the interim). The only change in that section was to add the results of the Second Round, by placing numbers beside the alternative responses indicating how many Second-Round respondents had answered in each of the possible ways. In addition, each individual questionnaire was marked with that panelist's own original answers, to refresh his memory and allow him to compare his original response with the responses of his colleagues on the panel. After thus comparing his own opinion with the opinions of the entire panel, he could reconsider his original response, and change it if he desired.

In order to increase our ability to follow this procedure, as well as to encourage serious reconsideration, each statement on which a given panelist had expressed a minority position (as defined in the questionnaire--see Appendix A) was circled in red. Also, six statements felt to be of general interest were red-circled on all questionnaires. On these specifically earmarked statements, panelists were asked to give a brief, narrative explanation of their position, whether or not they changed it. This request, which we feared might overburden the panelists, generated some of the most valuable data gathered, and great use of these explanations is made in the discussion of results to be found in the next chapter.

Finally, all the questions which asked for numerical estimations were iterated in classical Delphic procedure--the questions were repeated, the medians and interquartile ranges (IQR) resulting from the Second Round were printed, the panelist's own original estimation was written in, and he was asked to reconsider the question in its entirety, defending any estimations he might make which fell outside the IQR.

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## CHAPTER III

### FINDINGS AND DISCUSSION

In this chapter, the results of the administration of the series of questionnaires will be presented and discussed in great detail. The actual numerical results--frequency counts and so on--are presented in concise form in Appendix B to this report, so that the reader may have ready reference for comparisons, while more elaborate narrative descriptions are given below. Since these discussions tend to be quite lengthy, the reader may wish to scan the table of contents or the list of statements presented on pages 27 through 33 in order to locate items of particular interest, and then turn to the pages that discuss that particular topic in detail. Subject titles are printed in the upper corners of the pages to facilitate such searches for areas of individual interest.

Those determined to read the discussion through from one end to the other, however, will not be unrewarded. First, they will find a brief summary of the biographical data collected on the panelists, so that the judgments presented may be related to the types of individuals who made them. Following this is the heart of the findings--a discussion which considers and compares the panel's responses to the hundred statements about the postattack world which were submitted to them twice for their evaluation. The statements are grouped by topic into eighteen sets, covering such areas of special interest as economics, group behavior, religion and morality, and so forth. Following this, one will find additional consideration of those statements on which the panel was divided into opposing positions, and those on which no agreement at all was discovered.

The remaining two parts of this chapter deal with the quantitative estimates made by the panel, and with the panel's responses to other questions of interest which were asked during the course of the study.

### A. Comments on the Analysis of the Results

Generally speaking, the analysis that produced the following discussion presented no problems that are not common to the analysis of any questionnaire anywhere, and such problems are mentioned wherever their impact is felt in the course of the discussion. However, a few cautions are in order before the reader begins to interpret the data for himself.

First and foremost among these is that it must be remembered that we are considering here not necessarily what would happen in such a nuclear war, but rather what the panelists believe would happen, on the basis of their studies, experience, and general backgrounds and viewpoints. This is a very important distinction; one that cannot be overemphasized. In our hurry to produce this report, we cannot be sure that some sentence, somewhere in this volume, if taken out of context, might not look as if we are stating some fact about the future. Nothing in this report should be so construed. What we are stating, in each case, is what one panel of selected experts in the field (or some segment of it) has projected about the probable consequences of a particular hypothetical nuclear exchange.

Though the resulting data may be the best yet developed in that it represents the combined thinking of a variety of those closely concerned with the subject, none of it can be taken as the final word, and great care should be taken by anyone wishing either to apply the results or extrapolate them to other hypothetical situations. So the reader is requested to maintain a healthy skepticism throughout this report, holding cognizant the reservation that even learned opinions and "best estimates," though indispensable to practical application, may always be as grossly in error as any random guess.

In addition to this very pervasive and general caution are a number of more limited and specific comments on the data which should be made. In particular, the reader should bear in mind the great part played by semantics in any form of debate, including the one presented here. Individuals from different backgrounds always respond to questions on the basis of their own, individual definitions of critical terms, and with the variety of respondents participating in this study,

differences between such definitions may be expected to be large. On the one hand, all the evaluations performed were made using each panelist's own subjective definitions of such terms as "High" importance or "Minor" extent, and it is clear that a great deal of overlap exists between such subjective appraisals. Even the same individual, responding to the same statement at two different times, may rate it as being of "High" importance one time and of "Some" importance the next. Fortunately, however, there is little if any overlap between evaluations as widely spread as "High" and "Low," so the conclusion to be drawn from this is that little significance can be attached to apparent differences of opinion unless they are quite large.

On the other hand, some apparently significant differences of opinion seem to have resulted simply from two groups of respondents basing their evaluations on different interpretations of the statement being evaluated. Many such apparent disagreements were discovered to be nonexistent when reference was made to the various comments panelists made in explanation of their responses. However, a degree of uncertainty remains, since one has no way at this point of determining whether other disagreements were also only apparent, the semantic problem having gone undetected.

It is likely that such problems have had only a minor impact on the analysis that follows, and that our cautions have been overstressed. But it is never foolish for the reader of a report such as this to proceed carefully, examining each statement skeptically, and comparing numerical results with the comments and discussion surrounding them. To aid in this effort, the data have been presented in as raw a form as was feasible, and very extensive use has been made of the marginal comments made by the respondents themselves.

Now let us look at who those respondents were, so we shall know whose are the opinions that we are discussing.

## B. Biographic Description of the Panelists

The final panel consisted of thirty men, ranging in age from 33 to 67 (median age = 46), whose experience in dealing with nuclear attack effects ranged from less than one year up to twenty-five years (median experience was five years). Fourteen had acquired doctorates, six had masters, eight had bachelor's degrees, and two others had no higher education. The fields of study represented were quite diverse-- psychology, sociology, economics, engineering, chemistry, education, mathematics, physics, geodetic science, management science, history, journalism, political science, and law, to name just a few. The proportions in various disciplines, as represented by the highest degree in each case, were as follows:

- 17 social or behavioral science<sup>4</sup>
- 6 physical science (including engineering)
- 5 economics
- 2 no degree.

About half the panel reported their current occupations as entailing primarily managerial/operational functions, the remainder being divided fairly equally between those in primarily professorial and primarily research roles.

Considering the three classes of respondents, there were eleven government officials, eleven non-government scientists, and eight military officers. Of the latter, four were with the Air Force, two with the Marine Corps, and one each in the Army and Navy. Six of the eight were Lieutenant Colonels, and there was one full Colonel and one Navy Captain. Their assignments included staff positions at CINCLANT, CINCPAC, USEUCOM, SAC, DSIC and JCS, for example, and most described their roles as having to do with planning.

The non-government scientists, ten of whom had doctorate degrees, were in professional roles ranging from full professors, to directors of research laboratories, to one practicing attorney.

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<sup>4</sup>Very broadly defined, to include such fields as law, journalism, industrial management, etc.

Government officials described their positions as Deputy Assistant Directors, Division Chiefs, and Research Analysts, to cite a few, and were drawn from the OCD, OEP, NAS, and CIA.

Slightly fewer than half of the panelists reported having had "personal experience with major disaster"; that is, having been in "a situation involving widespread damage and numerous casualties." Of the experiences reported, half were war-related, and half were natural disasters or major accidents. The nongovernment scientists had the least personal experience--only two of the eleven reported having been in such situations--while the military panelists were most experienced, two having war-related experience and two having experienced natural disasters.

All panelists were requested to evaluate their own expertise in two areas, the physical and the socio-psychological effects of nuclear attack. Half of the respondents rated themselves as being "much more well informed than most people" on the physical effects, and about a third rated themselves as being "probably somewhat more informed than most people." The remainder rated themselves "about average," and no one considered himself to be "less well informed than most people." The patterns of self-rating were about the same for all three subgroups of respondents, except for slightly lower ratings by nongovernment panelists (see Table 1).

When evaluating their own expertise with regard to the social and psychological effects, however, there were great differences. Among government officials and military panelists, no one thought himself to be better informed on the social and psychological effects than on the physical effects. Self-evaluations among the nongovernment scientists, however, formed the reverse pattern--no one thought he was better informed on the physical than on the social and psychological effects. And, in fact, this latter group evaluated itself as being much more "expert" than did the former two groups--eight of them thought they were "much more well informed than most people," while only two of the government and military panelists rated themselves so highly. Military respondents ranked themselves lowest on topic, half describing their knowledge as being "about average."

Thus, it turns out that if one wishes to consider separately the responses of those panelists who rank themselves highest in expertise (such subsets have

Table 1.

Self-Evaluations, Education, Age, and Experience of  
Panelists by Occupation

<u>Self-Ratings</u>		<u>Government</u> (n=11)	<u>Nongovernment</u> (n=11)	<u>Military</u> (n=8)	<u>Total</u> (n=30)
Expertise on Physical Effects	Much more well-informed than most	6	4	4	14
	Somewhat more well-informed than most	1	5	3	9
	About average	2	1	1	9
	Less well-informed than most	0	0	0	0
	No response	2	1	0	3
Expertise on Socio- Psychological Effects	Much more well-informed than most	2	8	0	10
	Somewhat more well-informed than most	4	2	4	10
	About average	3	0	4	7
	Less well-informed than most	0	0	0	0
	No response	2	1	0	3
Higher Education	Doctorate	4	10	0	14
	Some Graduate Work	4	0	2	6
	Bachelor's Degree	3	1	4	8
	No Degree	0	0	2	2
	Median age	46	45	44	46
	Median experience in civil defense	15	5	1	5

often been shown to provide "more reliable" forecasts in other predictive studies), then one need only consider the responses of the nongovernment segment of the panel for social or psychological questions.

As a measure of how familiar respondents were with the literature of the field, each panelist was asked to list the first three books he would recommend in "introducing a colleague to the postattack research field, or briefing him on what research and study has been done. The responses to this request produced a very extensive and interesting bibliography, even though nine panelists failed to list any at all, and several others were unable to think of three. Of those responding, however, the most commonly-cited works were Herman Kahn's first two books, PONASt I, the Project Harbor reports, and the various HSR reports by Nordlie and Vestermark.

One further characteristic of the respondents should not be ignored--they are apparently a very generous and patient group of victims. During the course of their participation in this study, they (voluntarily and without recompense) plowed through over eighty pages of often complicated and sometimes infuriatingly contradictory questionnaires and explanatory matter, and spent hours trying to answer questions on what were frequently almost imponderable topics. Of the nearly fifty potential panelists whom we first invited to participate, and of the thirty-four who participated actively at one time or another during the course of the study, twenty-nine stuck with us right through to the very end, sending us data in unexpectedly voluminous quantities. Thus, it is clear that we have, not a random sample by any means, but rather a select group of very cooperative individuals. We hope they will not be disappointed with these fruits of their labor.

### Part C. The Hundred Statements

As mentioned above, the heart of the Second- and Third-Round Questionnaires consisted of one hundred statements, each describing an aspect of the postattack world, and each of which was evaluated (and re-evaluated) by the panelists in terms of how widespread the described phenomenon would be (extent) and how significant it would be to national recovery (importance).

Since this means that there were eleven different possible ways each statement could be rated (No, High/Large, High/Moderate, High/Minor, Some/Large, Some/Moderate, Some/Minor, Low/Large, Low/Moderate, Low/Minor, and "?" or no response), comparing different patterns of response can be quite a complex matter. Because of this complexity, we have adopted some standard indices and terminology to simplify our discussion of the results.

#### 1. Explanation of Terms

To facilitate comparisons between statements, indices of importance and extent have been developed according to the following formulae:

$$\text{Weighted Importance} = I_w = \frac{3(\#High) + 2(\#Some) + 1(\#Low)}{30}$$

$$\text{Weighted Extent} = E_w = \frac{3(\#Large) + 2(\#Moderate) + 1(\#Minor)}{30}$$

where "#High" is the number of panelists who evaluated the statement as being of "high" importance, "#Some" is the number marking "some" importance, and so on. Since the sum is divided by thirty (the number of respondents), the resulting index is similar to a "grade point average" in school: For example,  $I_w = 3.0$  would indicate that all respondents marked the statement as of "high" importance, while an  $I_w = 0.0$  would indicate that all had marked "no" or "?."

Such an index will be extremely useful in the discussions that follow, but several cautions must be made. First, the indices will be very accurate reflections of the total pattern of responses at the upper and lower extremes (near 3.0 and near 0.0), but they will become a little less specific near the middle. For example,  $I_w = 2.0$  would result from each of the two following response patterns:

- (1) All 30 panelists marked "some" importance.
- (2) Eight marked "high," 14 marked "some," and 8 marked "low" importance.

There is obviously a major difference between the two patterns, explanation of which would depend on the content involved. For this reason, in the discussion that follows, note is often made of the actual response patterns in addition to the resulting weighted indices.

More serious is the failure of these indices to earmark statements on which there was no consensus whatever among the panel, or those on which the panel divided into two clearly opposing schools of thought. For example, an  $I_w = 2.0$  would also result from the following two patterns:

- (3) Ten marked "high," 10 marked "some," and 10 marked "low" importance.
- (4) Twenty marked "high," and 10 marked "no."

Because of this, and because such results are of special interest, statements exhibiting such splits or spreads of opinion are discussed separately in Section 4 of this chapter.

Despite these shortcomings, however, the indices will prove quite useful. The next section provides an example of this.

## 2. Statements Ranked by Importance Attributed

Perhaps the simplest way to present all hundred statements in a meaningful fashion is to rank-order them according to  $I_w$ , a measure of the importance attributed to them by the panelists. It must be remembered that, in doing this, we temporarily ignore such questions as how many respondents agreed or disagreed with a given statement, or how widespread respondents thought the effects would be; but if our subject is national recovery, then "importance to recovery" is clearly the variable with the most inherent interest to us.

As it happens, ranking the statements according to other rubrics of interest produce very similar lists. This can be demonstrated by considering the list that follows. Despite our separation of "extent" from "importance," the two were apparently very closely related in the minds of the panelists. Although  $E_w$ , on the average, is slightly higher than  $I_w$ , the difference is greater than 0.4 on only six of the hundred statements--correlating the two indices, one obtains an  $r = .96!$  Thus, with few exceptions, the factors evaluated as being widespread were also evaluated as being important, and conversely, phenomena seen as being limited in extent were seen also as being limited in significance.

Because of this very close correlation, we can simplify the discussion in this chapter by considering only the "importance" evaluations, discussing "extent" only when  $E_w$  is very different from  $I_w$  (e. g., Statement 83: "There would be a strong desire for peace.").

Here, then are the hundred statements, ranked according to the importance attributed to each by the panel as a whole. The first column gives the rank-order, and the second gives the statement number as printed in the Round Two and Three Questionnaires. The  $I_w$  and  $E_w$  are computed as described above, and the last column on the right directs the reader to pages in this chapter on which the statement is discussed.

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I<sub>w</sub></u>	<u>E<sub>w</sub></u>	<u>See Page</u>
( 1)	39.	People would need leadership	2.9	3.0	55
( 2)	35.	People would need information.	2.8	2.9	55
( 3)	38.	People would need reassurance.	2.6	2.7	55
( 4)	36.	People would need instructions.	2.6	2.7	55
( 5)	2.	There would be an increase in adaptive social behavior, such as organizing, learning, innovating, gathering, building, assisting, sharing, etc. <sup>5</sup>	2.5	2.2	35
( 6)	40.	New leaders would emerge.	2.3	2.0	56
( 7)	83.	There would be a strong desire for peace.	2.2	2.9	60
( 8)	73.	People would be more concerned with their immediate locality than with larger areas as a whole.	2.2	2.4	37
( 9)	34.	Individual and local innovation would be increased; as people are forced to seek solutions on their own.	2.2	2.4	49
(10)	23.	There would be an increase in willingness to cooperate between individuals and between groups.	2.2	2.0	47
(11)	44.	Attempts would be made to evacuate danger areas.	2.1	2.3	77
(12)	10.	People would be preoccupied with themselves and their immediate family or group.	2.1	2.4	36
(13)	75.	There would be a strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions.	2.0	2.1	76
(14)	33.	People would desire more communication than would be available.	2.0	2.4	55
(15)	58.	Troops would be used to maintain order.	1.9	1.8	71
(16)	48.	Complex organizations and institutions would break down or fragment.	1.9	1.9	41

<sup>5</sup>Note that in the five statements to which the highest importance was attributed, over 2/3rds of the panelists marked "High" importance.

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I</u> <u>W</u>	<u>E</u> <u>W</u>	<u>See</u> <u>Page</u>
(17)	32.	Rumors would flourish.	1.9	2.4	49
(18)	41.	The existing federal government would make serious mistakes.	1.9	1.8	38
(19)	72.	People would be more concerned with the present than with the future.	1.8	2.0	37
(20)	8.	Martial law would be enforced in many areas. <sup>6</sup>	1.8	1.8	71
(21)	67.	Local authoritarian organizations would develop.	1.7	1.7	72
(22)	37.	People would need to have events interpreted to them.	1.7	1.9	55
(23)	19.	People would act in ways that would be locally useful but dysfunctional nationally.	1.7	1.6	49
(24)	99. <sup>+</sup>	After the initial shock and inactivity would come a hyperactive rebound of energy and activity.	1.7	1.5	49, 80
(25)	53.	Medical resources would be hoarded.	1.7	2.2	36
(26)	18. <sup>+</sup>	People would be family- (or primary group) centered, willing to sacrifice others to the benefit of their families (or groups).	1.7	1.8	36, 83
(27)	1.	There would be an increase in competitive antisocial behavior, such as looting, hoarding, profiteering, robbery, fighting over resources, etc.	1.7	1.9	35
(28)	69.	People would be forced to work on certain projects, whether they liked it or not.	1.6	1.5	72
(29)	94.	There would be a return to reliance on and trust of one's neighbors.	1.5	1.5	47
(30)	47. <sup>+</sup>	People would be filled with renewed energy and motivation.	1.5	1.3	49, 80
(31)	30.	There would be a trend toward communal living.	1.5	1.5	47
(32)	90. <sup>+</sup>	There would be conflict between urban and rural populations.	1.5	1.3	69, 82

<sup>6</sup> Note that in the top twenty statements, 2/3rds. of the panelists marked either "Some" or "High" importance.

+ Statements thus marked are those on which the panel split into opposing schools of thought.

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I</u> <u>w</u>	<u>E</u> <u>w</u>	<u>See</u> <u>Page</u>
(33)	52. <sup>+</sup>	The influence and power of the federal government would be reduced.	1.4	1.4	38, 81
(34)	28.*	Individuals would subordinate themselves to groups. <sup>7</sup>	1.4	1.5	47
(35)	21.	Time would be lost searching for and asking about lost loved ones.	1.4	1.7	49
(36)	79.	People would blame their troubles on the Soviet Union.	1.3	2.1	65
(37)	54. <sup>+</sup>	Law enforcement systems would be overwhelmed.	1.3	1.2	41, 83
(38)	13.	People would turn to religion for understanding and solace.	1.3	1.5	74
(39)	11. <sup>+</sup>	People would be less interested in or concerned about the larger society; e.g., the nation as a whole.	1.3	1.4	37, 81
(40)	6.	People would withdraw, isolating themselves from exposure to perceived dangers.	1.2	1.3	49
(41)	57.	The schools would close.	1.2	1.9	41
(42)	86.	There would be conflict between socio-economic classes.	1.2	1.1	69
(43)	84. <sup>+</sup>	There would be conflict between races.	1.2	1.0	69, 82
(44)	93.	There would be a return to rugged individualism.	1.1	1.1	49
(45)	82.*	There would be a strong desire for revenge against the Soviet Union.	1.1	1.4	66, 87
(46)	51.*	Money would cease to have value and a barter system would develop.	1.1	1.0	58, 88
(47)	77.*	People would blame their troubles on the federal government.	1.1	1.4	64, 87
(48)	15. <sup>+</sup>	People would be more submissive, and ready to follow any kind of leader who arose.	1.1	1.0	47, 85

<sup>7</sup> Note that in the top third, at least 1 out of 10 panelists marked "High" importance.

\* Statements thus marked are those on which there was little agreement among panelists, but rather an even spread of responses.

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I w</u>	<u>E w</u>	<u>See Page</u>
(49)	4.	People would become apathetic, listless, dependent.	1.1	0.9	50
(50)	97.*	Survivors would feel great relief over having been spared.	1.0	1.5	78, 87
(51)	17.	People would be self-centered, with an "every man for himself" philosophy.	1.0	1.0	36
(52)	5.	People would panic and act irrationally.	1.0	0.9	50
(53)	89.+	There would be conflict between sections of the country.	1.0	0.9	69, 82
(54)	25.	There would be scattered, local revolts.	1.0	0.8	68
(55)	22.	Groups would be struggling against one another, with fights between families, gangs, localities.	1.0	0.9	45
(56)	78.+	People would blame their troubles on a few national leaders.	1.0	1.1	65
(57)	42.	People would lose faith in the government.	1.0	0.9	38
(58)	20.	Time would be lost grieving for dead or lost loved ones.	1.0	1.0	50
(59)	61.	People would wander around in something like a state of shock.	0.9	0.9	50
(60)	87.+	There would be conflict between hawks and doves.	0.9	1.0	69, 82
(61)	29.	Conversation would be eased between strangers.	0.9	1.5	50
(62)	9.+	Martial law would be enforced nationwide.	0.8	0.9	71, 83
(63)	74.+	People would be more concerned with the fate of the nation than with that of their state or region.	0.8	0.7	37, 81
(64)	66.+	Corporations and industries would continue to pursue selfish interests.	0.8	1.0	41, 87
(65)	3.	People would lose faith in preattack leaders and institutions.	0.8	0.8	38

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I</u> <u>w</u>	<u>E</u> <u>w</u>	<u>See</u> <u>Page</u>
(66)	76.	People would be anxious to try out new systems, values, and life styles in order to avoid the mistakes of the past. <sup>8</sup>	0.7	0.7	76
(67)	24.	There would be resistance to federal programs.	0.7	0.7	68
(68)	16.	People would become fatalistic.	0.9	0.7	50
(69)	63.	People would be open to changes in organized religions.	0.9	0.7	74
(70)	14.	People would spend much time trying to comprehend what had happened and looking for danger cues.	0.9	0.7	50
(71)	96.	Social attitudes would become more conservative.	0.7	0.7	77
(72)	92.	Groups would form with the aim of continuing the disorder and confusion.	0.7	0.5	45
(73)	88. <sup>+</sup>	There would be conflict between conservatives and liberals.	0.7	0.9	69, 82
(74)	70.	The Bill of Rights would be temporarily suspended.	0.7	0.8	72
(75)	64. <sup>+</sup>	Religious people would be more responsive to the needs of others than would non-religious.	0.7	0.6	74, 86
(76)	49.	There would be a return to more primitive forms of social organization, such as gangs, tribes, etc.	0.7	0.6	46
(77)	71.	People would become more "moral."	0.6	0.6	75
(78)	12.	New cults, superstitions, and taboos would arise.	0.6	0.7	75
(79)	98.	Survivors would feel great guilt over having been spared.	0.6	0.7	78
(80)	50. <sup>+</sup>	Rational economic planning would be impossible	0.6	0.6	58, 86
(81)	100.	People would be afraid of being alone.	0.5	0.7	47

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<sup>8</sup>Note that in all but two of the bottom third, fewer than 1 in 5 panelists marked "Some" or "High" importance.

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I</u> <u>w</u>	<u>E</u> <u>w</u>	<u>See</u> <u>Page</u>
(82)	68.	There would be a struggle between those calling for strong enforcement of law and order and those who fear the loss of civil liberties.	0.5	0.6	70
(83)	7.	People would work only if paid in food, clothing, etc.	0.5	0.5	58
(84)	56. <sup>+</sup>	The legal/judicial system would collapse.	0.5	0.8	41, 83
(85)	43.	Communications from the federal government would be ignored.	0.5	0.4	68
(86)	46.	People would fall into despair, and lose all motivation.	0.4	0.4	50
(87)	91.	There would be conflict between Americans and Canadians and/or Mexicans. <sup>9</sup>	0.3	0.3	69
(88)	31.	People would be paralyzed by role conflict-- when acting for one group would jeopardize another.	0.3	0.4	47
(89)	81.	People would blame their troubles on some minority group.	0.3	0.3	65
(90)	59.	There would be rebellions within the armed services.	0.3	0.3	68
(91)	27.	There would be attempts to secede from the nation.	0.3	0.2	68
(92)	60.	There would be massive, psychotic group behavior which is unprecedented and therefore unpredictable.	0.3	0.2	46
(93)	65.	People would be more interested in personal, inner-directed religion than with formal, public religion.	0.3	0.3	74
(94)	55.	Anarchy would prevail.	0.3	0.2	46
(95)	80.	People would blame their troubles on themselves.	0.2	0.2	65
(96)	95.	People would concentrate on the past instead of on the present and future.	0.2	0.2	37
(97)	85.	There would be conflict between religions.	0.2	0.2	69

<sup>9</sup>Note that in the bottom fourteen statements, 2/3rds. of the responding panelists marked "no."

<u>Rank</u>	<u>No.</u>	<u>Statement</u>	<u>I</u> <u>w</u>	<u>E</u> <u>w</u>	<u>See</u> <u>Page</u>
( 98)	62.	People would abandon their old religions.	0. 2	0. 2	74
( 99)	45.	Attempts would be made to evacuate the country.	0. 1	0. 1	77
(100)	26.	There would be a nationwide revolution. .	0. 1	0. 1	68

### 3. Discussion of the Hundred Statements

This section contains what might be considered the heart of the findings. In it, we shall discuss in some detail the questionnaire results by looking at some eighteen topics into which the hundred statements have been categorized--the categories are roughly, and in some cases arbitrarily drawn, but the division reduces the number of factors under consideration to a more manageable and comprehensible size, and allows comparisons between closely-related statements:

TOPICS OF DISCUSSION	SEE PAGE
a. Competition versus Cooperation .....	35
b. Focus of Attention and Concern .....	36
c. Relationships with the Federal Government..	38
d. Institutions and Organizations .....	41
e. Group Behavior .....	45
f. Group Membership .....	47
g. Individual Behavior .....	49
h. Needs and Desires .....	55
i. Postattack Economics .....	58
j. The Placing of Blame .....	64
k. Revenge versus Peace .....	66
l. Resistance and Rebellion .....	68
m. Conflict between Groups .....	69
n. Martial Law and Civil Liberties .....	71
o. Religion and Morality .....	74
p. Postattack Values .....	76
q. Evacuation .....	77
r. Relief versus Guilt .....	78

In these discussions, much use is made of quotations from comments made by the respondents. For reasons of confidentiality (an essential part of the method), no attributions are made, but care is taken to keep the intended sense of each comment unchanged, despite necessary editing alterations. These editings were necessarily numerous, since most of the comments were scribbled in margins, with little attention being paid to punctuation and syntax. In the interest of readability, no note is made in the text of changes in punctuation or the addition or deletion of articles, since such alterations were so frequently needed. But all more significant deletions are marked by ellipses (...) and insertions are bracketed.

Here, then, are the results.

a. Competition versus Cooperation

If there is any keystone around which an individual constructs his portrait of the postattack world; if there is any fulcrum upon which the prospects for recovery balance, it is to be discovered by comparing responses to the first two statements in the Round Two and Three Questionnaires:

1. There would be an increase in competitive antisocial behavior, such as looting, hoarding, profiteering, robbery, fighting over resources, etc.
2. There would be an increase in adaptive social behavior, such as organizing, learning, innovating, gathering, building, assisting, sharing, etc.

Since these statements probe near the fundamental assumptions on which one projects society's reaction to an attack, it is fair to use the panel's responses to them to characterize their general feelings about the subject.

Nearly all the respondents agreed that both statements were true--three disagreed with the first, and two disagreed with the second--so it appears that the panel recognized that the two statements were not dichotomous, and that both would be true. The differences become more apparent when we look at how the panel evaluated the two tendencies. Increases in both adaptive and maladaptive behavior were projected to be fairly widespread, the first getting a weighted extent rating of  $E_w = 1.9$ , and the second  $E_w = 2.2$ ; thus more panelists expected adaptive behavior to be greatly increased than thought the same about antisocial behavior.

But the real difference lies in the importance attributed by the panel. The second statement, which projects increased adaptive behavior, was rated among the five statements describing phenomena most crucial to national recovery--the weighted importance,  $I_w$ , being 2.5--and in fact, over two-thirds of the panelists thought that this general increase in cooperativeness would be of "high" importance, the highest possible evaluation. The first statement, while also very important ( $I_w = 1.7$ , which places it in the top third of the 100 statements), was ranked considerably lower, with only one-sixth of the respondents attributing "high" importance to the increase.

Thus, on the basis of these two statements alone, one can get some feeling about the general slant of the respondents' opinions: most respondents feel that, while all sorts of reactions to the attack would occur, the positive, adaptive, social reactions will be more prevalent and contribute more to national recovery than the negative, maladaptive, antisocial reactions will detract from the effort. Such a prediction is consistent with most findings in the field of disaster research, and this theme, in which optimism, or at least the positive projection, prevails over pessimism, or the negative projection, will be seen to continue throughout the entire discussion that follows.

But one must be careful not to portray the panel as foreseeing a rosy postattack future in which people will start being nice to each other all of a sudden--the edge is slight, and the importance of "negative" factors can be considerable. As a case in point, there was the following statement, which is closely related to the first statement above:

53. Medical resources would be hoarded.

Eighty percent of the panelists estimated the extent of this phenomenon at, from "moderate" to "large," and the weighted importance attributed to it was  $I_w = 1.7$ , which is certainly considerable.

#### b. Focus of Attention and Concern

One of the most commonly-cited generic factors in the Round One responses was that there would tend to be a narrowing of focus--i. e., that people would tend to be concerned, to a greater than normal extent, with their immediate surroundings, both in space, time, and society. For this reason, eight statements considered various aspects of this factor:

17. People would be self-centered, with an "every man for himself" philosophy.
10. People would be preoccupied with themselves and their immediate family or group.
18. People would be family- (or primary group) centered, willing to sacrifice others to the benefit of their families (or groups).

## FOCUS OF ATTENTION AND CONCERN

73. People would be more concerned with their immediate locality than with larger areas as a whole (e. g., state, region, nation).
74. People would be more concerned with the fate of the nation than with that of their state or region.
11. People would be less interested in or concerned about the larger society; e. g., the nation as a whole.
72. People would be more concerned with the present than with the future.
95. People would concentrate on the past instead of on the present and future.

Respondents were quite consistent in their evaluations of all of these. Along all three dimensions of concern, the expected statements were strongly agreed to. Thus, concern for the immediate locality rather than with larger areas, preoccupation with self and immediate family, and more concern with the present than with the future were all three rated among the top twenty in both extent and importance to recovery. Contrariwise, the idea that people would concentrate on the past instead of the future was rejected by five-sixths of the panelists, and the idea that survivors would be more concerned with the fate of the nation than with their own areas was ranked low (and probably would have been ranked lower had we not inadvertently omitted the word "locality"--perhaps because of this omission, the panel split on this statement. See Section 4 for detailed consideration of both this and Statement 11, a similar statement exhibiting a similar split in opinion).

Statement 18, which was similar to Statement 10, was apparently ranked lower because, as one panelist put it:

I agree that they would be family or group centered, but don't agree that they would be willing to sacrifice others. . . .

Thus, speaking generally, there was a good bit of agreement that this "narrowing" of focus of concern would be a common and important postattack phenomenon. A few reservations were cited, however, especially with regard to the duration of the effect:

In most major disasters, the victims "turn inward" during the immediate emergency. I don't think, however, that this reaction would extend over a long period of time.

The question here is one of time. I agree that for a brief period immediately following the attack, people would first check on their families. But... they would quickly become cooperative and group oriented....

On the other hand, panelists estimated elsewhere that something like 40 percent of the survivors could be expected to "react destructively" on the basis of the attitude "my family against all others."

An example of how diametrically opposed some positions are is obtained from comments in this category. Compare the following two comments:

...I think [people] are already more concerned with their locality than with the nation....

...most people believe that state or regional strength rests on national strength.

On the dimension of time--past, present, and future--the panel was more in agreement, the only major dissents being from a respondent who stated:

I would have [agreed that people would be more concerned with the present than with the future], but I am thinking of the great concerns about the NEXT STRIKE!

and from a couple of panelists who felt the attraction of nostalgia would be strong:

A few people, finding themselves unable to cope with a terrible today and uncertain tomorrow, are likely to regress, including focusing their attention on happier by-gone days.

### c. Relationships with the Federal Government

Closely related to the preceding category are four statements having to do with the links between the public and the federal government:

3. People would lose faith in preattack leaders and institutions.
42. People would lose faith in the government.
41. The existing federal government would make serious mistakes.
52. The influence and power of the federal government would be reduced.

## RELATIONSHIPS WITH THE FEDERAL GOVERNMENT

Speaking generally, there was strong agreement that the government would make serious mistakes--and that this factor would be important ( $I_w = 1.9$ )--and most panelists (2/3rds) agreed that the government's influence and power would be reduced (though there was a significant minority who disagreed with this).

On the other hand, the panelists did not think that these two factors would have the effect of creating a widespread loss of faith in the government or its leaders, since statements 3 and 42 both were given extent ratings of less than 1.0.

Actually, agreement on the making of mistakes and loss of power were thought of as almost tautological by most respondents:

Of course: an unprecedented situation would exist, [so] "mistakes" would seem unavoidable.

[The loss of power and influence] would be normal under such conditions.

However, except for the one respondent who didn't "see the Federal Government as surviving, so it would not make mistakes," there were some relevant qualifications added by several respondents:

... the loss of power and influence would be temporary.

Though the influence [of the federal government] would be reduced, it would probably remain the strongest organizational entity.

... federal control over many [previously state- and locally-controlled] things would become essential. On the other hand, the federal government would lack the detailed information necessary to handle local situations adequately.

So, what at least several panelists apparently intended to convey was that there would be "shifts in the balance between federal, state, and local influence."

Statement 42, "People would lose faith in the government," was one of the six on which all respondents were requested to submit explanations of their positions, so we are able to scrutinize the rationales exhibited here. And there is a fairly clear pattern of reasons behind the various positions taken.

For example, those who disagreed with the statement entirely (n = 11) most often cited the need for clinging to familiar things, including the government:

In time of disaster... people would be more likely to cling to established leaders and institutions than to lose faith in them, because the former attitude allays anxiety.

Government would absorb uncertainty, therefore maintain credibility.

People would blindly accept it as they always have....

There would be a need and desire to believe in leadership during the worst of it.

On the other hand, respondents who agreed that at least some loss of faith in government could be expected, but who evaluated the importance of this factor as "low" (n = 7), tended to attribute the loss of faith to the "scapegoat effect" of people searching for someone to blame for the preattack blunders that led to the tragedy:

It would seem inevitable... that whatever government "permitted" 50 percent of its people to be killed or permanently disabled would experience a considerable loss of confidence.

Perhaps the Chief Executive and a few of the Cabinet members... would lose credibility and be the scapegoats for the entire mess.

There is rationality for losing faith in a government which has been discredited by pre-war revelations about its dishonest conduct. The scenario does not cover events which precipitated the tensions that led to war, but if the government used a "Gulf of Tonkin" type of justification for contributing to tensions and it was later discovered by the public that the government's empirical base was falsified, then a serious loss of faith in government would assuredly develop during the post-attack period.

And finally, those who credited this factor with some-to-high importance (n = 8) used the fundamentally different argument that the loss of faith would result from postattack impotence and fumbling:

... because of relative powerlessness of government to help during the early period [and] lack of federal awareness of the local situation.

## RELATIONSHIPS WITH THE FEDERAL GOVERNMENT INSTITUTIONS AND ORGANIZATIONS

Presumably, the government will try to run things centrally. In the absence of good communications... such central direction will certainly be inappropriate to many local situations. The results will be a rapid loss in credence.

[Loss of faith would be] contingent on response....

Thus, we see once again that, quite often, variation in responses indicates not so much disagreement as it does emphasis on different aspects of the factor under consideration.

### d. Institutions and Organizations

Five statements directly examined the problems that might be expected in the operations of several types of institutions and organizations:

48. Complex organizations and institutions would break down or fragment.
54. Law enforcement systems would be overwhelmed.
56. The legal/judicial system would collapse.
57. The schools would close.
66. Corporations and industries would continue to pursue selfish interests.

The first statement, on the breakdown or fragmentation of institutions and organizations, was among the top twenty statements in both categories ( $I_w = E_w = 1.9$ ). Given the high ambiguity of the statement and its obvious importance, this statement was chosen to be one on which all respondents were invited to comment. We will cover their responses in some detail at this point.

First, there were two respondents who disagreed with the statement entirely, one because he felt a strong government would set everything right:

Organizations and institutions would, under a strong government, rapidly begin recovery.

and the other because he saw a reverse problem:

The social structure is extremely resistant to destruction. . . .  
A major problem would not be the breakdown of structures, but preventing structures from functioning competitively. . . [they] will tend to compete for the same manpower. It is the survival of organizations rather than their loss that is of serious importance.

In the remaining explanations, three major types of comments may be distinguished--those giving examples of the types of disruption expected and in what sectors; those citing the reasons for the disruption; and those pointing out the order of priorities involved.

Examples of what sorts of disruption might be expected included:

. . . Banking, credit arrangements, insurance would be particularly affected. Property rights and titles would be very uncertain.

Industrial complexes will fragment--the more complex the organization, the more subject to fragmentation.

. . . government organizations and institutions would probably fare better and eventually repair much more quickly than private types.

I think General Motors would fragment in a post-attack situation. . . . I don't know about "break-down": this depends on how autocratic or centralized decision-making has been. . . .

I think Notre Dame, G. M., AT&T, IBM, Baptist Church, etc., would not break down. However, I suspect the Black Panthers, Playboy, NAACP, Acme Insurance, and the Nashville snake handlers might fade away.

Do not believe it would be extensive, as most [complex organizations] are preparedness-conscious; e. g., AT&T, Standard Oil.

The more sophisticated and nationwide institutions would suffer temporarily but revive in the undamaged areas.

Agreement was high on the causes of the disruption:

Information requirements wouldn't be met.

This would follow from the disruption of communication and transportation on the one hand, and overwhelming new challenges on the other.

Interdependent, effective action must have all forms of communication operative.

The nature of the destruction, especially to normal lines of communication... would cause this to happen.

The personnel, communication, and investment that keep large organizations and institutions going would be gapped... The primary ingredient here, I think, is investment.

Because of communications breakdowns; because of breakdowns in supply lines; because of disruptions in all lines of command... Hence, fragmentation is postulated as a transitory phase lasting perhaps a year or two.

Destruction of some of [the necessary complex information flows] would lead to orders from [corporate] headquarters for local managers to do the best they can and comply with government orders to produce without further instructions from headquarters.

...as communications are disrupted, key personnel are suddenly lost, etc., systems dependent on them are adversely affected...

In any emergency situation, simplicity of organization and operations is demanded. Complex institutions would have to break down into simpler, e. g., regional, form to survive.

The more complex an organization is, the more dependent it is on communications for efficient functioning. Since communications will be seriously impaired, it follows that breakdown will result.

In view of the destruction, loss of life, and poor communications, large complex institutions or organizations will of necessity function on a fragmentary basis.

Complex institutions can only function through extensive communications systems...

Thus, a third of the respondents spontaneously mentioned poor communications as a prime reason for institutional/organizational fragmentation. It is interesting to note that this same third estimated a slightly greater extent of communications disruption than did the panel as a whole (half of them estimated that five percent or more of the population would remain "completely cut-off from communication with the federal government after six months," while half of the entire panel estimated the same percentage at zero).

Most of the remaining respondents talked about the place held by such organizations on the scale of human needs:

Complex organization occurs and is important only after life's necessities have been attended to. Thus the disruption of complex organizations would be unimportant for the present concern.

As survival becomes threatened, behavior needs will be more determined by lower levels of the pyramid of needs. . . the more complex and sophisticated [organizations and institutions] appeal to "higher level" needs.

Local strength would be essential first, transcending national organization. . . .

While simple basic needs are difficult to meet, simple basic institutions at a local level will be used to meet them. As such needs are satisfied and higher-order needs begin to be addressed, higher-order institutions will reappear to address them.

Because of the preemption of local problems. Complex entities tend to be non-local.

. . . postattack needs will be much different than preattack. Who will need 10 million autos or what use would there be for beauty parlors? Would colleges or even high schools be needed? Would they teach philosophy and theatre arts? What would happen to insurance companies or even the Red Cross? Finally, government itself, at every level, is probably dysfunctional in its preattack form.

Thus, in summary, it appears that the panel agreed that the disruption of communications, compounded with breakdowns in transportation and loss of personnel, would be the key factor in the fragmentation of financial institutions and industrial organizations. The effects, though obviously "substantial and far-reaching," would be mitigated somewhat by the fact that survivors would have little need for many such systems, at least at first, and by preparedness measures and the general survival of governmental structures. And, finally, it must be remembered that the survival, and consequent drain on critical resources, of some systems could pose greater problems than would their destruction.

The overwhelming of law enforcement systems and the closing of schools were both rated as being of low but not negligible importance ( $I_w = 1.3$  and  $1.2$ ,

respectively), though there was disagreement among the panel on the former (for a discussion of which see Section 4). No explanations were submitted as to why the closing of the schools were thought to be so important, except for one note that "this would leave the kids underfoot," and another that the closing of schools would have the important pro-recovery effect of making available a great deal of shelter.

On Statement 56, twice as many panelists disagreed with the idea that the legal/judicial system would collapse as agreed with it, and no one attributed high importance to such a possibility. One suspects the word "collapse" was a bit too strong--since there seemed to be general recognition that there would be extensive "restructuring," "great strains," and "belated due process."

And on Statement 66, the sentence was so loaded as to defy analysis--as one respondent pointed out, one might as well have asked "When did you stop beating your wife?" The statement did elicit some rather strong defenses of the competitive system of free enterprise:

Profit is their reason for existence.

Corporations are supposed to pursue the selfish interests (long run) of their stockholders, and would continue to do so.

Selfish? Business exists to support its owners--why should that change?

What else could they do?

This statement is covered again in Section 4, since the panel was divided in its opinions.

#### e. Group Behavior

Five statements were included that dealt with (primarily aberrant) group behavior:

22. Groups would be struggling against one another, with fights between families, gangs, localities.
92. Groups would form with the aim of continuing the disorder and confusion.

49. There would be a return to more primitive forms of social organization, such as gangs, tribes, etc.
60. There would be massive, psychotic group behavior which is unprecedented and therefore unpredictable.
55. Anarchy would prevail.

The greatest  $I_w$  attributed to any of these statements was the 1.0 registered on the first one, and even there, no one expected such fights to be very widespread or of great importance. And on the second, even though most respondents agreed that such groups would exist (and, as several pointed out, do exist), no one thought there would be more than a very few. Similar results obtained for Statement 49, though perhaps the fact that the descriptors used were emotion-laden might have had some effect there--had we used "simpler" instead of "more primitive," and "cooperatives and fraternal orders" instead of "gangs and tribes," the results might have been quite different.

On Statement 60, we have the interesting situation in which the respondents were confronted with a statement, the acceptance of which would have undermined their own qualifications to accept it, since the statement is in fact an argument for the position that social responses to an unprecedented event cannot be predicted. Perhaps not too surprisingly, the panelists rejected this imputation overwhelmingly. With what may have been admirable consistency, however, the only respondent who agreed with and attributed high importance to this statement was also the only one who never submitted a Third Round Questionnaire.

Rated even lower was Statement 55, which portrays complete social disintegration--all but three respondents marked this one "no," and one of the dissenters qualified his prediction with "...for a short time only." The one panelist who maintained that anarchy would be widespread and crucially important stated his case simply:

With over half the population dead, dying, or seriously disabled, it is hard to see how political institutions could function over wide areas. Since recovery depends on organized, cooperative, coordinated activities to a considerable extent, this disorganization should impede it significantly.

Elsewhere in the questionnaire, the median response to a request to estimate the likelihood of "total social collapse into complete anarchy" was one in a hundred.

f. Group Membership

A number of statements can be roughly categorized as having to do with the relationship between individuals and various types of groups:

23. There would be an increase in willingness to cooperate between individuals and between groups.
30. There would be a trend toward communal living.
94. There would be a return to reliance on and trust of one's neighbor.
28. Individuals would subordinate themselves to groups.
15. People would be more submissive, and ready to follow any kind of leader who arose.
100. People would be afraid of being alone.
31. People would be paralyzed by role conflict--when acting for one group would jeopardize another.

The first of these is closely related to Statement 2, which postulates an increase in adaptive social behavior of all kinds (see the beginning of this section), and, like that statement, was ranked among the top ten statements in importance to national recovery ( $I_w = 2.2$ ). It seems that nearly all respondents agree with the general concept that, as in most more limited disasters, the great majority of survivors will rise to the occasion, shrugging off minor or past grievances to work together to rebuild what has been destroyed.

The next statement is a little more difficult to analyze. The increase in communal living was postulated by all but two respondents, and was ranked in the top third in importance. This agreement and importance is a little surprising when one considers that several definitions of "communal" were apparently assumed, some of them having currently pejorative connotations. For example, those who evaluated the importance and extent of this trend on the high side seemed mostly

to be thinking of the enforced communality of shelter life, which would of course be extensive in the early postattack period by necessity. On the other hand, those giving estimates on the low side tended to explain that by "communal" they understood "non-family based groupings of individuals," the voluntary selection of which would imply a fundamental change in the social structure. It is impossible to say precisely what the majority of panelists had in mind when they marked this statement as being rather important and extensive.

The third statement, on trusting one's neighbors, was ranked similarly, and is consistent with the general tendency among the panel to predict increased social cohesion. However, one respondent cautioned against a tendency:

... to posit a return to some hypothetical historical state.

One notices at several points a rather strange image implying that nuclear attack might return society to a mythical "golden age." One panelist verbalized this feeling:

After the bombs have blown away our affluence, materialistic coating, selfishness, and "me-first" attitude, the country will return to a 1930's mental attitude that is patriotic, nationalistic, and a drifting away from the attitudes listed above.

On the other hand, the next two statements, which imply that many people, dazed and overwhelmed by events beyond their control or understanding, would drift rather aimlessly into whatever group was nearest, elicited a strong split in opinion between two groups of panelists. There did seem to be agreement that overall group membership would increase, but the reasons for it were open to debate. These statements are considered again in Section 4.

The last two statements were among the twenty ranked as least important. Though most respondents agreed that people would be afraid to be alone, none attributed high importance to the phenomenon, and one pointed out that:

Most people, in war or peace, need company--few people have a hermit's capabilities. This statement is true as a behavioral proposition completely aside [from] any post-nuclear attack context.

The extremely low ranking of Statement 31 ( $I_w = 0.3$ ) was somewhat surprising, since it covers a factor (role conflict) often described in the literature. The only cogent explanation we can offer for the resounding rejection of this statement is that the term "paralyzed" was too strong (which two panelists mentioned as their reason for marking "no"), with an aside that perhaps a number of respondents were not familiar with the term. Neurotic vacillation stemming from role conflict is so common even in present-day society, that it is rather startling to see 2/3rds of the panelists denying that the phenomenon exists.

g. Individual Behavior

A total of sixteen statements had to do with the behavior and emotional states of individual survivors. Since division of these statements into finer categories would be arbitrary at best, they are listed and discussed below in the order of importance attributed to them by respondents:

	Statement	$I_w$
34.	Individual and local innovation would be increased, as people are forced to seek solutions on their own.	2.2
32.	Rumors would flourish.	1.9
19.	People would act in ways that would be locally useful but dysfunctional nationally.	1.7
99.	After the initial shock and inactivity would come a hyperactive rebound of energy and activity.	1.7
47.	People would be filled with renewed energy and motivation.	1.5
21.	Time would be lost searching for and asking about lost loved ones.	1.4
6.	People would withdraw, isolating themselves from exposure to perceived dangers.	1.2
93.	There would be a return to rugged individualism.	1.1

	Statement	$I_w$
4.	People would become apathetic, listless, dependent.	1.1
5.	People would panic and act irrationally.	1.0
20.	Time would be lost grieving for dead or lost loved ones.	1.0
61.	People would wander around in something like a state of shock.	0.9
29.	Conversation would be eased between strangers.	0.9
16.	People would become fatalistic.	0.7
14.	People would spend much time trying to comprehend what had happened and looking for danger cues.	0.7
46.	People would fall into despair, and lose all motivation.	0.4

There was universal agreement among the responding panelists that the fragmentation of national life brought about by disruptions in communications and transportation would have at least the one positive benefit of throwing people back on their own resources and ingenuity, thus inducing an increase in innovation. In short, it seems that the panel agrees with the old saw that "necessity is the mother of invention," thus presuming that, if people could no longer run down to the corner for a needed gadget, they would be more likely to rig one up on their own. A couple of mildly cautioning voices, however, bear listening to:

Local innovations to solve local problems would not solve the recovery problem from the national point of view....

... innovative procedures will not be nearly as important as... already developed techniques and procedures. A great deal of the innovation will in fact be counter-productive--black market activities, private exchange mechanisms, etc.

Again, there was only one panelist who did not think that "rumors would flourish" (he based his disagreement on the point that communications would be too disrupted to allow a rumor to "flourish"), and, in fact, rumors were estimated as among the most widespread of all phenomena discussed ( $E_w = 2.4$ ). The importance

of the rumors to national recovery was a little less dramatic than their prevalence might have led one to believe, however, though attributed importance was still considerable. Many panelists seemed to feel that leadership could handle the rumors if sufficient priority were given to this task, since:

... counter rumors could counteract [rumors, and] people may tend not to take them seriously....

Statement 19 considers the case in which the preoccupation with local problems could lead to activities which, though clearly helpful at the local level, would impede national recovery. The modal response here was to assess this factor as being of "some" importance and "moderate" extent; i. e., quite significant, but not of top priority. Several panelists disagreed, however:

... local actions can be given national meaning or reversed as governmental mechanisms are able to affect the situation.

I believe that generally that which is good for the parts is good for the whole. Therefore, if something is useful locally, it would eventually be useful overall to the nation.

Contradictory for me.

Thus, the debate continues whether national strength is founded on the strength of autonomous, subnational units; or whether subnational units can survive without national strength through unity. On the basis of this questionnaire, the panel seems to slightly favor the latter analysis.

The next statement (99) postulates what has been referred to as "the amplified rebound effect." This reaction, noted in many disasters large and small, is exemplified by noting the surprisingly rapid resurgence of many (but not all) stricken communities to post-disaster productivity levels in excess even of the levels that would have obtained had pre-disaster growth rates continued unchanged. Though actually a sociological phenomenon, this effect is considered in this category on the assumption that such community "rebound" must be founded on the reactions of individual survivors. From the panel's having ranked this statement among the top third in both extent and importance, it may be presumed that many other hopeful predictions made in this study may be predicated on the assumption

that this resurgence of energy and enthusiasm will be widespread. This interpretation is also supported by the ratings given to the pair of opposing statements, 46 and 47, where the statement "People would be filled with renewed energy and motivation" was also ranked among the top third, while the statement "People would fall into despair, and lose all motivation" was ranked very near the bottom. Nothing in these results more clearly indicates the general disposition of the panel toward the idea that, psychologically, more people would respond to such an unprecedented disaster with a healthy, adaptive outlook than would respond otherwise. And it must be pointed out that the bulk of disaster research tends to support this position.

However, the panel is not undivided on this subject--there was a distinct minority dissent from this hopeful outlook, represented by the six panelists who marked "no" on Statement 99, and the eight who chose the same response on Statement 47. Their disagreement is not total, however, since all agreed that the "fall into despair" of Statement 46 would not be significant. But, as statements exhibiting polarization among panelists, these are discussed further in Section 4.

Panelists recognized that significant problems would arise from the fact that virtually every survivor would have close relatives and friends either dead or missing (or simply out of touch), since the natural reactions to such loss would involve, at the very least, time spent on other than recovery activities (Cf: Statements 20 and 21). But they also agreed that the primary problem would arise from the resulting behavior (searching, inquiring, etc.), rather than from the emotional reaction (grief, mourning). The most significant difference between the panel's response to the two statements is that, while only one respondent disagreed entirely with Statement 21 (searching), an even one-third of them disagreed with Statement 20 (grief). A number of respondents found this, and the fact that the modal response to both statements was "low" importance, "minor" extent, somewhat surprising:

If 50% are casualties, how could the extent of searching for family members and trying to find out their fate be "minor?" Or the impact "low"? I simply cannot see it this way... the importance I assess as "high," because the large extent of admitted probable time losses cannot but have an impact to slow down recovery activities or to have people work at less

than their peak efficiency. Cumulatively and in the aggregate, the effect would have to be expected to be considerable.

With 1 out of 2 people a casualty, widespread and profound grief appears inevitable. While reduced efficiency... or lost time from grief would probably not extend for a protracted period of time, its near universal occurrence during the first days... make it seem a significant factor....

The rest of the statements in this category were rated by the panel as being of little or no importance. While nearly everyone had to agree with Statement 6, which predicted withdrawal, since the shelter period makes this sort of behavior inevitable at first, most seemed to agree that:

... withdrawal is not a very common response to this type of danger. Greater social involvement is a more usual response.

And while there was some debate over whether the results of a possible "return to rugged individualism" would be positive or negative (Statement 93), very few panelists thought the effects would be either highly important or very widespread.

And on the questions of apathy, panic, shock, and fatalism as responses to the attack, while most panelists agreed that such reactions would certainly occur, few if any thought these reactions would be prevalent, and fewer still attributed high importance to them with regard to the prospects for national recovery. It was pointed out, however, that:

Some people would become listless due to the after-effects of radiation. Energy reserves might be drained [from a combination of such factors as illness, poor nutrition, and unusual demands for energetic activity].

But this is not, strictly speaking, a social or psychological factor.

Statement 29, "Conversation would be eased between strangers," was one of those rated by panelists as being quite common, but of little significance to recovery--as many observers have pointed out, it appears that tragedy, even on as small a scale as an auto crash, is about the only way to get some people to talk to one another at all. But the result is more often cathartic chatter than purposeful dialogue. Such catharsis is again evaluated on Statement 14, on which one panelist commented:

Most would relive the crisis frequently, and it would neither help nor hurt recovery.

Finally, despair (Statement 46) was the one psychological reaction rejected by a majority of the panel.

A few of the questions asked of the panel in the Second- and Third-Round Questionnaires are pertinent here. For example, 2/3rds of the panel agreed that "'fear' would be the most significant psychological barrier to national recovery," when "fear" was elaborated as:

fear of death; injury; illness; radiation; starvation; mutation; renewed attack; invasion; thieves; disorder; personal violence; the unknown...also...panic, hysteria, self-preservation, shift to more primitive needs, preoccupation with survival, and so on.

To investigate this topic further, respondents were asked to estimate the "half-life" of this fear; i. e., the amount of time "it would take for all this fear to subside to one-half its maximum severity." The median estimation of this factor was three weeks, with an InterQuartile Range (IQR) of from two weeks to about four months (the total range of responses, it should be pointed out, was from one day to an unspecified number of "years").

More pertinent, perhaps, are the panelists' evaluations of "guidelines for the government policies most likely to effectively counter fear." By a ratio of 25:1, panelists preferred a policy to "tell the truth, whether it is reassuring or not," over a policy to "give strong reassurances, positive assessments, and optimistic projections, whether true or not." Further, the panelists preferred that the government "provide strong, direct, authoritarian leadership," rather than "throw all decisions before the people, via town meetings, etc., whenever possible," by a ratio of 4:1.

This particular policy is clarified by considering that the panel subsequently rejected, by a response of 19 to 8, a proposal that "the military should take over governmental functions for the period immediately following a nuclear exchange."

Also, the panel preferred (21:4) a government policy to "use fear to encourage binding us all together on a humanitarian, rather than a national level," to a policy which would "channel fear into anger against an internal or external threat to the nation."

Finally, the panel was divided on whether the best fear-reducing policy would be to "give detailed instructions of all kinds" or to "give only general suggestions, encouraging innovation."

Other related questions included one which asked whether "a major, well-organized, preattack public education program on all conceivable aspects of post-attack society, presented to the public via classrooms, television, etc., would help to prepare the public and offset the fear which would otherwise result from such an attack." This was agreed to by a margin of 18 to 7, though not without some very strong reservations about the other effects of such a program.

#### h. Needs and Desires

The category of statements to which by far the greatest importance was attributed was that having to do with the needs and desires of survivors:

Statement	I W
39. People would need leadership.	2.9
35. People would need information.	2.8
38. People would need reassurance.	2.6
36. People would need instruction.	2.6
33. People would desire more communication than would be available.	2.0
37. People would need to have events interpreted to them.	1.7

The first four of the above statements were the four statements which topped the list when all statements were ranked according to attributed importance, and the remaining two, though ranked somewhat lower, were still among the top one-fourth of the hundred statements. The factor that ties all these needs together is once again communications, a factor which continues to emerge as the key to recovery. Information, reassurance, instruction, interpretation, and even leadership are wholly dependent not only on the existence but the wisdom of national communications. In total, what is being pointed to by this unanimity of evaluation is that the people will need direction more than any other psychological need, and that the federal government must provide this with the highest possible speed and wisdom. The dependence on communications is illuminated by the caution that:

People always need leadership, but leadership will only be relatively important in comparison with effective planning, adequate preparation, etc. I expect leadership to be adequate under almost any conditions, but whether leadership can lead effectively will be a function of organization rather than leadership as such.

Perhaps even more important in this respect was the reaction of the panel to the following statement:

40. New leaders would emerge.

Not only was this statement almost universally deemed to be true, but it ranked sixth in importance, with  $I_w = 2.3$ , despite some question as to whether the statement implied that the new leaders would replace the old. Thus, the panel feels that leadership will arise in response to the needs of survivors. Since this factor was given such profound importance, it will be worthwhile to probe more deeply into the phenomenon. When asked to describe this "emerging leadership" from a set of paired descriptors (trite, but meaningful to most people), our panelists thought, by a margin of over 10 to 1, that they would be "action-oriented" and "materialistically-oriented" (as opposed to "intellectually" and "spiritually-oriented"), and by margins of 2 to one or better, they described the new leaders as "nationalist" and "conservative to reactionary" (as opposed to "internationalist" and "liberal to radical"). The one pair of descriptors on which the panel was fairly evenly

divided was that of "hawk" or "dove," for more discussion of which, see the section on "revenge versus peace." It is interesting to note that the respondents attributed twice the extent and importance to the desire for peace as they did for the desire for revenge.

When asked to recommend federal policy with respect to emerging leaders, the panelists almost all took moderate positions, half recommending that the government "attempt to bring new leaders into the government's unified command," and the other half cautioning that the government should "evaluate new leaders carefully, encouraging cooperative ones and discouraging others." Few panelists thought the government should either encourage or discourage this leadership emergence indiscriminantly. On the need for information, two panelists mentioned mitigating factors:

Information, yes; but its value would be limited by the limited real options open for some time.

People need some information. People want more information than they need.

Reassurance, as one panelist pointed out,

... will be a basic psychological need immediately after the attack. This will dispel an inclination to despair and encourage the rebuilding effort, thus having a great effect on recovery.

And another respondent went so far as to say:

... early recovery efforts (i. e., first week) will undoubtedly be handled locally, and large amounts of information will not be required. The primary need will be for assurances as regards the external threat and the ability of the nation as a whole to survive.

However, it must be pointed out that, elsewhere, the panelists recommended by the overwhelming ratio of 25:1 that the government "tell the truth, whether it is reassuring or not," rather than "give strong reassurances, ... whether true or not." How this stacks up against the prediction made by most responding panelists, that "there would be a second (and perhaps third) nuclear strike," we will leave to the reader.

And finally, it is significant that the "need for interpretation" was rated as less important than the other needs. It is clear that the panel prefers facts to metaphors, and news to propaganda.

i. Postattack Economics

The problems of projecting the postattack economic structure are not directly covered in this study--partially because of the complexity of the subject and partially because effects on economic institutions are, to a large extent, second-order effects, derivable from knowledge of the more fundamental social and psychological factors. Nevertheless, several statements were included to probe the range of economic assumptions held by respondents; that is, to clarify somewhat our image of the respondents' ideas on the subject:

7. People would work only if paid in food, clothing, etc.
50. Rational economic planning would be impossible.
51. Money would cease to have value, and a barter system would develop.

The first two statements were rejected rather resoundingly, though with a strongly dissenting minority on Statement 50 (which, because of this split, is discussed further in Section 4). The first statement, which implies at the minimum, a loss of faith in the value of money and perhaps in the worth of cooperative action generally, was rated very low ( $I_w = E_w = 0.5$ ), and although about a third of the panelists agreed that there would be examples of such adamancy among the survivors, few thought the phenomenon would be so widespread as to be of great importance. However, this low rating is largely contradicted by the response to another section of the questionnaire, in which panelists predicted that, through the first month, one-fifth of the otherwise available labor force would work "only on jobs for which the pay was in immediately beneficial goods and services (e. g., food, shelter)." Because of this fundamental contradiction, we shall consider the comments on this statement in detail.

A dissent from the low ratings accorded this "what's in it for me" reaction was discussed by one respondent who expected it to be widespread:

I interpreted the time frame to be... some period before... the citizenry could be informed of the full extent of the damage, the prospects for recovery, and before the full effects of the government propaganda machines could be brought into play. I am assuming a government propaganda effort [focused] on getting people to believe there is hope for recovery--even at the sacrifice of truth. Until people are so persuaded, I suspect that they will demand more for their labor than an handful of promissory notes, which is what currency is... In any event, I don't think they would work for paper until they became convinced that the government which issues the paper is viable and the economy which backs up that paper has a future....

A more moderate position may be somewhat more compelling, because it brings the argument to a more personal and immediate level:

So long as money is an effective means of [meeting] survival needs--i. e., so long as you can buy food--something resembling our current economic process can be expected to continue. However, we can expect that some geographic areas will, for a time, experience shortages of survival resources. A good example is food--nationally, we can expect to have sufficient food for everyone, but we can also expect severe shortages resulting from distribution problems, particularly in the northeastern states. If I am in such an area and my family and I are hungry, my work will be directed toward obtaining food by whatever means appears most likely to produce success, whether bartering work for food, performing constructive work to improve food distribution (in the expectation of participating in the consumption of the food when it arrived), or, all else failing or appearing to fail, foraging for food or moving from the area.

Another reason, mentioned by several respondents who agreed that payment in kind would be common, was postattack inflation:

Dollars may be worthless (almost) because of inflation, for some time.

If inflation is apparent or imminent, some will overreact....

Though another panelist doubted that even inflation would have such an impact:

Money would still serve as a medium of exchange even during very rapid inflation--Cf: Germany of 1925.

However, the most common response to the statement was to mark "no," indicating complete disagreement (half the respondents so responded). The reasons for this response were extremely varied, and thus are of particular interest:

... People would feel a strong urge to do something structural and goal-directed, which would be its own reinforcement as a means of reducing their fear.

... many would work just to keep their minds off... the losses, human and material, which the nation and they themselves would have suffered. In other words, I suspect that many people might work just to "forget," if you wish.

I believe the answer to this statement should be "no" because a strong central government with military backing would emerge.

Other rewards, social support, information, promise of future advantage, altruistic values, [popularity, prestige, affections, and so on] are also important elements in motivation...

But the reason cited most frequently was selfless altruism:

I believe most people will work for the common good of all, and will not seek or demand any tangible reward for this service.

Many people will work to overcome their local difficulties and do so for nothing; i. e., if... my neighbor's house were damaged, I would do what I could to... help fix it.

Some people would work just because things need to be done. They need no compensation to motivate them.

I think that when the survival of the nation is at stake, many would work without reimbursement of any kind...

And one final, less pleasant reason for working for money was that:

... profiteers would have clothing and food available at high prices and people would have no recourse but to pay or commit criminal acts to acquire them.

But, perhaps fortunately, this aspect would be limited by the same barriers that caused the shortages in the first place:

Distances are great and mobility would be reduced, so black markets for rationed goods may be hard to establish, even to the extent of WWII experience in America.

Statement 51, which postulates the replacement of the monetary system with a barter economy, was another of the statements on which panelists were asked to comment, and it is well that we made it so, since there was probably less agreement among respondents on this statement than on any other--the responses were spread quite evenly among all possible responses.

Those who disagreed with the statement generally did so because they could see no substitute for money under even extreme circumstances, though most admitted that some barter could be expected:

Money is always of uncertain value and would be more uncertain postattack, but I see no substitute. I cannot conceive of a wide-spread barter system... Some barter and some black market operations would occur, of course, but "money" would not lose "its value" [even though] it might depreciate rapidly in hyper-inflation.

Since the federal government survives by assumption, money will have some value, although a strong inflation may occur as people scramble for survival assets.

Extensive barter can be expected, but the money system would continue with varying degrees of confidence depending on time and place. Widespread use of credits perhaps of a different type can be expected, but a barter economy cannot be expected.

Society has been trained to think in terms of monetary values. I do not think this will change overnight....

This is an assertion that the government could not control runaway inflation. Maybe so, but not necessarily.

A couple of other rationales also appeared for "no" answers:

Confidence in the extant structure; i. e., money, until proven otherwise, would prevail.

I answered "no" because I am aware of the extensive preparations made by Treasury and Federal Reserve to remain on a money system after nuclear attack. I consider these arrangements, including banking regulations, stockpiling of money, etc., likely to make the "no" answer valid.

Some of the panelists who agreed with the statement but thought it would be of limited importance, gave the rather similar assessment that there would be barter, yes, but not a barter system:

... it would have an almost personal flavor in that no standardized scheme would develop. Thus [barter] would be extensive, but as many different kinds.

But most panelists in this category thought that barter would be of only small importance because it would be limited geographically:

I believe that in the fringe areas where recovery is incomplete or difficult, many workers would demand some sort of barter arrangement before resuming their former jobs. In fact, a shadow barter economy would probably develop in areas requiring reconstruction.

I think this would be true in the hardest hit areas, but overall, money would probably retain its importance....

... normal procedures will break down in some areas at some times.

And several panelists referred to black markets in other wars:

Black marketing will become a factor that will have to be dealt with. Such was true in post-war Europe, Korea, Japan, and Viet Nam [sic].

Needed scarce goods which have some of the characteristics of money have replaced money in other war-ravaged countries.

Respondents who not only agreed with the statement, but thought this collapse of the money system would be of high importance, tended to have a more visceral response:

Money will not buy creature comforts unless available in sufficient quantity and of assured value. I would rather fill my larder with beans I can eat and my trunk with blankets and clothes, than to have a whole room full of wampum.

Actual things of value, as opposed to symbols of value (e. g., money), would be much more important to survivors, and the "things" are what they would use to get other "things."

For some time, I can't see what one would do with money! Old money would be of little use, if any at all. New money (blue money) would not have established any clear value in relation to goods.

So, we have seen responses run full circle from those who "can't imagine" what could be substituted for money, to those who "can't imagine" what anyone would do with money. One respondent sidestepped the entire issue by noting that "this is a question for economists," but the five economists on our panel submitted responses as evenly spread over the range from "important" to "untrue" as did their non-economist counterparts.

Perhaps the best example of how the same explanation can be used to justify very different responses appears on this statement. The following four quotes are taken from explanations accompanying responses of "no," "low" importance, "some" importance, and "high" importance, respectively:

...time is an important consideration. Immediately after the missile exchange, the [statement] is more relevant than say a week or month later.

...a new money would eventually emerge, and much of the money individuals had in institutions would be replaced in kind.

...this would be a temporary thing, and not too troublesome.

Question too dependent on time frame assumptions. Currency would be reestablished at some point because people have the money habit.

In summary, then, the most that can be said about the postattack economic picture from these data is that the panel was in agreement only on the position that, even though there would probably be some barter, there would probably not be "a barter system" by any strict definition of the term. The relatively low importance attributed to economic questions is a little surprising, unless it merely means we didn't ask the right questions. Otherwise, one must assume that the

panel considers economics to be of secondary importance when compared with the more pressing, basic survival needs. But this idea, if true, is itself extremely important.

Further lack of agreement became apparent on the questions added to Round Three in hopes of quantifying some of the effects on financial institutions. To the basic question asking when banks would "begin to reopen," the answers ranged from two days to five years after the attack. Despite this spread in responses, however, the distributions of responses are unimodal, and thus the medians have some meaning:

<u>Date Being Estimated</u>	<u>Median</u>	<u>IQR<sup>10</sup></u>
Banks begin to reopen	one month	two weeks to four months
People begin depositing funds	two months	one month to six months
Banks begin making loans to large businesses	three months	one month to six months
Banks begin making loans to individuals	four months	one month to nine months

#### j. The Placing of Blame

Five of the statements considered the question of where the blame would be placed for the war and its consequent suffering. Since it was assumed in the scenario that the Soviet Union launched the first strike, and since it could further be assumed that, officially, the blame would be placed on their heads, the statements were purposely worded to consider whom the people would blame, not only for the war or the general results of it, but for their own particular troubles:

77. People would blame their troubles on the federal government.

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<sup>10</sup> Range within which at least half of the responses lay. Assuming a continuous population, this corresponds approximately to the 90 percent confidence interval at this sample size.

78. People would blame their troubles on a few national leaders.
79. People would blame their troubles on the Soviet Union.
80. People would blame their troubles on themselves.
81. People would blame their troubles on some minority group.

Over two-thirds of the responding panelists agreed that the placing of blame on the Soviet Union would be widespread ( $E_w = 2.1$ ), and about half estimated the importance to recovery of this general focus of blame to be "low" ( $I_w = 1.3$ ). In contrast, respondents did not foresee very widespread blame-placing on the federal government ( $E_w = 1.4$ ), but the importance attributed to this factor was higher ( $I_w = 1.1$ ) than might have been predicted by consideration of extensiveness alone. In the same range, though even less widespread, was estimated the placing of blame on "a few national leaders." The other two possibilities offered in the questionnaire (blaming "some minority group" or blaming "themselves") were almost completely rejected, with both extent and importance ratings of less than 0.4.

Despite the relatively low importance placed on the factor generally, there is still something relevant to be learned by considering the rationales behind the variations. Most of the commenters on the idea of placing blame on the Soviet Union seemed to think that the choice was fairly obvious, and they downplayed the importance of the phenomenon. However, five respondents attributed "high" importance to it, and we will hear from these again when we consider the closely-related question of revenge versus peace.

On the other hand, those commenting on the statement placing blame on the federal government seemed to be basing their opinion on the fact that people tend to blame the federal government for many of their troubles even now. However, the importance of "grousing" would be greater in the postattack situation,

because of subsequent reluctance regarding Government instructions and suggestions, and the kind of questioning that can be expected.

The same respondent, however, cautioned that:

"Blaming" the Government is not the same as turning against it, or acting against it.

Similar comments were made regarding national leaders:

National leaders of countries on both sides of the conflict obviously caused the events leading to the tensions, and then failed to allay the tensions. They are the ones to blame, and the public... looking back at the causes of the war must blame those national leaders.

This allows for a degree of catharsis. But it does not jeopardize the system of government or basic political-economic institutions.

This phenomenon is also discussed above, in the paragraphs on relationships with the federal government.

Thus, in summation, the respondents seemed to feel that the most common reaction would be to blame the enemy, but that the reaction of blaming one's own government or national leaders, though less common, would have nearly as great an impact on the national recovery process.

To fully comprehend the implications of this, we must look at related sets of statements--on revenge versus peace, and on resistance to government programs.

#### k. Revenge versus Peace

Two statements followed closely behind those considering the placing of blame, and are to some extent evaluative of the finding that blame would be primarily placed on the Soviet Union:

82. There would be a strong desire for revenge against the Soviet Union.
83. There would be a strong desire for peace.

On the question of revenge, there was little agreement on either importance or extent, responses being fairly evenly spread over both spectra. However, the weighted indices are both low ( $I_w = 1.1$ ;  $E_w = 1.4$ ), indicating that the revenge

mechanism was considered to be crucially relevant by only a few respondents. The eight respondents who rated the extent of this desire as "large," all gave the same ratings on Statement 79: "People would blame their troubles on the Soviet Union." The same consistency was exhibited by three of the four who attributed "high" importance to this desire for revenge.

On the next statement, the responses surprised us somewhat in their unanimity. No fewer than 27 of the 30 respondents thought that the desire for peace would be "large" in extent, and, much more significant, half thought this fact would be of "high" importance to national recovery. In fact, this statement ranks seventh in weighted importance ( $I_w = 2.2$ ) as well as third in extent ( $E_w = 2.9$ ).

Thus, if one can assume that any sort of trade-off exists between these two desires, our panel seems clearly to favor the notion that the desire for peace will far outweigh that for revenge. However, as one respondent pointed out:

There would be a strong desire for peace and a strong desire for revenge, but government policies would be based on other pressures. [Policy] might be defined by appeals to emotion of either type, but not caused by [it].

It is interesting to compare this result, in which over three times as many respondents thought the desire for peace would be very extensive as thought so about the desire for revenge, with the responses to questions about what would actually ensue. When asked what they thought "would be the war policy... of the United States Government," half thought it would be "to pursue the war," while only a third thought it would be "to offer a truce or cease-fire." And, even more strongly, no less than 23 thought the war would continue (12 predicted a second strike), while only three foresaw an immediate cease-fire. It is clear that the panelists do not consider popular desire to be a prime shaper of either American policy or world events. It may be that the pattern of responses hinges on that familiar keystone of foreign policy stated by one respondent:

The question becomes how peace can be attained, and I believe people will conclude that this is only possible through strength.

Nevertheless, the panel's emphasis on the extent and importance of the desire for peace was strong. It is interesting to compare this finding with the post-World War II bombing surveys done in Japan. In the Japanese survey, the "will to continue the war" was stronger among the survivors of Hiroshima and Nagasaki than in the rest of the nation.<sup>11</sup>

#### 1. Resistance and Rebellion

Just as the section on "revenge" pursued the implications of the placing of blame upon the enemy, so were there a number of statements that might be used to measure the impact of the placing of blame on the federal government and/or national leaders:

24. There would be resistance to federal programs.
25. There would be scattered, local revolts.
26. There would be a nationwide revolution.
27. There would be attempts to secede from the nation.
43. Communications from the federal government would be ignored.
59. There would be rebellions within the armed services.

The panel overwhelmingly rejected all six of the above statements, the highest I<sub>w</sub> attributed to any of them being 1.0 for Statement 25. And even this was simply because most respondents agreed that local revolts probably would erupt, even though only one thought such outbreaks would be of high importance. By contrast, 29 of the 30 respondents said "no!" to Statement 26: "There would be a nationwide revolution." The one dissident respondent stated simply:

The possibility of revolution... is not insignificant... people on both sides may suddenly see that "national security" expenditures merely made them hostages--many now dead. If alternative leaders present themselves, they may find many to follow them. The possibility must be considered.

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<sup>11</sup>The Effects of Strategic Bombing on Japanese Morale (Washington: U.S. Strategic Bombing Survey, Morale Division, June 1947) (ASTIA Doc. No. ATI 13062).

Similar results obtained for the other statements, one respondent summing up the panel's evaluation of Statement 27 with:

I'm sure somebody somewhere would advocate secession, and a few groups would probably even try it...Hardly a serious problem, however.

Even on Statement 24, only two respondents considered resistance to be a serious potential problem, both pointing out that "federal demands will be in conflict with local needs."

Again, some responses to related questions are of interest here. When asked to estimate "the probability of a major, widespread revolt against the federal government," the median response was two percent (IQR = 1 to five percent), which is, of course, rather low. However, when asked "if such a revolt occurred, what do you think is the probability that the government would fall," the median response grew to five percent (IQR = 1 to 12 percent), somewhat higher.

Estimates of "successful secession" and of "total social collapse into complete anarchy" remained very low, with median values of one percent in both cases.

m. Conflict between Groups

A large number of statements explored alternative possibilities of conflict between various social groups:

84. There would be conflict between races.
85. There would be conflict between religions.
86. There would be conflict between socio-economic classes.
87. There would be conflict between hawks and doves.
88. There would be conflict between conservatives and liberals.
89. There would be conflict between sections of the country.
90. There would be conflict between urban and rural populations.
91. There would be conflict between Americans and Canadians and/or Mexicans.

68. There would be a struggle between those calling for strong enforcement of law and order and those who fear the loss of civil liberties.

These statements were marred somewhat by the ambiguity of such terms as "conflict" and "struggle," which caused several respondents to qualify their evaluations with such comments as: "Arguments, yes; violent conflict, no." Even despite this element of confusion, however, the general results were fairly clear. The idea of conflict between religions, with our Canadian or Mexican neighbors, between civil libertarians and "law-and-order" advocates, and between liberals and conservatives were almost universally dismissed as irrelevant. On each of these four statements, over half the respondents simply indicated their total disagreement with the projection by marking "no," and even among those who admitted that some such conflict might erupt, none thought its importance would be high, and no more than two foresaw the extent of such conflict as being large. The only dissenting comments were mild:

Since a significant portion of our population is rather intolerant of religious differences, and as personality types who tend to be intolerant are also prone to scapegoat, I foresee [a] fairly widespread tendency to blame "the dirty \_\_\_\_\_" (fill in Catholics, Jews, WASPs, Atheists, etc., as appropriate)... While I expect this to be a common reaction, I also believe that the emotional intensity will be moderate and that there will be sufficient men of good will, including most religious leaders, to prevent this from becoming a serious impediment to recovery.

I think the conflict would result because [Canada and Mexico] would probably suffer much less than we and a migration, especially south, would probably take place. This is bound to put a strain on relations with those countries.

The other examples of potential conflict--between hawks and doves, sections of the country, races, and classes--were seen as being sufficiently extensive to be of non-negligible (though low) importance to recovery. Class and race conflict, for example, were given  $I_w$  ratings of 1.2. On these two, it is the respondents who disagreed with the possibility entirely who are in the minority, giving such explanations as:

The whole idea of "socio-economic class" is a fabrication and has no real meaning in the analysis of society. . . .

The two types of conflict ranked slightly lower--that between sections of the country and between "hawks and doves" are both examples of statements on which the panel divided into two camps, and for this reason, they are of special interest, and will be discussed later (Cf: Section 4).

The highest importance attributed to any statement in this category was that accorded the following:

90. There would be conflict between urban and rural populations.

Over half the respondents marked either "some" or "high" importance on this one.  $I_w = 1.5$ , reflecting the fact that another third of the respondents marked "no." As another of the statements on which a split in the panel was exhibited, this is also discussed in Section 4.

In summary, it may be said that conflict between religions, political philosophies, and with America's national neighbors was seen by the panel as being of such limited consequence as to be irrelevant to recovery; while conflict between races and classes, while not of major proportions, might be serious enough to warrant consideration. Further, despite a polarization of respondents on each, statements exploring the prospect of conflict between urban and rural populations, sections of the country, and "hawks and doves," elicited a considerable number of estimations of high importance.

#### n. Martial Law and Civil Liberties

Three statements postulated varying degrees of martial law and others considered alternative emergency suspensions of constitutional forms:

9. Martial law would be enforced nationwide.
8. Martial law would be enforced in many areas.
58. Troops would be used to maintain order.

- 67. Local authoritarian organizations would develop.
- 69. People would be forced to work on certain projects, whether they liked it or not.
- 70. The Bill of Rights would be temporarily suspended.

On the first statement, even though a third of the panelists agreed that martial law would be enforced nationwide for at least some period of time, ranked 62nd out of the hundred in importance ( $I_w = 0.8$ ). There was a very sharp division between the panelists who answered "no" ( $n = 18$ ) and those who marked "yes" and went on to attribute some-to-high importance to it ( $n = 10$ ). As an example of panel polarization, this is discussed in Section 4, but it may be pointed out here that there was question as to whether nationwide martial law, if declared, would be either desirable or, in fact, enforceable:

It is a toss-up whether [recovery] would be helped or hindered.

I doubt if the country would be sufficiently well organized for nationwide martial law, at least not for quite a while.

Nine of the 11 government officials marked "no" on this statement, an observation made interesting by the extreme rarity with which opinion seemed occupationally determined.

The next two statements, however, which postulate martial law in various localities and the use of troops to maintain order, were among the twenty statements to which the most importance was attributed ( $I_w = 1.8$  and  $1.9$ , respectively). In both, two-thirds of the respondents marked some-to-high importance and moderate-to-large extent. And the next two statements, pertaining to the development of local authoritarian organizations (a sort of ad hoc martial law) and to forced labor (a possible consequence of such forms of social control) follow close behind, with  $I_w$  of  $1.7$  and  $1.6$ , respectively.

Thus, it appears that the panel, while discounting the significance of organized attempts to sow discord, rebellion, and disorder, still recognizes that disorder, or at least confusion, would be sufficiently widespread to require extensive use of troops and martial (or martial-like) law. Though one respondent pointed out that:

... there will need to be a fair amount of guiding people in the right direction... and trained, disciplined troops are a natural for helping the populace in this way,

the 8 to 1 agreement that "people would be forced to work on certain projects whether they liked it or not" indicates that most respondents envision the likelihood of somewhat sterner measures.

There is an interesting parallel here to the above-mentioned rejection by the government official panelists of the idea of nationwide martial law, in that all of the military respondents foresaw the use of troops to maintain order as not only likely but of some-to-high importance.

The difficulty in extrapolating too many conclusions from data such as these, however, is pointed out very clearly when we consider the last statement in this category, which postulates the temporary suspension of the Bill of Rights. Since at least the de facto suspension of constitutionally-guaranteed liberties would seem to follow logically from the emphasis placed on the above statements, one would be surprised to note that this statement ranked 74th in importance ( $I_w = 0.7$ ). Since this statement was one of the six on which all respondents were requested to submit explanations, we can look at this apparent discrepancy in some detail.

Precisely half of the responding panelists marked "no" on this statement, but on reading their explanations for so doing, one finds that half of these did so on the assumption that the statement referred to de jure suspension--a formal declaration suspending rights--and another third of them qualified their "no" response with a statement such as "except for the restrictions of martial law." Thus, most of the apparently strong disagreement with this statement can be attributed to semantics. It is interesting, however, that so many respondents see a formal suspension of civil liberties as inconceivable, especially considering the recent invoking of the War Measures Act in Canada for such a relatively minor threat to internal order as that posed by the FLQ.

About one-fourth of the responding panelists agreed that the Bill of Rights would be suspended but evaluated the importance of this fact to recovery to be "low." The explanations for this low evaluation point out that the suspension would

be limited, in that "some" rights would be "partially" suspended in "some" areas "for a short period of time."

And the remaining quarter, who evaluated the importance of this suspension as some-to-high, have their position best stated in the following paragraph:

Martial law is by definition a suspension of the Bill of Rights... The short run success of martial law where needed is of HIGH importance to the recovery, to gain the necessary stability early. That it be removed and the operation of the Bill of Rights restored at the appropriate time is at least of SOME importance to recovery. Ultimately, it might become [of] HIGH [importance], because if the people's rights were not restored when they were ready, the whole recovery effort could turn sour, breeding resistance and repression.

But no matter how deeply one probes the reasons for one or another response, questions continue to remain--for example, of the six panelists who thought the existence of forced labor would be of "high" importance to recovery, five attributed little or no significance to the suspension of rights which forced labor implies.

#### o. Religion and Morality

Into this admittedly quite broadly defined category, we can place the five statements which consider the effects of and on religion and a couple of other related statements:

13. People would turn to religion for understanding and solace.
62. People would abandon their old religions.
63. People would be open to changes in organized religion.
64. Religious people would be more responsive to the needs of others than would non-religious.
65. People would be more interested in personal, inner-directed religion than with formal, public religion.

71. People would become more "moral."

12. New cults, superstitions, and taboos would arise.

With the exception of the first statement listed above, with which most panelists agreed and which was evaluated as being of mid-range importance ( $I_w = 1.3$ ), statements in this category were among the lowest in relevance to recovery. The idea that "people would abandon their old religions" was rejected soundly--over two-thirds of the panelists disagreeing with the statement entirely--while only one-sixth agreed with Statement 65, and most of them admitted that they didn't "feel very strongly about it one way or the other." The most interesting aspect of Statement 65, which was an attempt to probe the respondents' concepts of the form of postattack religion, was that nearly half the respondents refused to respond to it at all, implying that either the statement was incomprehensible or offensive, or that our panelists put little thought to that aspect of postattack life. The general intent of the statement, however, was stated by one respondent with experience in the area:

Based upon my own experiences in times of trouble (flak, aircraft fires, illness), religion becomes much more personal. The formal rituals might not be too important....

Although most respondents agreed that people would be "open to changes in organized religion" and that "cults, superstitions, and taboos" would emerge, very few attributed much importance to the phenomena. In fact, these two statements, along with the two suggesting that people might become more "moral" and that "religious people would be more responsive" than others (both of which were rejected by most respondents), are all among the lower third in importance to national recovery, the highest  $I_w$  being 0.7.

It should be pointed out that most of these statements suffered from the variety of semantic interpretations attached to them. For example, the minority supporting Statement 64 seemed to do so because the statement was a tautology by their definition of religion--i. e., religious people are "by definition" those people who are responsive to the needs of others. Those rejecting the statement, on the other hand, were often those using some social definition of "religious people"

such as "church-members." Another respondent refused to answer at all, explaining that:

The Black Muslims represent a "religion." Not all "religions" teach the love of God and the golden rule.

But, perhaps he had not met any followers of Elijah Muhammad. Similar problems existed with the terms "moral" and with such loaded expressions as "cults, superstitions, and taboos," the evaluation of which might have been very different if the less pejorative (but essentially equivalent) expressions "new religious sects, systems of belief, and religious proscriptions had been used. This hypothesis is supported by some of the persuasive arguments cited by respondents:

The attack would bring people face-to-face with death, indescribable disaster... [and] ultimate destiny....

Given high ambiguity, any promise of uncertainty reduction will hold appeal.

In many places, if people want to practice their religion, they may have to rely on clergy of other denominations or faiths....

But it is the "turning to religion for understanding and solace" that panelists considered to be most extensive, if of only secondary importance to recovery. This is essentially consistent with the panel's evaluation of the "need to have events interpreted" (Statement 37) which, though considered to be of less importance than such needs as for information and instruction, was still estimated as being moderately widespread and of some importance.

#### p. Postattack Values

Two statements directly questioned the effect of the attack on systems of values, social norms, and the like:

75. There would be a strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions.
76. People would be anxious to try out new systems, values, and life-styles in order to avoid the mistakes of the past.

The difference between the evaluations of these two statements was stunning: Statement 75, which postulates the relatively conservative response of trying to return to the world so shatteringly disrupted by the attack, was ranked in the top twenty statements in both extent and importance ( $I_w = 2.0$ ). Only one panelist disagreed with the statement, and well over two-thirds attributed some-to-high importance and moderate-to-large extent.

The second statement, however, which postulates a perception of the war as signaling a failure of the old forms and some attempt to restructure society, was among the bottom third in both extent and importance, with two-thirds of the panelists attributing little or no importance to it. This is somewhat inconsistent with the ranking of Statement 96: "Social attitudes would become more conservative" in the bottom third (though there is a semantic problem here), but quite consistent with the general findings of disaster research.

An interesting sidelight is that there is some indication of a "generation gap" among our panelists on these statements. If we divide the panelists into three groups by age, we find that the youngest group (42 or younger) disagreed with Statement 76 by a ratio of 6 to 2, while the older third (over 50) agreed by the same ratio--thus, the younger respondents were less likely to predict the radical reaction than were the older respondents. Similarly, the younger group tended to attribute slightly more importance to Statement 75 (the return to pre-attack values) than did the older group.

#### q. Evacuation

The two statements on evacuation were subject to a great deal of mis-interpretation which makes them difficult to analyze:

44. Attempts would be made to evacuate danger areas.
45. Attempts would be made to evacuate the country.

The statements were intended to cover all forms of "escape," both planned and spontaneous, but many respondents apparently only considered formally organized evacuation. Using this limited interpretation, Statement 45 becomes of course

inconceivable, and so was rejected almost universally. However, even the few panelists who considered the case of individuals or small groups fleeing on their own to Mexico or Canada were agreed that it would be very few and that the impact on recovery would be low ( $I_w = 0.1$ ).

However, the first statement was evaluated as describing one of the ten most important phenomena in the questionnaire ( $I_w = 2.2$ ). Since no comments were submitted on this statement, it must be assumed that respondents felt the truth and importance of such limited evacuations to be self-evident. We have all read too often of the suffering of refugees fleeing from disaster areas to add anything of note to that sad image. Their plight is seen as among the most serious problems confronting the nation.

#### r. Relief versus Guilt

Two statements compared alternative individual reactions to finding one's self alive in the midst of such carnage:

97. Survivors would feel great relief over having been spared.

98. Survivors would feel great guilt over having been spared.

Almost all respondents chose the first statement as describing the more common reaction--it was described as being moderately extensive ( $E_w = 1.5$ ), though of fairly low significance to recovery ( $I_w = 1.0$ ). On the other hand, the panelists were evenly divided on whether the second reaction--guilt--would occur at all, despite the fact that it is described rather frequently in the literature, and very little significance ( $I_w = 0.6$ ) was attributed to it. Perhaps the dilemma is resolved by considering the following comments on the time-frame involved:

... The evidence is ample and rather clear. [Guilt] may be a DELAYED effect, and not an immediate consequence of the attack. But nonetheless, the time perspective is NOT given in the items.

The feeling of guilt by survivors is a common phenomenon with troops in battle. I am convinced that this would be long-lasting, and hence feel that its affect on recovery would be great.

#### 4. Differences of Opinion

In this section, we will investigate those statements in the questionnaires on which the panel divided into opposing schools of thought. Such an inquiry should be of particular interest, first as a means of obtaining a clearer understanding of the panelists' perceptions of the subject; second as a means of identifying those aspects of the area which are as yet unresolved, and which thus are deserving of further study; and third as a means of probing more deeply still into the phenomena themselves.

The statements will be considered in groups defined with regard to subject matter, and some attempt will be made to identify threads of reasoning which run from one subject to another. Unfortunately, it is beyond the scope of this study to pursue the logical path much further, and to identify complex commonalities between subgroups of respondents. There are numerous indications that such "opposing camps" do exist, but they could only be tracked down by exhaustive cross-correlation of the responses to large numbers of questions, a task which we cannot undertake at this time. The three groups into which the respondents naturally divide--government, military, and private citizen--did not in most cases differ greatly in their responses; i. e., there was as much disagreement within such subsets of panelists as there was between the subsets. However, any number of other parameters are deserving of study--age of respondent, education, experience in the field, political persuasion, perceived probability of war, personal experience of disaster conditions, and familiarity with the literature, to name just a few of the data points gathered already--and, in addition, one would like also to compare the response patterns on pairs of questions--for example, how does that subset of panelists who consider factional conflict to be a major problem regard the prospects for the acceptance of martial law? Such interesting questions, for the most part, must await some future opportunity before we can do more than speculate.

a. Amplified Rebound

Two statements dealt with what has been called "the amplified rebound"<sup>12</sup> effect, " by which the remotivation of survivors carries society beyond its pre-existing levels of productivity and growth. The two statements speak for themselves:

99. After the initial shock and inactivity would come a hyperactive rebound of energy and activity.
47. People would be filled with renewed energy and motivation.

Respondents were polarized into unmistakably opposing camps on both of these statements, a majority rating the phenomenon as being of Some-to-High importance, and a minority expressing complete disagreement with the statements. The modal evaluation of the majority was also that the effect would be Moderately extensive. Despite this polarization, both statements were accorded considerable importance,  $I_w > 1.5$  in both cases, which indicates that the majority rated them as quite crucial, counterbalancing the zero ratings submitted by the minority. Since our requests for explanations went to panelists whose responses fell between the two positions, we have no narrative arguments for either (a result obtained on most of these statements on which the panel divided). Thus we shall have to search elsewhere for clues as to the fulcrum of disagreement.

There were four panelists who answered No to both statements. Three of the four are in their thirties, and none has more than three year's experience in the civil defense/nuclear war field. All of them predicted elsewhere that survivors would be family-centered, willing to sacrifice others to the benefit of their families, and half of them considered that many survivors would "fall into despair," both minority positions.

On the other hand, all of the six panelists who were in the majority camp on both statements (rating them as being of considerable importance and extent), are over 40, and half of them have over ten year's experience in the field. Several

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<sup>12</sup>Cf: C. E. Fritz, "Disaster," in Merton and Nesbit (eds.) Contemporary Social Problems (New York: Harcourt, Brace & World, 1961), p. 694.

of them responded elsewhere that one effect of the attack would be to make people more "moral," and all of them disagreed that survivors would "fall into despair." As a very general indication, the minority seemed primarily concerned with psychological consequences of the trauma--fear, withdrawal, introversion, etc.--while the majority commented more often on the social impacts--government response, training, leadership posture, and so on.

#### b. Federal Power

Three of the more important statements on which the panel was divided had to do with the effects of the attack on the relationship between the people and the federal government; i. e., on the changes in influence and power of the federal government and in the amount of interest and concern survivors would have in it:

52. The influence and power of the federal government would be reduced.
11. People would be less interested in or concerned about the larger society; e. g., the nation as a whole.
74. People would be more concerned with the fate of the nation than with that of their state or region.

The majority position was expressed by marking Some importance and Moderate extent on the first two and by disagreeing with the third, and the minority position was expressed by the reverse pattern. One immediately obvious break between the two positions is that nearly all the nongovernment scientists on our panel joined with the majority in each case--that is, the "civilians" more often predicted a loss of federal power than did other respondents. Conversely, government officials on the panel were most "loyal," in that about half of them joined in the minority opinion in each case.

There was a definite tendency for those who did not think the power and influence of the federal government would be reduced to attribute considerable importance to the imposition of martial law, perhaps implying that the government would not allow its power to be reduced. Also, most attributed some importance to the idea that people would become more submissive, perhaps implying that local leaders might exert more influence than the more distant federal leadership.

Of those who attributed High importance to this loss of power, however, only one attributed more than Low importance to the prospect of resistance to federal programs, though all agreed that there would be scattered, local revolts. Thus, they apparently did not think that the loss of power would reach disastrous proportions.

### c. Conflict

Five of the statements on potential conflict between groups produced splits in the panel:

90. There would be conflict between urban and rural populations.
84. There would be conflict between races.
89. There would be conflict between sections of the country.
87. There would be conflict between hawks and doves.
88. There would be conflict between conservatives and liberals.

There was of course some semantic confusion here about the word "conflict," and this contributed somewhat to the polarization--some defining the term broadly, and others limiting the definition to violent struggles. But even beyond this consideration, the polarization was strong: nearly half the panel answered No to at least three out of the five statements, and almost one-third attributed considerable importance and extent to three of the five types of conflict. Further, the panel split roughly along the same lines on a number of other statements. For example, those downplaying conflict also disagreed with the significance of the emergence of cults (Statement 12), fights over resources (Statement 22), role conflict (Statement 31), and the ignoring of federal pronouncements (Statement 43); while those who foresaw considerable conflict tended to agree with all those statements.

Here, then, we have apparently encountered a basic bone of contention between two classes of respondents--those who strongly emphasize the observation (made in studies of previous disasters) that a common consequence is increased social cohesion; versus those who contend that the magnitude of the shortages and intensity of suffering would overwhelm such tendencies, and lead toward increased social disintegration.

d. Disorder

The same theme (with some of the same advocates) carries over into the three statements on the effects of widespread social disorder:

- 54. Law enforcement systems would be overwhelmed.
- 9. Martial law would be enforced nationwide.
- 56. The legal/judicial system would collapse.

Two of the three respondents who disagreed with all the statements in the preceding category (conflict) also disagreed with all three statements in this category. The converse, however, is not true--those concerned about conflict between major social groups tend to attribute little importance to these three factors, perhaps implying that, in the wake of such major social upheavals, enforcement systems would be all but irrelevant, since they themselves would be torn by the same sorts of conflict as the rest of society. But a more likely interpretation is that a different sort of disorder is postulated by those who stress the importance of law enforcement. This is supported by an analysis of the next category.

e. Concern with Family

- 18. People would be family- (or primary-group) centered, willing to sacrifice others to the benefit of their families (or groups).

On this statement, there was fairly strong agreement among the entire panel that the statement was true for at least some portion of society, but the panel divided on the question of how extensive the effect would be.

On close analysis, it turns out that many of the differences in opinion discussed earlier in this section seem to hinge on this factor. Let us consider those respondents who see this factor as being very widespread--about one-third of the panel do--and compare their responses with those of the slightly more than one-third of the panel who view this effect as minor in extent. For convenience, we shall label the former group as "family-centered," and the latter as "non-family-centered."

Some 70 percent of the family-centered group disagreed in principle with the concept of amplified rebound (as expressed in Statement 99), while 83 percent of the non-family-centered group not only agreed, but attributed considerable importance to it.

Moving to the next category, we find that, while 70 percent of the family-centered group agreed that people would be "less interested in... the nation as a whole" (Statement 52), and thus that "the power and influence of the federal government would be reduced" (Statement 11), approximately 70 percent of the non-family-centered group attributes little or no importance to these speculations. Half of that group disagreed entirely with Statement 52.

Results continue to be interesting on the question of conflict. Regarding conflict between urban and rural populations, 80 percent of the family-centered group expect such conflict to be quite extensive (Moderate-to-Large), while 75 percent of the non-family-centered group foresee little or no such conflict (No, or Minor extent). Though one would expect correlation on that statement, since such conflict might well be expected to take the form of migrating urban families versus entrenched rural families, conflict between sections of the country or between various political persuasions would not likely be family-oriented. And so we see less correlation on statements considering such types of conflict. But even here, there is some interaction: from 60 to 90 percent of the non-family-centered group of panelists attribute little or no significance to the types of conflict described in Statements 87, 88, and 89, perhaps implying that those who do not foresee problems developing between families or primary groups tend not to see problems arising between other groups either.

And on the three statements which we have categorized as relating to social responses to disorder, the comparison is very striking. On all three (54, 9, and 56), fewer than 30 percent of the family-centered group of panelists marked No, while up to 80 percent of them considered the impact of collapsing legal and enforcement systems and the imposition of martial law to be of Some-to-High importance. In contradistinction, the non-family-centered group registered a

consistent 83 percent No or Minor extent evaluation on all three; i. e., an evaluation that none of the factors would be significantly widespread. Thus, we see that there is a very close correlation between the panelists' perceptions of increased family cohesion and their predictions that social disintegration would overwhelm standard social control mechanisms, requiring the creation of extraordinary mechanisms such as universal martial law. Whether this relationship is perceived as causal is a question that bears further study.

But it can be said that respondents who foresee survivors devoting such large amounts of their concern and effort to family survival that their concern for non-family members is decreased, also foresee significant problems arising from a concurrent loss of interest in the national entity and federal government, conflict between groups with varying access to survival resources, and general social disorder of an extent likely to overwhelm normal control mechanisms; and that they do not see these negative factors being alleviated to any great extent by any resurgence of energy or greater and more selfless social interaction. It would be of great interest to trace this dichotomy of opinion further, by considering other factors covered in the questionnaire, a pursuit not feasible in the current study.

#### f. Docility

Another statement on which the panel divided was concerned with a possible tendency of survivors to respond to a herd instinct, waxing docile in an attempt to allay anxiety and avoid confrontation with imponderably painful decisions:

15. People would be more submissive, and ready to follow any kind of leader who arose.

The split in opinion here was unique, in that it ran almost universally along occupational lines--all but one of the military respondents rejected the statement as inconceivable, while only one of the government officials on the panel did so, the rest attributing considerable importance to this tendency (non-government scientists were evenly divided between Yes and No responses). One is tempted to draw all sorts of inferences from this, but all would be speculations unsupported by this first analysis of the present data.

#### g. Economic Planning

Nowhere was the panel divided more sharply than on the following statement:

50. Rational economic planning would be impossible.

Two-thirds of the panel solidly rejected this statement as untrue, but a small minority (one-sixth of the panel) not only agreed, but attributed the highest possible importance to it. Once again, investigation proves this question to be closely related to others in this section. All of those holding the minority position that rational economic planning would be impossible also agreed with the statements (discussed above) that "people would be more family... centered, willing to sacrifice others to the benefit of their families..." and that "people would be less interested in or concerned about... the nation as a whole"; and, consistently, all rejected the notion that "people would be more concerned with the fate of the nation than with that of their state or region." Further, none of them thought that "religious people would be more responsive to the needs of others than would non-religious," another statement on which there was a polarization of the panel. Most significantly, however, all but one attributed High importance to the result that "complex organizations and institutions would break down or fragment," and the one dissenter here did so on his belief that "a strong government, backed by the military, would emerge." All panelists taking this minority position were over 41 years old, and none were economists or government officials.

Thus, we can say that, while most respondents maintain faith in economic planning even under such unprecedented amounts of stress on the system, a closely-knit minority feel that the general and pervasive disintegration of society at all levels into fragmented and essentially autonomous special interest groups would render such planning meaningless.

#### h. Religion and Ethics

The two remaining statements on which the panel divided were:

64. Religious people would be more responsive to the needs of others than would non-religious.

66. Corporations and industries would continue to pursue selfish interests.

As described in the preceding section, semantic problems render analysis of these statements all but impossible. In the former, the problem hinges on the definition of "religious," which to some is identical with responsiveness to the needs of others. Even so, sixty percent rejected the statement. The latter statement is of course very badly loaded, and this was recognized by many panelists.

i. Lack of Agreement

There were several statements on which the panel failed to reach any degree of consensus whatever, responding instead with almost complete randomness. Very little can be said of these statements on the basis of the present data, except that they must represent, topically, areas deserving of further study. And the topics are not irrelevant ones, by any means.

Two of them have to do with what might be the very crucial questions of who gets blamed for the holocaust and how the people respond to this blame:

77. People would blame their troubles on the federal government.
82. There would be a strong desire for revenge against the Soviet Union.

These factors are discussed at length in the preceding section, but the lack of agreement among the panel as to how to evaluate these factors is very intriguing. A correlation analysis of responses to these statements with responses to a number of other statements in the questionnaire (e. g., those on political reactions, scapegoating, guilt, war policy, etc.) might prove very illuminating. As it happens, another of these statements on which there was little agreement does seem to be related. On the statement:

97. People would feel great relief over having been spared.

responses seem to form similar patterns--about half of those who rejected Statement 97 also rejected Statement 77, for example.

Finally, the statement on which there was probably less agreement among the panel than on any other in the questionnaire happens to be on what is clearly one of the most crucial topics facing those who must plan the federal response to nuclear attack:

51. Money would cease to have value and a barter system would develop.

As pointed out in the extensive discussion of this statement in the preceding section, separation of this statement into its two parts--the loss of monetary value and the emergence of a barter economy--might have yielded more consensus, since the two are not mutually necessary one for the other. But it is also very clear that the responses and narrative explanations offered by the panelists on this subject add up to a very good argument that far more study is warranted here.

#### Part D. Quantitative Estimates

One of the objectives of the study was to convert identified social and psychological factors into a quantitative form which would permit them to be used in subsequent systems studies. Pursuant to this end, a number of questions were included in the Round Two Questionnaire which requested the panelists to make numerical estimates of the impact of the factors under discussion on important social processes--particularly on the availability and efficiency of the labor force. Since this was pure forecasting, the Delphi procedure could be applied in a straightforward manner, and, in Round Three, the same questions were iterated in hopes of convergence.

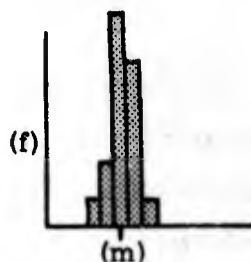
Some convergence did occur, as expected, but, with a few exceptions, the convergence was not so marked as to allow us to speak of "consensus." Perhaps, with additional iterations, additional convergence would have increased the precision of our data. But it seems likely, especially considering the comments made by respondents, that the content of the questions would not allow close agreement when it comes to numbers. It may be that a major finding of this study lies just in that observation--that, while a great deal of agreement might exist among discussants of these social and psychological processes on the verbal level, the agreement diminishes significantly when an attempt is made to translate concepts into numbers. In fact, it may be that a fitting preface to this section was written by one of the three panelists who refused to guess at most of the numbers:

I have absolutely no idea how to estimate any of these figures, and don't know anyone who could assist. Any answer given would be a worthless guess.

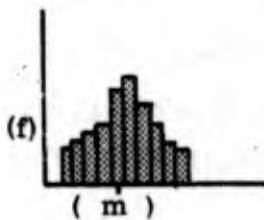
Nevertheless, some very strong patterns of agreement emerged on certain variables, and, even on those where the agreement was less pronounced, the responses seldom fail to be interesting. Before we can discuss these, however, we should define a few terms.

Basically, patterns of response can be said to fall into four categories, defined loosely by the appearance of the histograms generated:

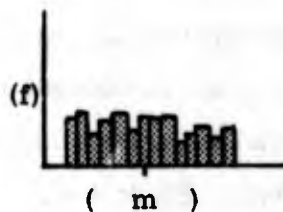
(a) Strong agreement:



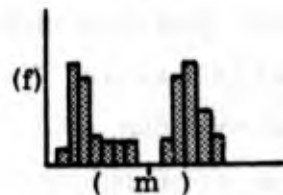
(b) Loose agreement:



(c) No agreement:



(d) Bimodal:



The "m" in the above charts indicates the median response, and the brackets about it correspond to the limits of the IQR, or InterQuartile Range (the range within which half the responses lie). One can see that in pattern (a) "strong agreement," the median alone is a very good descriptor of the results. In pattern (b), however, the median only tells half the story, and the IQR is needed to describe the spread in responses.

In the remaining two patterns, the median is of less value, though the median plus IQR in pattern (c) gives a fairly good indication of the results. In pattern (d), however, both the median and the IQR are meaningless.

We will refrain from formulating a precise set of distinguishing characteristics for these four categories, to allow us more freedom in interpreting results.

But the above terms will be utilized to discuss, in a general way, the extent and form of consensus found to exist on the questions analyzed below.

### 1. Aggression/Cooperation

The first two sets of questions had to do with changes in the amount of aggressiveness and cooperation between selected individuals and groups. Item B2<sup>13</sup> probed the tendency of survivors to "react destructively against others" on the basis of such attitudes as "every man for himself," "my family against all others," "my race against other races," and "my religion against other religions." With one exception, the estimates were characteristically very low. Over two-thirds of the panelists estimated the proportions of survivors who would participate in any religious confrontations at 1 in 20 or less (median = 2 percent), while the same two-thirds thought the percent who would react on racial or "me-first" grounds to be 15 percent or fewer (medians = 10 percent in both cases). On all three estimates, the agreement could be described as "strong," though the subset of panelists employed by the government were a little less pessimistic than their colleagues, giving median estimates only half as large.

On the question of how many would place their family's survival far above the welfare of others, however, there was not so much agreement. The median estimate was 40 percent, but the IQR was from 20 to 60 percent, with as many estimates falling in one range as another. The total range of estimates ran from 1 percent to 100 percent.

So, though we may say that while the panel agreed that complete egoism and racial and religious fanaticism would be very minor reactions statistically, there was some indication that preoccupation with one's own family might be common enough to pose serious problems, since about half of the panel estimated that at least half of the survivors would find themselves "acting destructively against others" on the basis of family survival.

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<sup>13</sup> NOTE: The complete tabulation of these results may be found in Appendix B.

Item B3, on the other hand, investigated the converse proposition, that "survivors might be expected to react with increased social constructiveness, . . . cooperating more willingly than normal" with their own families, neighbors, and other races and religions.

Agreement was weak on these questions, but virtually everyone thought most survivors would get along better with their own families (m = 80 percent), and two-thirds thought that at least half the survivors would cooperate more willingly than normal with other families and neighbors, and with adherents to other religions (m = 70 percent in both cases). The question of increased cooperation between races yielded a lower median (50 percent), indicating somewhat less optimism in that area. An indication of bimodality on the question of increased cooperation between religions and part of the broad range of responses on this section can be explained by the several comments to the effect that:

I assume that high cooperation already exists.

With respect to other religions, people generally cooperate without knowing about the religious background of others and would probably continue to do so, but that implies little increase in such behavior.

Also, several panelists described religion as "nonsalient" and "irrelevant," which implies something about their confidence in the decrease in religious prejudice in this country in recent years.

It is interesting that the estimates offered by those respondents in the armed services tended to be slightly less optimistic than those of their colleagues. For example, their median estimate of the percent of survivors more willing to cooperate with other families and neighbors (55 percent) was fifteen points lower than the overall median (70 percent).

But the panel's overall position on this section is best summarized by the following comments:

The overriding concern of people in a postattack situation is family, not race or religion. Racial feelings will be more influential than religious feelings, but nowhere near as strong as personal-family feelings.

[But] these are highly variable--if survival needs can be met by cooperation, then most people will cooperate with each other in spite of present differences.

## 2. Communications

The next set of quantitative estimates, though not strictly speaking estimates of social or psychological factors, were included to give us a better feel for the assumptions held by the panelists about physical damage and the ability of society to muster forces to repair it. These had to do with the state of communications in the nation at three points in time--one week, one month, and six months after the nuclear exchange. In particular, panelists were asked to consider "communication with the federal government," and asked to estimate the percentages of survivors who would be "completely cut-off," in "sporadic and unreliable" touch, "able to receive... with some effort," and "in free and relatively easy communication" at those three times.

Fairly strong agreement was registered on the first two categories. Considering the median responses, the percent of survivors completely cut off from communication with the federal government was estimated to drop quickly from 25 percent (at one week), to 10 percent (at one month), and to 1 percent after six months. The figures for the percentage in sporadic and unreliable communication with the government were quite similar: 25 percent, 15 percent, and 5 percent at the same points in time.

Thus, it is clear that the panel is generally confident that communications would be restored expeditiously--from an initial estimate placing half the population effectively out of touch during the first week, the panel predicts that half of these could be reached in the next three weeks, and that an almost negligible 1 in 20 would remain unreached after half a year. It may be noteworthy that those panelists currently employed by the government were not quite so optimistic, since their median estimate of those "in sporadic and unreliable" touch after six months was 10 percent. But as one respondent pointed out:

After six months, more than 5 percent of the population surviving are likely to remain disaffected and refusing to contact or be contacted by the central government.

There was considerably less agreement on the other two categories, perhaps partially because of some definitional problems. The median estimates of the percent of survivors "able to receive communication from the federal government with some effort" were 20 percent (at one week), 30 percent (at one month), and 25 percent (after six months), which is a not unreasonable pattern, if one assumes that survivors in this category move out of it (by improving their conditions) at about the same rate as those in lower categories (in less reliable communication or cut off) move into this category. But the IQRs are spreading as the median fluctuates, until the IQR about the six-month estimate ranges from 5 percent to 50 percent. There is also some indication of bimodality here, with almost half of the respondents estimating 20 percent or less and an equal group estimating over 40 percent.

Similar results on the last category, where the estimates for those in "free and easy" communication grow quickly from 15 percent (at one week), to 50 percent (at one month), to 80 percent (at six months), but where the IQRs once again cover nearly half the scale. The only obvious reasons for this lack of agreement is that a number of semantic problems were raised--some panelists did not like the term "free and... easy," others questioned whether one-way or two-way communication was intended, and still others disregarded the idea that the four categories were supposed to be mutually exclusive, and thus add to 100 percent.

But whether through these definitional problems or through more basic disagreement, there is real divergence of opinion. On the third category, for example, those "able to receive... with some difficulty," about an equal number of panelists estimated that the percent would steadily rise with time as estimated that it would steadily decline. And lesser numbers of respondents predicted that the percent would fall and then rise, or rise and then fall. In short, the results do not resolve into any meaningful pattern.

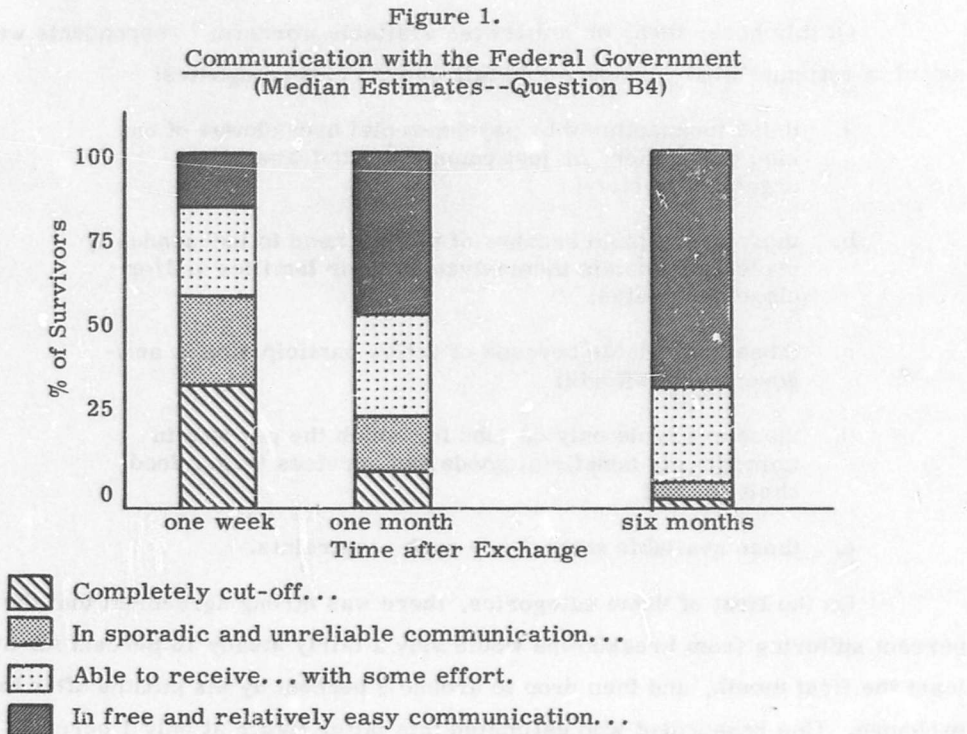
On the basis of the first two categories, however, it can be said that most panelists expect that:

... communications would be rather quickly restored, and that almost all people would [soon] have access to some community receivers,

but also that:

Considering the extreme vulnerability of broadcast transmitters to EMP, network/news wire circuits to destruction of switching centers, and electric power systems to EMP, physical destruction, and sequential operational failure, ... in the first week, with present capability, there is a very large and significant void.

Figure 1 pictures the results in graphic form.



### . Availability of Labor

This set of questions (labeled D1 in Round Two and B13 in Round Three), was intended as an overall summation of social and psychological effects on one crucial postattack variable: the availability of labor. Respondents were asked to consider, as a base for estimation, "the surviving, physically healthy and uninjured members of the labor force, which under normal psycho-social conditions would be available for work." No mention was made of whether this base could be calculated by simply applying casualty rates to the pretattack force (i. e., whether nonworkers might become potential workers, etc.), or of the question of how this base would vary over time, as previously healthy survivors fell ill, and vice-versa. Thus, respondents were asked to bring their own assumptions to bear on the question.

Of this base, then, of "otherwise available workers," respondents were asked to estimate what percent would fall into various categories:

- a. those incapacitated by psycho-social breakdowns of one kind or another, or just complete withdrawal from organized society;
- b. those unavailable because of the felt need to independently protect or sustain themselves or their families and/or close associates;
- c. those unavailable because of active participation in anti-government efforts;
- d. those available only on jobs for which the pay was in immediately beneficial goods and services (e. g., food, shelter); and
- e. those available without any such constraints.

On the first of these categories, there was strong agreement that the percent suffering from breakdowns would stay a fairly steady 10 percent for at least the first month, and then drop to around 5 percent by six months after the exchange. One respondent who estimated this latter figure at only 1 percent explained:

...by six months, I assume virtually all persons will have improved from complete incapacitation or will have succumbed to the secondary results of such incapacity, and thus will not be around to be counted.

An argument for the higher estimate, however, was stated by another panelist:

Maybe we have a sizeable percentage so incapacitated in the real world to begin with.

Military respondents consistently estimated slightly lower percentages than the rest of the panel on this category.

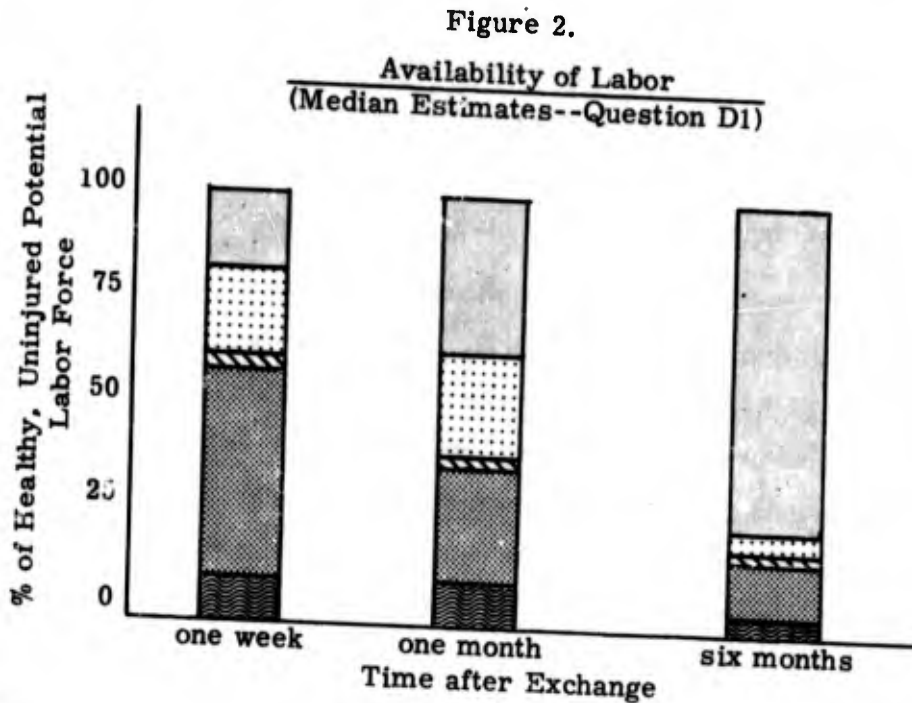
On the next category, agreement was somewhat less strong about the percent operating "independently" after only a week, but the consensus grew with time, so that the 38 percent median estimate at one week is loose, while the 20 percent at one month and the 10 percent at six months are quite firm. This phenomenon is of course related to the "focus" of concern discussed in Part C, Section 3 above, so we need not restate the arguments here.






The category on anti-government efforts drew consistently small estimations, but with a very interesting debate as to the trends foreseen. Few respondents expected the percent of "rebellious" to exceed 5 percent at any time, but while 27 percent of the respondents expected this portion to increase as time passed, a roughly equivalent 29 percent expected it to diminish with time (the rest, 44 percent, expected the portion to stay about the same). In the aggregate, in fact, only military respondents predicted a decrease in rebelliousness over time, while both the government and non-government researchers predicted a slight rise in that factor.

On the next two categories, we return to the questions surrounding post-attack economics and their effect on motivation, a topic covered quite extensively in Part C, Section 3(i): economics. With fairly strong agreement, panelists predicted the proportion of survivors who demand food, shelter or the like for their services to drop from one-in-five to one-in-ten after six months. There were a couple of dissents, however, that bear consideration:

My view is that with the passage of time, the need for work for benefits would increase dramatically [because shortages would become more acute]. The number available without constraints would be high as the smoke cleared, but would decrease as the head of the family resumed his role.

And on the last category, those available "without such constraints," while the results were marred somewhat by a misprint on the Round Three questionnaire, indicated loose agreement that this portion would increase to a high of some 50 to 80 percent by six months after the exchange. Figure 2. portrays these results graphically.

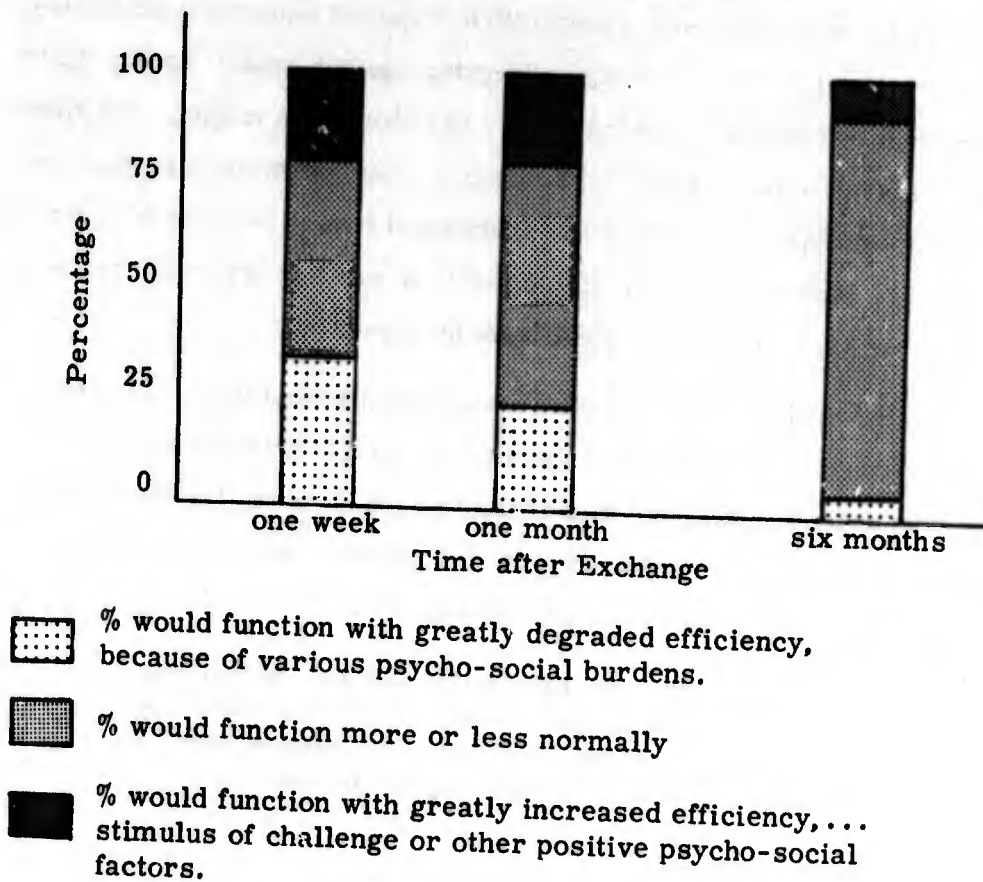


-  % ... incapacitated by psycho-social breakdowns...
-  %... unavailable because of felt need to independently protect/sustain himself... family.....
-  %... unavailable because of active participation in anti-government efforts.
-  %... available... only on jobs for which the pay is in immediately beneficial goods and services.
-  %... available without any such constraints.

#### 4. Efficiency

The next set of questions examined the results of the prior set in more detail--in particular, the panelists considered categories (d) and (e) above, and estimated what percent of these people "actually working on recovery projects" would be doing so with increased, normal, or decreased efficiency. Agreement was rather loose on this entire section, with IQRs of up to 50 percentage points, but there was very general consensus that increases and decreases in efficiency would effectively balance one another out, and that by six months after the exchange, about three-quarters of the workers actually employed would be working at fairly normal levels of efficiency. This symmetry and eventual return to normalcy are illustrated quite clearly in Figure 3.

Figure 3.  
Changes in Efficiency of Employed Labor Force  
 (Median Estimates--Question D2)



Combining the two questions, we see that, after six months, the panel predicts that over two-thirds of the potential labor force would be available without constraints and without degraded efficiency. At earlier periods, however, the picture is not so bright. As late as a month after the attack, the panelists expect that less than half of the potential labor force would be willing to work without immediately beneficial (i. e., non-monetary) compensation, and that, of these, one out of five would be able to function only at a level "greatly degraded" from his normal--in other words, only about a third would be expected to perform as they would have under preattack conditions.

Obviously, the utilization of such a "coefficient of degradation" would have a profound impact on projections regarding the viability of postattack recovery efforts and the rates at which recovery would occur.

#### 4. Revolution, etc.

Several other questions were asked which required numerical estimates for the purpose, once again, of examining underlying assumptions. Among these was that calling for a probability (expressed as a percent) of "a major, widespread revolt against the federal government." The final median estimate here was even lower than the initial opinion on Round Two--it dropped from 4 percent to 2 percent on Round Three. The highest estimate offered on this question was one chance in two, so it is a possibility regarded as significant by some.

However, the next request was for a conditional probability: "If such a revolt occurred, what do you think is the chance that the government would fall?" Nearly half the respondents estimated this chance as higher than the first, and, though the median was only three points higher (5 percent),<sup>14</sup> estimates ranged up to the certainty of 100 percent. As one respondent put it:

If dissent is strong enough to bring about a "major, widespread revolt" while we are still in a state of war, I believe that some accommodation would take place. This accommodation would be thorough enough to amount to a change in government.

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<sup>14</sup>The median for government officials was 10 percent.

And, as another summed up the two questions:

The probability of revolt is low--however, if [one took place], conditions would be so bad that the system would have to capitulate.

In accompanying questions, panelists estimated the probabilities of successful secessions and of collapse into anarchy at 1 percent.

Two questions, added to the Third Round at the request of respondents, are also of interest. One of them asked for the panelists' opinion on what percent of surviving inactive and retired reservists one could expect to report voluntarily for active duty if called after the attack. There was little agreement on this parameter, but the median was 60 percent (IQR from 20 to 75 percent).

The other was a little surprising. The precise question asked was "In your opinion, what is the probability (expressed in percent) that the United States will be involved in a major nuclear exchange in the next twenty years?" The median response to this question was 10 percent, which was only slightly higher than anticipated, but the average of the response was over 20 percent, with more than a third of the panelists giving estimates higher than this figure. It would of course be quite interesting to correlate responses to this question with many others, to see how one's perception of the likelihood of nuclear war interrelates with one's projections of the results of such an eventuality. It is interesting that those who estimated the chance of war as high (over 20 percent) tended to be more experienced in the nuclear attack effects field than those who gave low estimates (under 5 percent). Of the former group, half reported more than 10 years experience, while of the latter, over half reported less than one year of work in the field.

## Part E. Other Questions

A number of other questions were submitted to respondents in one or the other of the two final questionnaires. Most of them have already been discussed in the course of the preceding analysis, but others are sufficiently unique to justify special consideration.

### 1. Priority of Communications

So much in this study has hinged on the problems arising from the disruption of communications facilities, that respondents were asked whether they think that "the government should place a higher priority currently on the establishment of a nationwide communications net which could withstand such an attack." The panelists agreed by a margin of better than 2 to 1 that a higher priority would be in order, which, even allowing for the tendency to rate all priorities as being too low at any given moment, is a sizeable margin. This is perhaps related to the vote of better than 19 to 7 that "the current Civil Defense Program should be expanded," which, interestingly enough, was supported more strongly by military respondents (7 to 1) than by government officials (2 to 1).

### 2. Restoring Communications

Following this question, respondents were invited to comment on what "the federal government might do after such an attack to improve communications," assuming that "the nationwide system were as it is today." A veritable kaleidoscope of suggestions were submitted in response to this question, the most common being to utilize military radio and relay equipment or other mobile reserve facilities; to print and distribute newsletters in the form of leaflets, and to distribute battery-operated radios, possibly commandeered from warehouse supplies. Less frequently cited were such steps as the rationing of batteries, the formal utilization of "ham" operators, and of Canadian or Mexican facilities, and the launching of a communications satellite. And three panelists emphasized that the content of communications would be as important as the quantity--suggesting that the government "stick to facts instead of propaganda," and "assume the tone of a viable government, speaking with one voice."

### 3. Changes in Population Characteristics

The proposition that "the attack under consideration would turn America into a predominantly rural/agrarian society" was rejected by a margin of four to one, indicating that most respondents are apparently aware that less than 7 percent of the current population can be fit into that category, and that an event even so traumatic would not be likely to change society that profoundly.

On the more subtle question of whether "the attack would remove a behaviorally representative sample of the population," the panel was evenly divided. This is another of those results that fairly cry out to be correlated with other responses, but which must await later analysis. The idea behind this question, as stated by the respondent who suggested it, was to discover whether or not

many respondents [are] basing their answers on how they think today's general population would react, which may not be appropriate.

### 4. Independent Variables

Several respondents to the First-Round Questionnaire complained that crucial factors were not covered in the scenario. To follow this inquiry, a section was added to the next two questionnaires in which respondents were invited to evaluate and comment on the importance and likely prospects for these "independent variables."

Foremost among them, by far, was the question of "war policy--whether there ensues peace, a truce, surrender, more war, etc." When asked what their opinions were on this question, nearly half thought that the policy of our government (before knowing what the enemy response was going to be) would be "to pursue the war by nuclear means," while about a third thought that it would be "to offer a truce or cease-fire." Only among the non-government scientist segment of the panel was the prediction that we would offer a cease-fire more common than the prediction that we would continue hostilities. Further, the agreement was far higher that, in actuality, the war would continue, regardless of policy--over two-thirds of the panel agreed to that, while only one-tenth thought there would be an immediate cease-fire.

The next most important independent variable was considered to be the "rationality of the government response--is it wise, politic, acceptable, clear, positive, firm, equable, etc." The panel was undramatic in its assessment of this factor when it was subsequently asked for it. About one-sixth thought the overall response of the federal government would be "less rational than usual," but none predicted it would be "foolish and disastrous." Another one-sixth predicted a response "more rational than usual," and one panelist even expected an "unusually wise and productive" response. Most of the respondents, however, took the middle road, predicting the wisdom of the response to be "mixed"--neither predictably wiser nor more foolish than ordinary.

##### 5. Sensitivity of the Responses to Variations in Attack Patterns

In the scenario used in the study, it was stated that slightly over 100 million Americans were killed or permanently disabled by the attack postulated--that is, about 50 percent of the population. In order to assess the sensitivity of the respondents' evaluations to this statistic, panelists were asked whether their responses to the questionnaires would have differed significantly had that percentage varied to 30 percent, 40 percent, 60 percent, or 70 percent of the population killed or disabled. Not one of the panelists suggested that they would have changed their responses very much if the figure had varied by 10 percent in either direction (to 40 or 60 percent) and only four of them would have responded very differently at the lowest figure suggested (30 percent). The data were, however, thought to be sensitive to higher casualty rates by over a third of the responding panelists. Those who said that their "responses would be very different" with a figure of 70 percent gave such elaborations as the following:

Perhaps we would be more docile in our response, more confused as a people, more agrarian in our remainder...

More isolation, uncertainty as regards confidence in the government.

At some point, probably not far about 60 percent casualties, I believe that the combination of ego trauma, environmental changes, and collapse of many institutions would make the outlook much less sanguine. The prognosis for constructive, social behavior and social reintegration would become grave, while the probability of dysfunctional, maladaptive behavior would grow.

The relative burden upon the survivors is so great when only 30 percent are uninjured that the coupling of greater gloom with the increase in physical burdens would make for a greater tendency for the federal government to be weaker and the social fragmentation greater. The prospects for a meaningful recovery of the "national entity" are in much greater jeopardy.

If the proportion... were 70 percent, I doubt the feasibility of a continuing society of the nature assumed by the questionnaire.

At 70 percent... it is questionable whether meaningful recovery could take place before quite some time.

[70 percent] would be approaching some kind of breakpoint (I don't know where it would be in percentage) in which the possibility of socio-political chaos and disintegration would be much greater....

I think casualties of this magnitude, plus loss of many resources associated with it, would approach the "impossible" threshold. That is, we would be at--or beyond--the point of the Nation going down.

...management difficulties would be about the same in all four cases, but physical difficulties would be greater at the 70 percent level... The important ratios are the number of effective survivors and the amount of industrial capacity, each divided by the total number of survivors. Requirements would be a function of the number of effective survivors plus the number of disabled or noneffective survivors. Flow of goods would depend on labor force effectiveness, industrial plant survivals, industrial balance, effectiveness of transportation and other supporting systems, and intangible institutional and organizational factors.

It should be pointed out that none of the military respondents said they would have changed their responses at any of the varying casualty rates suggested.

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## CHAPTER IV

### CONCLUSIONS

The summary at the beginning of this report provides a general overview of the results obtained in the study, and may be referred to again at this point if desired. In this chapter, the aim is somewhat different--here, we shall look at the results from a slightly different angle, in hopes of highlighting those portions of the findings which are of the greatest practical significance, and exploring the implications of the criticism that many civil defense systems studies ignore the social and psychological consequences of nuclear attack.

In the first section, those social and psychological factors on which the panel was in essential agreement are identified. The second section is a discourse on the general problem of quantifying these factors, as illuminated by the present research. And the third and fourth sections cover the implications of the findings, first with regard to civil defense planning, and then with regard to those areas in which the inability of the panel to agree may imply a need for further research.

#### A. Consensus Regarding the Importance of Social and Psychological Factors

Unfortunately, there is little consensus regarding the meaning of the word "consensus"--dictionary definitions range from "unanimity of opinion" to "the judgment arrived at by most of those concerned." For our purposes in trying to identify those concepts about postattack society about which the panel agreed, however, it is necessary to define our terms with greater precision than this. On the one hand, there were few topics on which the panel reached a unanimous opinion, and on the other hand, a simple "majority opinion" carries little weight if heatedly disputed by a strong minority. Further, the "importance ratings" used in earlier discussions are not adequate indices of consensus, since they fail to identify those cases in which two opposing positions were expressed with nearly equal strength.

For our purposes, then, we need to define what we mean by consensus or agreement in data. In this section, the following definitions will be used:

"Strong agreement" will mean that at least 25 of the 30 panelists agreed with the opinion or evaluation under consideration.

"General agreement" will mean that at least two-thirds of the panelists agreed, and that there was no unified dissenting position held by more than one-sixth of the panel.

Using these definitions, the hundred statements considered by the panel divide into several categories of particular interest:

1. Statements on which there was general (or strong) agreement that the factors described were of great importance to national recovery.
2. Statements on which there was general (or strong) agreement that the factors described were of secondary importance.
3. Statements on which there was general (or strong) agreement that the factors described were of little or no importance to recovery.
4. Statements which were generally (or strongly) agreed to be untrue.
5. Statements on which there was no general agreement but on which the distribution of responses is unimodal.
6. Statements on which the panel divided; i. e., on which the distribution of responses is bimodal.

Statements in the first category are obviously those which should be given the greatest attention by those who must plan the government response to the possibility of nuclear war; statements in the second category are those which, in the opinion of our panelists, must be considered by planners, but the importance of which is not critical; and the panelists imply that statements in the third and fourth categories may be disregarded or assigned very low priority. Statements in the other two categories point to areas where either a great deal more research is needed,

or where the findings of relevant research have been inadequately disseminated. Of course, other categories of equal interest could be defined with equal ease--for this reason, the actual results are tallied in Appendix B, and the reader is invited to make his own analysis for his own purposes.

### 1. Factors of Great Importance

On only eight statements<sup>15</sup> did panelists express strong agreement that the factors described were of "some-to-high" importance. The strongest agreement about the most critical importance was that "people would need" leadership, information, instruction, and reassurance. The near unanimity of the panel on evaluating these fundamental psychological needs focuses our attention on the capability without which they cannot be adequately met--communications between the government and its constituents. And the other statements in this most critical category will be seen to increase our awareness of communications as the key to recovery.

For the next three statements on which there was strong agreement on great importance, though all descriptive of seemingly positive factors, could all have either positive or negative effects, depending on whether communications fail. And such a failure is all but predicted by the last statement in the category. The three positive effects strongly agreed upon--an increase in adaptive social behavior (organizing, assisting, etc.), the emergence of new leaders, and an increase in individual and local innovation--can be expected to have desirable impacts on the national recovery effort only if they are coordinated nationally, and the last statement of great importance raises doubts about the potential for such nationally unified action--for it postulates that people would be more concerned about their immediate localities than about the nation as a whole.

Thus, the criticality of communications runs like a thread throughout this set of first-priority factors. To satisfy the needs for leadership, information, instruction, and reassurance, government must be able both to listen and to speak

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<sup>15</sup> Statements numbered 2, 34, 35, 36, 38, 39, 40, and 73.

for new leaders to direct their followers in a unified direction, they must at least be aware of national goals; for the increased spirit of cooperation and innovative abilities to bear fruits useful to the total society, there must at least be knowledge of national needs; and if the survivors cannot soon be induced to raise their sights above the problems of their immediate surroundings, the likelihood is increased of social degeneration into mutually competitive islands of self-interest, and the inequitable distribution of critical resources in the struggle for individual survival. And it must be remembered that panelists predicted that large segments of the surviving population would be in unreliable contact with the government for several weeks, given existing facilities only. The primary implication is clear (and the panel was generally agreed) that a higher priority should be placed currently on the creation of a communications capability which would survive such an attack.

In the fourteen additional statements<sup>16</sup> which the panelists generally agreed were of some-to-high importance, these themes are continued and elaborated upon. Thus, even though there was general agreement that there would be an important increase in the willingness to cooperate between individuals and between groups, panelists also predicted social introversion in a number of forms: preoccupation with self, family, and primary group; more concern with the present than with the future; and the fragmentation or breakdown of complex organizations and institutions. Such fragmentation of society can be seen to directly imply the factor, also generally agreed upon as being of great importance, that people would act in ways that would be locally useful but dysfunctional nationally.

The disorder seen as resulting from these factors, when compounded with panel predictions of widespread evacuation of danger areas, serious mistakes by the federal government, the flourishing of rumors, and the hoarding of medical supplies (the importance of all of which was generally agreed upon), was predicted to accompany the imposition of martial law in many areas, and the widespread use of troops to maintain order.

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<sup>16</sup>Statements numbered 8, 10, 19, 23, 32, 33, 41, 44, 48, 53, 58, 72, 75, and 83.

Communications continue to appear crucial here, as panelists attributed great importance to the desire for more communication than would be available, and to the very widespread desire for peace (which, perhaps because of the lack of communications, was not seen as having much impact on national policy--there was strong agreement that the war would continue). Finally, the panel generally agreed that the strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions, would be an important factor in shaping the course of national recovery.

## 2. Factors of Secondary Importance.

Agreement was considerably less common and pronounced on those factors regarded by most panelists as of "low-to-some" importance. The respondents were strongly agreed on such an evaluation for only four statements,<sup>17</sup> and on only six others<sup>18</sup> was general agreement expressed. Apparently, there is a small set of factors which nearly all the panelists agree would be of great importance to recovery (those described in the preceding section), but there are very few which everyone sees as being of second-order significance. Instead, the case was more often that statements of mid-range importance in overall evaluation were ranked highly important by a few, of no importance by a few more, and of low or some importance by most, though not by enough to justify our referring to "consensus" as we have defined it.

Most statements which the panelists did agree were of secondary importance, described some of the more negative factors. In this category are an anticipated increase in competitive anti-social behavior, such as looting, hoarding, profiteering, robbery, fights over resources, etc.; a willingness to sacrifice others to the benefit of one's family; the development of local authoritarian organizations; searching for lost loved ones; withdrawal, panic, and irrational activity; and scattered, local revolts. Whether the impact of others would be positive or

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<sup>17</sup> Statements numbered 6, 21, 57, and 67.

<sup>18</sup> Statements numbered 1, 5, 13, 18, 25, and 29.

negative is more debatable: the closing of schools, an easing of conversation between strangers, and a turning to religion for understanding and solace.

### 3. Factors of Little or No Importance

The panelists strongly agreed that neither despair nor guilt<sup>19</sup> would be reactions of any meaningful relevance to national recovery, and they generally agreed that twenty other statements described factors of little or no importance.<sup>20</sup> On about half of these twenty, most panelists agreed with the statement,<sup>21</sup> and on the other half, most panelists disagreed,<sup>22</sup> which they registered by marking "No."

Thus, for example, though panelists generally agreed that some people would blame their troubles on the federal government (or a few national leaders), very few attributed much importance to this problem. Similarly, even though most admitted the existence of such factors as loss of faith in institutions, the emergence of cults, an openness to changes in religion, the formation of groups aimed at continuing the disorder, and a desire to try out new systems, values, and life-styles, the panel was generally agreed that the impact of these factors on the recovery process would be low at the very most. And such psychological reactions as shock, increased fatalism, incomprehension, fear of being alone were evaluated in about the same way--true in some cases, but of very limited importance.

Panelists were evenly divided on whether there would be resistance to federal programs, whether the Bill of Rights would be temporarily suspended, and whether there would be conflict between conservatives and liberals, but they were generally agreed that none of these factors would have much relevance to recovery, even if true,

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<sup>19</sup> Statements numbered 46 and 98.

<sup>20</sup> That is, two-thirds of the panel evaluated the importance of the statement as "low," or disagreed with the statement entirely--the two categories are combined because of numerous indications that there was overlap in the subjective definitions of the evaluations, many panelists using "no" to mean very low importance.

<sup>21</sup> Statements numbered 3, 12, 14, 16, 61, 63, 76, 77, 78, 92, and 100.

<sup>22</sup> Statements numbered 7, 24, 49, 64, 68, 70, 71, 88, and 91.

Finally, at least half of the panel rejected statements regarding such potential problems as a return to more primitive forms of social organization, conflict between civil libertarians and law-and-order advocates, conflict between Americans and their neighbors to the north or south, the desire of workers to be paid in food or clothing; and such potential benefits as increased morality or responsiveness to the needs of others by religious people. And on none of these did more than one out of five panelists evaluate the importance of the factor as more than "low."

#### 4. Factors Rejected as Untrue

The respondents were strongly agreed that three statements<sup>23</sup> were untrue, and they generally disagreed with ten others.<sup>24</sup> Most commonly rejected were statements implying the total failure of the government to rally survivors into an organized recovery program: panelists were agreed that there would not be a nationwide revolution, nor would anarchy prevail. Only slightly less firmly did they reject such possibilities as that attempts would be made to evacuate the country or that there would be massive, psychotic group behavior of a nature that is unprecedented and therefore unpredictable.

Panelists did not think that people would be "paralyzed" by role conflict, abandon their religions, blame themselves or some minority group for their troubles, or enter into conflicts with those of other religious persuasions. And, finally, the panel strongly rejected the notion that nostalgia for the shattered past would significantly divert attention from the problems of the present and future. It should be noted, however, that at least one panelist agreed with every statement (which is natural, since the statements were originally submitted by the panelists themselves)--there was no statement unanimously rejected by the entire panel.

The reader may have noticed that our discussion of the statements in this chapter has divided them into three groups of roughly equal size. On about a third

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<sup>23</sup> Statements numbered 26, 55, and 95.

<sup>24</sup> Statements numbered 27, 31, 43, 45, 59, 60, 62, 80, 81, and 85.

of the hundred statements, there was consensus (by our rather restrictive definition) that the factors described were of either primary or secondary importance, and on another third, the consensus was that the statements described factors of little or no relevance. On the remaining third, no consensus evaluation was reached by the panel. This lack of consensus on evaluating certain factors gives us information of a different sort, since a lack of agreement between experts points to areas in need of further investigation. These results will therefore be discussed in the appropriate section below.

#### 5. Differences between Panelists

From the manner in which the panel was selected (see Chapter II, Section 8), it may be apparent to the reader that we expected to find differences in opinion between our three subgroups of respondents--private researchers, government officials, and military officers. Such an expectation indeed existed, and was based on the role differences between people in the three groups, and the rather large and seemingly significant differences in the amount of experience in civil defense-related work and familiarity with the literature of the field. The median amount of time that military panelists had worked on problems concerned with nuclear attack effects was less than one year; among the government officials on the panel, the median was fifteen years. Similarly, only one-fourth of the military panelists cited three books or reports in the field when requested to do so, while over two-thirds of the rest of the panel did so.

Therefore, we were somewhat surprised when our first analysis of the data uncovered only a few rather minor indications of differences in opinion between these three subgroups of respondents. There were some differences in the manner in which the subgroups responded--for example, military respondents, who understandably ranked themselves lowest in socio-psychological expertise, nevertheless marked the "don't understand/can't decide/have no opinion" response much less frequently than the other groups; and they more often evaluated factors as being of "low" importance than did others, while government officials more often marked "some," and private researchers gave more "high" importance

evaluations--but there were almost no obvious differences in the content of the responses of the three subgroups. For example, the military respondents, because of the above data and their smaller number, might be expected to have dissented from the consensus more often than others--but this was not the case. Actually, it was the private researchers who most often held "extreme" or minority positions, as measured by the frequency of red-circled items on Round Three (Cf: Chapter II, Section C). And furthermore, it was the military panelists who responded most voluminously to the Round One Questionnaire, citing on the average half again as many factors as did members of the other two subgroups.

Differences which did become apparent were not too surprising. For example, government officials seemed somewhat less likely to predict the collapse of government operations than did other respondents, and military officers were more likely to expect the extensive use of troops, and to reject the notion that survivors would become more submissive.

It is possible that a more intensive and exhaustive analysis of the present data would yield some further indications of differences between these three subgroups, but it does not appear that any such differences would be marked. One major and somewhat unexpected finding of the study is that few important differences of opinion exist between the three subgroups in their perception of the social and psychological factors relevant to recovery from nuclear attack.

However, since there are repeated and very obvious indications that different schools of thought do exist among the panelists (as expressed not only by the numerous statements on which the panel divided, but by the diversity of the "explanations" submitted by panelists in defense of their responses), it should be instructive to attempt to correlate membership in such a school of thought with other predictors (such as age, education, experience, perceived probability of nuclear war, self-evaluation, etc.), since the division is seldom along occupational lines. Numerous minor attempts were made during the course of the study to make such correlations on specific topics, and the results of such attempts, though not often positive, were occasionally quite interesting--for example, the discovery that the youngest third of the panelists most often predicted a conservative social

reaction to nuclear attack, while the older third most often predicted a reaction including increased innovation in systems, values, and lifestyles.

We were unable to analyze completely the relationship between such predictors and the associated patterns of response, however, or to undertake the level of effort which would be required to define the various "schools of thought" with any great specificity. Such an analysis would be certain to yield new information on the basic assumptions in contemporary thinking about civil defense.

In summary, it appears that the differences in opinion expressed by panelists cannot be predicted by considering the occupations of those expressing the various opinions. On the other hand, strong differences do exist, and it appears that complex "schools of thought" also exist. The precise nature of these complex sets of opinion and the question of whether other predictors might be correlated with opinion are subjects worthy of further study.

#### B. Quantification of Factors

One of the primary objectives of the study was to convert, wherever feasible, the social and psychological factors on which there was high consensus into a quantitative form suitable for use in systems studies. Several approaches were made to this goal, with varying results.<sup>25</sup> In general, it may be said that agreement is somewhat less pronounced when an attempt is made to quantify factors already agreed upon on a verbal level; that even one Delphic iteration improved the agreement considerably, as measured by convergence; that the most useful types of quantification appear to be those which consider the combined impact of many factors, rather than one specific effect; and that many apparent contradictions remain between estimates made at different times or in different ways, leaving one still cautious about interpreting the overall results.

On the first point, the reduction in agreement when going from verbal evaluation to numerical estimation can best be shown by examples. All but two

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<sup>25</sup> See Appendix B, Section 2.

of the panelists agreed with a statement to the effect that people would be family-centered, willing to sacrifice others to the benefit of their families. But when asked to estimate the percent of survivors who would react destructively against others on the basis of the attitude "my family against all others," the estimates ranged all the way from one percent to ninety-five percent, and the IQR (inter-quartile range) spread from 20 to 65 percent, even after iteration. Many other attempts at quantification produced similarly wide ranges, one going all the way from zero to 100 percent, and IQRs of over forty percent points were not uncommon.

On the other hand, the iteration of such estimations did produce significant changes. When the forty-eight estimates were iterated, almost two-thirds of the IQRs contracted, sometimes by over fifty percent. The average IQR contraction was twenty percent after only one iteration, and even though the largest convergence in Delphi applications is customarily on the first iteration, there is every reason to assume that convergence would have continued had there been time for more iterations.

Because of the immensely complex and largely unknown system of linkages and interactions between various factors, it was felt that an attempt to have the panelists estimate the impacts of individual factors, in hopes of combining them later, would not be likely to produce very reliable results. Because of this, we concentrated on an attempt to have the panelists estimate the overall impact of all socio-psychological factors on specific variables, such as the labor force availability and efficiency. Even in this simplification, however, inconsistencies in the results still leave questions about reliability. For example, over two-thirds of the panel thought that few, if any, survivors would refuse to work unless paid in food, clothing, etc. But when the panel was asked to give a numerical estimate of how many would demand such forms of payment during the first weeks, the median estimate was twenty percent, which could hardly be described as "few."

Nevertheless, despite such inconsistencies, the quantifications obtained (all are tabulated in Appendix B, pp. B-10 to B-13) are very likely the best estimates yet developed of the impact of social and psychological factors on the

prospects for national recovery. Of these, the estimations of diminished availability of the labor force and of changes in efficiency are probably the quantifications that are at once most meaningful and easiest to use as inputs to systems studies of the recovery process.

Though agreement was not too strong regarding the proportion of potential workers who would be available without constraint, there was very powerful consensus on estimating the proportions unavailable because of such factors as breakdown, introversion, rebellion, and demands for payment in kind. And it is clear that such estimations can be translated directly into other studies by applying them as coefficients of degradation to labor-force estimates derived solely from casualty rates and other physical considerations.

The results regarding the efficiency of employed workers form a conveniently symmetric pattern, so that, even though agreement was not strong, the implicit prediction that increased efficiency would be very nearly as common as degraded efficiency provides some support for ignoring this variable.

Estimations of the destruction wrought on the nationwide communication facility, and of the times at which communications would be restored can be considered in two ways--either as a measure of the expertise of the panelists (by comparing these results with other predictions), or as a new expert estimation (since most panelists, both by their positions and by their self-evaluations, seem quite knowledgeable regarding the physical effects of nuclear weapons). In either case, it should be remembered that the question of restoring communications, like so many seemingly straightforward physical questions, covers a very complex set of interrelationships between the physical and the social--it is not only the damage to hardware and the availability of replacement parts that are crucial, but also the management resources, the willingness and capabilities of available workers, the wisdom of decisions regarding content, the receptivity of the audience, and a host of other variables implicit in the assumptions underlying the estimation process. Consensus was reached on only some communications questions, but the ranges of response, as represented by the IQRs, can reasonably be taken as limiting cases for sensitivity analyses.

Most of the other quantifications attempted are best considered as a means of more precisely understanding the verbal evaluations given in other parts of the questionnaire. Thus, the median estimates of such numbers as the percent of survivors more willing than normal to cooperate with members of other races (50 percent) is best understood in comparison with the median estimate of the percent who might react destructively against other races (10 percent), in understanding the panel's evaluation of the possibility of racial conflict. Such quantifications do not easily lend themselves to direct application in the sorts of exercises and studies currently undertaken, but rather might form a basis for changing the structure of such studies to include contingencies not currently considered. At any rate, with the exception of factors which the panel agreed to be very nearly irrelevant (e. g. , religious strife, secession, etc. ), there was little consensus on such estimations.

### C. Implications for Civil Defense Planning

We believe that the findings of this study combine to point in one general direction. Almost without exception, there was strong or total consensus on the importance of the communication function to recovery efforts. Communication, of course, tends to be a general term covering and relating to many different things. We believe that when the panelists agree that people would need information, instruction, reassurance, leadership, etc. , they are talking about different aspects of the same thing. When these statements appear as independent assertions--i. e. , "People need instruction"--they can too easily be perceived as obvious or trivial statements. However, if one analyzes what would have to be true for that need to be met, such statements can be seen as having far more meaning. The questionnaire results could be interpreted as saying that the capability for managing and providing direction and information to survivors is the most critical component of a civil defense capability and that it is also the component which has been and is now most deficient in actuality and most in need of upgrading if civil defense is to be effective.

The panel went on to specify many other factors as important to the recovery process, but most of them can be integrated around the overriding requirements for the management and coordination of all the activities which comprise that process. Thus, the whole set of statements regarding the fragmentation or segmentation of social organization, and the set describing what we have referred to variously as "narrowing of focus" or "social introversion," (in which people become preoccupied with the local, the present, and the immediate social environment to an extent dysfunctional to the national, the future, and the larger social units) can both be understood as providing guidelines for policy planning.

Surely the role of federal civil defense planning must be at once to do everything feasible to resist this fragmentation and self-preoccupation (primarily through the maintenance and restoration of meaningful communications), but also to recognize that, however thorough the preparations and the planned response, it is likely that these tendencies will prevail in some areas for a significant time after such an attack. Civil defense planning must take cognizance of this likelihood by maintaining such sufficient flexibility that isolated, independently-functioning segments of society will be able to operate in such a way as to expedite the eventual reorganization process and to ensure that the recovery efforts such autonomous units might make in isolation will be beneficial to the national effort once the parts are knitted together again. Thus the emphasis is once again on providing management capability, with communications as the key to success, and decentralized flexibility as the backup system where communications fail. It can be pointed out that the proliferation of home shelters, by furthering the tendency toward fragmentation, would compound the management and communications problems.

Even the general agreement among panelists that the disaster would increase the incidence of extreme forms of behavior has implications for the emphasis on communications, for the repeated assertion that increases in positive, adaptive behavior would have a greater impact than would increases in negative, maladaptive behavior points again to the need for leadership to direct such behavior along channels useful for the restoration of the nation as a whole, rather than along the channel of meeting immediate and local needs regardless of the larger problems-- which the panel foresaw as the more natural path should federal management fail

through disrupted communications and the lack of planning for the contingency necessitating decentralized activity.

There are, of course, other implications of the findings too specific and numerous to list again here. The panelists made a number of recommendations regarding federal policy (toward the content of emergency communications, regarding the style of leadership, toward emerging leadership, and so on) which are discussed in the body of this report in the appropriate sections. Among the strongest predictions of public desire were two which might be seen as having implications for federal policy at the highest level--the panel neared unanimity in its projection that the survivors would want peace above all else, and a chance to rebuild the social forms and values shattered by the nuclear catastrophe.

#### D. Implications for Future Research

Topical areas on which the panelists failed to reach a consensus evaluation would seem to be logical choices for further study; for if the experts do not agree, one might argue, then it must be that not enough is known. Before jumping to such a conclusion, however, it will be well to examine alternative explanations for such apparent disagreements.

There are a number of quite distinct possible reasons that might be advanced to explain a particular lack of consensus:

a. The statement may have been worded poorly, with the result that different panelists responded to different subjective interpretations of what was meant by the statement--the use of the term "religious" without any further definition is an example of this.

b. The statement may have been loaded in such a way as to antagonize those panelists who noticed the loading--the statement that industries would "continue" to pursue selfish interests is the most blatant example of this.

c. The lack of a temporal referent may have caused different respondents to assume different time-frames--this might be considered as a general criticism

of the entire questionnaire. Even so, however, general agreement did emerge on most topics.

d. The factor to be evaluated may have been so irrelevant in the minds of the respondents that they had no particularly strong opinion one way or another-- as was apparently the case in making the distinction between the inner-directed aspects of religion and the outward-directed formalities.

Fortunately, our request that the panelists submit narrative explanations of their positions, and their enthusiastic response to this request enables us to determine such superficial reasons behind what would otherwise appear to be lack of agreement or outright disagreement. This is fortunate, because it enables us to dismiss from consideration a number of otherwise perplexing problems which were not resolved by Delphic iteration. It should be pointed out that a major weakness of our adaptation of the Delphi method is apparently its ineffectiveness at encouraging the resolution of polarizations of opinion, or the formation of opinion where none is expressed in the first round--for, if a respondent does not find himself in a distinctly dissident position, the method does not supply any motivation for him to reevaluate and modify it.

However, once such apparent disagreements as can be explained away on such superficial grounds have been, there remain some real areas on which the panel either divided or expressed no agreement whatever. And on these, there are two implications that may be drawn: either (a) more research is needed, or (b) the available findings of relevant research have not been adequately disseminated. Let us briefly denote some of these areas, in hopes of distinguishing future research problems of greatest relevance.

### 1. Intergroup Conflict

The panel was divided on statements regarding the importance of conflict between races, between urban and rural populations, and between sections of the country (the majority position was that the first two of these would be of some-to-high importance); and no general agreement was expressed regarding the importance of conflict between socio-economic classes, between hawks and doves, or between

groups in general fighting over resources (the modal response to the first and last of these was that such conflict would be of some importance). Despite some confusion over the word "conflict," a review of the comments submitted on this topic indicates some very real differences of opinion here. If, as many respondents apparently believe, significantly disruptive intergroup conflict is a likely result of the devastation of nuclear war, then studies which ignore such a possibility may be doing so at the risk of greatly reduced validity. This problem is very closely related to the next three topical areas below.

## 2. Increase in Group Membership

The panel divided on considering the projection that people would become more submissive, ready to follow any kind of leader who arose; and expressed no great agreement on the importance of a tendency for survivors to subordinate themselves to groups or to form communal patterns of social interaction. But the number of panelists who attributed considerable importance to these factors was not insignificant. Relevant research does exist in this area, particularly in the disaster literature, and clearly, if the tendency for individuals to follow group direction is likely to intensify after nuclear attack, this factor has implications both on the previous topic and on the prospects for federal leadership.

## 3. Introversion of Concern

The panel divided or was uncommitted on some of the statements<sup>26</sup> regarding whether survivors would be more interested in or concerned about the fate of the nation as a whole or that of their locality, whether they would become more self-centered and selfish, whether they would lose faith in the government as a source of leadership and whether the influence of the federal government would be reduced; but the majority opinion seemed to be that the tendency to "look out for number one" might have serious impacts. Once again, the disaster literature has relevant findings in this area, findings of which many people in decision-making roles may not be aware.

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<sup>26</sup> The panel was in agreement on other similar statements--notably, statements 10, 19, 72, 73, and 75.

#### 4. The Collapse of Social Control Mechanisms

The panel divided profoundly on the questions of whether law enforcement systems would be overwhelmed, whether the legal/judicial system would collapse, and whether there would be a necessity for nationwide imposition of martial law. Such decidedly crucial possibilities and their likely consequences need a much more thorough investigation--what would precipitate such collapse, what effects would such a collapse have on the orderly progress of recovery activities, and what countermeasures might prevent or mitigate the effects of such collapse?

#### 5. Amplified Rebound

The panel divided sharply on considering the individual determinants of amplified rebound--an influx of energy, motivation, and activity. Here there are some questions both of the time-frame (none was specified) and of the misuses of the word "hyperactive," but if a large segment of the panel was unfamiliar with the phenomenon, there is a problem of dissemination; and if they disagreed that it would be applicable to a disaster of such profundity, one would like to know why.

#### 6. Return to a Golden Age

The feeling that nuclear war might return society to some mythic "golden age" of social harmony and desirable value orientations was implicit in many comments made by some panelists, and is reflected partially in the spread of opinion as to whether such a war would cause a "return" to rugged individualism or to reliance on and trust of one's neighbor. If such a nostalgic fantasy is indeed imbedded in the thinking of many decision-makers, one would certainly like to know why, how deeply, and with what implications for the decisions that might be made.

#### 7. Economics

The complete lack of agreement regarding the postattack value of money and the emergence of a barter system, and the polarization regarding the possibility

of national postattack economic planning is of the most profound consequence. No area in this list is more in need of deeper investigation.

#### 8. Blame and the Desire for Revenge

The panel reached no consensus in evaluating the placing of blame on the enemy or on the desire for revenge against him--though the modal evaluation was that both factors would be of "some" importance to recovery. Since both are obviously tied into the motivational structure of survivors, further research is certainly warranted.

In addition to the specific areas outlined above as worthy of further study, the overall questions of why the panel split on these particular items, and what intellectual or emotional sets underlie one or the other positions expressed by the debaters remain unanswered and of obvious interest. There are numerous indications that several conflicting "schools of thought" exist regarding these issues--in particular, the same individuals tend to hold positions of polar extremity on each of several issues. Since there is no worthier or potentially more useful question than that involving a continual reevaluation of the hidden assumptions behind current patterns of thought, an investigation aimed at delineating the current schools of thought on civil defense issues held by those working in the field might prove extremely worthwhile.

## APPENDIX A

### THE THREE QUESTIONNAIRES

This Appendix consists simply of the three questionnaires used in the study, each presented inserted in the package of explanatory material that actually accompanied it. Discussions of the method and of the responses to these questionnaires are included in the body of the report, and tabulations of the complete results obtained for each item are printed in Appendix B.

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21 September 1970

Dear <sup>1</sup> :

Over the past ten years, there has been considerable study of the potential social and psychological effects of a major nuclear attack on American society. Yet little of the information developed in these studies has been used in the periodic systems analyses and computer simulations which are performed to assess the effects of different hypothetical attacks and to evaluate alternative responses to them. Because these analyses lack consideration of social and psychological factors, their results have been strongly questioned. There are several good reasons why such data have not been utilized: information is seldom available in a suitable quantitative form; the results from different studies are frequently not comparable; and for any given factor there is often little, or unknown, consensus on its validity or importance.

You are receiving this letter as a part of an effort to create a more meaningful and usable base of data on social and psychological effects. Human Sciences Research, Inc., under contract to the Office of Civil Defense, is conducting a study to pool the available knowledge of the social and psychological effects of nuclear war. The study will use a variant of the "Delphi Method" for data collecting. A group of researchers, scientists, and/or operational people who have some knowledge of and interest in the likely effects of nuclear war have been identified as potential participants in this project. This group is divided roughly into equal numbers of: (1) non-government personnel; (2) Office of Civil Defense or Office of Emergency Planning personnel; and (3) military personnel with pertinent operational responsibilities. Participants will respond to a series of three brief questionnaires over the next few months. This iterative series will be designed to determine how much agreement exists among respondents as to the presumed social and psychological factors and the extent, nature, and importance of their consequences.

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<sup>1</sup>This is the letter that accompanied the questionnaire sent to the Social Scientist Group. Similar versions with only slight modifications were used for the other two groups. The same is true of the letters accompanying the Second and Third Round Questionnaires.

21 September 1970

Page 2.

You are being asked to serve on this panel. Acceptance means simply that you will receive the three questionnaires by mail, along with explanations, feedback, and discussion of the progress of the study. The questionnaires will be brief, and, generally will require very little time to complete. Enclosed with this letter is the first round Data Collecting Package. Although it may look thick, please note that most of it is explanation--the actual questionnaire consists of only one page, with only one basic question.

We hope you will view the opportunity to participate as an interesting learning experience for your own purposes. The feedback will allow you to compare your ideas with those of the other respondents and you will be participating in an experimental application of the Delphi Method to a new area, an attempt which should provide for interesting observations on the nature and applicability of this developing tool. A short background paper on the method itself is included for your general information. At the end of the project, you will receive a copy of all the data collected (with the exception of any classified data, should any be developed). In addition, each participant will be given the opportunity to review the draft report prepared on the study. The comments or criticisms you make will be incorporated into the report if they are accepted by the authors; if not, they will be published in an appendix to the report. In this way, we hope to guarantee that all views are heard and to provide a means for guarding against any possible misuse of responses provided by participants, no matter how unintentional.

If you would be willing to participate in the project, please answer the questionnaire and return it in the postage paid envelope provided. If, for any reason, you are not willing to participate, we would appreciate your so indicating on the front of the Data Collecting Package and returning all materials in the envelope provided.

We earnestly hope you will participate in this effort.

Sincerely,

HUMAN SCIENCES RESEARCH, INC.

Peter G. Nordlie  
Research Director

PGN:smw  
Enclosures as stated.

A-2

FIRST ROUND  
DATA COLLECTING PACKAGE

on

A STUDY OF THE CONSEQUENCES OF  
SOCIAL AND PSYCHOLOGICAL FACTORS IN  
HYPOTHETICAL NUCLEAR ATTACKS

being conducted by  
Human Sciences Research, Inc.  
Project Director: Peter G. Nordlie

under contract to the  
Office of Civil Defense  
Contract No. DAHC 20-70-C-038  
Work Unit 3542B

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## EXPLANATION OF THE PROCEDURE

The purpose of this project is to provide better data than has been used in the past for incorporating social and psychological factors in systems studies, simulation games, and predictions of societal recovery from hypothetical nuclear attack. In the course of this project, we will focus on defining those factors more explicitly, investigating the likely consequences of those factors on recovery operations, and evaluating their importance to the recovery effort.

Delphi is a method of employing a panel of respondents to reach consensus by use of a series of iterative questionnaires interspersed with controlled feedback of information gathered in earlier rounds. By keeping respondents anonymous and separated, many of the problems apparent in the more usual techniques of face-to-face debate--such as specious persuasion, personality alliances or clashes, the bandwagon effect of majority opinion, etc.--are reduced or completely resolved. (A brief background paper on the Delphi Method is enclosed for those who may be interested.)

As a respondent you can expect to receive three questionnaires over the next few months. None should require a large amount of time to complete. The responses to one round of questions will be summarized and made available to you as part of the subsequent round, so that you may follow the accumulation of data in detail, and you will also receive a complete analysis and discussion of results at the end of the project.

The first questionnaire, included in this package, is brief but open-ended. In it, you are asked simply to consider the brief scenario provided, list the social and psychological factors which you consider would significantly influence behavior after the hypothetical nuclear attack, and describe briefly the effects of those factors on recovery activities.

In the next round, which should follow in less than a month, all those factors and effects listed by respondents will be submitted for your consideration, and you will be asked to respond to each on its own merits as you see them. The only writing

requested on the second round will be to defend briefly any position you take which is outside the majority opinion. The third round will be similar.

Included in this package you will find: (1) a brief description of the hypothetical attack assumed for this part of the study; (2) the first questionnaire; and (3) an explanation of terminology used.

Please answer the questions to the best of your knowledge, but do not spend a lot of time on it. We have purposely tried to structure the initial question as little as possible and to encourage "top of the head" responses. In other words, we want people to put down those things which come to mind immediately without being concerned about whether or not the response is in the right format or proper terms. Return the completed questionnaire in the enclosed envelope within four days of its receipt if at all possible.

We are aware of the difficulties of answering such an open questionnaire--essentially, you will be starting with a blank sheet of paper. However, this is intentional--we want to elicit the full range of ideas and considerations of all respondents. Thus, it would be undesirable to limit the discussion at first with a detailed description of the type of answers desired. Subsequent questionnaires will be progressively more detailed and structured. So even though the task may appear initially ambiguous, please make an effort to answer in whatever terms seem appropriate to you. Your responses will be treated with strict confidentiality.

Thank you for your cooperation.

SCENARIO

In order that respondents may have some common frame of reference, the following brief scenario is provided. You are asked to read the scenario and then answer the question on page 5.

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1. In late 1971, there has been a period of rapidly rising tensions, primarily in the NATO theater of operations, consisting of an increasingly belligerent attitude of Soviet countries toward the Western allies. More specifically,

- the Soviet Union has applied pressure on Western Europe, making demands unacceptable to several European nations.
- Soviet naval forces have been deployed in a threatening or suspicious manner around the world, and mobilization activities are reported within the Soviet Union.
- harrassment and covert attacks on allied shipping have occurred in a number of widely-spread incidents.

In response, NATO countries have adopted increasing states of alert readiness, and some reserves in the U. S. have been mobilized by October of 1971.

2. On January 1, 1972, Warsaw Pact nations mount land, air, and sea attacks in Europe. Allied shipping in both Atlantic and Pacific is attacked with increasing frequency. Various conditions of emergency are declared in some states, as civil defense activities reach a high level. All battle staffs are fully activated, and the mass media are utilized to disseminate public information about the crisis and how to react in case of emergency.

3. On January 5, at 0 hours EST. the Soviet Union launches a barrage believed to be between 3,000 and 4,000 megatons against North America, consisting of an estimated 700-800 weapons aimed primarily at military and urban/industrial targets. A concurrent attack is launched against the NATO nations of Europe.

4. In retaliation, the U.S. mounts a roughly equivalent attack on the Soviet Union. The entire exchange lasts approximately 24 hours.

5. As a result of the attack, surviving authorities have estimated that between 60 and 65 million Americans were killed outright, and that about 40 million are so ill or injured that either they are expected to die or they are permanently disabled. It is also estimated that up to 20 million are ill or injured but are likely to recover.

6. It is also estimated that about 40 per cent of heavy industry has been destroyed, while another 40 per cent will require repairs or decontamination delays. Over half of the American mainland was subjected, for some period of time, to fallout radiation dosages which were fatal for those without any protection.

In general, the Federal Government and the Military are the institutions most intact, while the local governments have tended either to survive or be destroyed depending on location. Broadcasting facilities remain adequate to cover most areas, but receivers dependent on external power sources are, of course, inoperative over much of the country. Rail and highways are severely damaged at their urban nodes. The amount of food stockpiled in urban areas is highly varied although in most areas adequate food supplies exist if they can be located and distributed.

QUESTIONNAIRE NO. 1

1. Assume that the attack described in the scenario has occurred and assume that an effort will be made by the government to initiate and facilitate nationwide recovery activities.

What social and psychological factors do you think would significantly influence the behavior of people in the postattack situation? For each factor you identify, please indicate what positive or negative effects that factor is likely to have on recovery activities. (Key terms in this question are further defined on page 9.)

Please use a separate sheet of paper for each factor you identify. The desired general format is indicated on page 7.

2. How well informed do you consider yourself to be about the likely physical effects of nuclear attacks?

- Much more well informed than most people
- Probably somewhat more informed than most people.
- About average.
- Probably less well informed than most people.

3. How well informed do you consider yourself to be about the likely social and psychological effects of nuclear attack?

- Much more well informed than most people.
- Probably somewhat more informed than most people.
- About average.
- Probably less well informed than most people.

(Please check your response to Questions 2 and 3, and attach this sheet to your answers to the first question.)

**DESIRED FORMAT FOR YOUR ANSWERS**

**(Please use a separate page with the two headings as they appear in this example for each factor you identify.)**

**Factor Name:**

**[Identify factor in whatever way you can... a word, phrase, sentence or paragraph. ]**

**Positive or Negative Effect on Recovery Activities:**

**[Indicate whatever ways you think the factor you have identified above would affect recovery activities. ]**

## FURTHER DEFINITION OF TERMS

The assumption underlying the questionnaire is that the physical damage wrought by the described hypothetical attack would cause changes in the mental state of individuals and the characteristics of groups of individuals, and that these changes would in turn induce changes in behavior. Some of these changes in behavior would affect the process of societal recovery, and it is these latter effects which are of great practical significance.

By "psychological factors," we refer to variables that are characteristic of individuals. Normally, a psychological factor would relate in some way to the perceptual, motivational, or learning processes of individuals.

By "social factors," we refer to the characteristics of groups or collectivities of people--organizations, social classes, families, etc.--such as organizational structure, amount of interaction, methods of group decision-making, and so on.

When we speak of "social and psychological factors," we mean either or both. However, we do mean to exclude physical factors. "Inadequate diet," for example, would be a physical factor; it would be the psychological and/or social consequences of this factor that would be of interest.

By "significant," we mean to limit consideration to those factors which, in your estimation, would affect the behavior of large numbers of people or groups whose participation in recovery efforts would be crucial.

By "effects," we mean the impact the stated factor would have on recovery activities--for example, the effects on the availability of labor, worker efficiency, shared goals, loyalties, and so on.

By "recovery activities," we mean those actions involved in the process of societal recovery--these actions required to create a viable and acceptable social system in terms of social norms, standard of living, production, defense, etc. Priorities will not be specified here, since they would be influenced by the very social and psychological factors under study.

ROUND ONE

A REVIEW OF THE  
DEVELOPMENT AND APPLICATION OF  
THE DELPHI METHOD

Bruce C. Allnut

September 1970

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A REVIEW OF THE  
DEVELOPMENT AND APPLICATION OF  
THE DELPHI METHOD

Introduction

As increasingly sophisticated techniques have been developed to serve the predictive and explanatory aspects of the "inexact" sciences--techniques such as the construction of mathematical models, the use of simulation and gaming procedures, and the use of massive data-processing capabilities--it has become increasingly apparent that all such analyses are limited by the weakest link. And the weakest link in any application is that many decisions must be based on the intuitive, individual judgment of experts in the field. Even when a mathematical model is agreed upon, the input assumptions, the values of coefficients in the formulae, the range of applicability of the model, and the interpretation of results may all be based "only" on expert opinion whenever there is no formal, well-established theory on which to make decisions. And this is often the case, not only in the social sciences, but also in the applied areas of sciences customarily considered to be "exact."

Thus, one's faith in such predictions cannot exceed one's faith in the expertise of the experts providing inputs and interpretations, and in the experts' ability to reach reliable estimates of factors not estimable from generally accepted and precise bodies of knowledge.

The problems of evaluating the qualifications of experts are extremely difficult to resolve. Indeed, there is generally room for argument in merely defining what one means by the term "expert," and even when criteria for evaluating expertise can be given--such as the reliability of prior predictions--there are seldom adequate data available for comparison with the criteria. Often, one must rely upon some blend of reputation, background, and self-evaluation of the experts.

However, some strides have been made recently in the processes by which a body of experts may reach consensus on a given issue, most notably in the development of what is called the "Delphi Method."

## Traditional Methods

The simplest and most straightforward method of arriving at an expert opinion or estimation is to select one favored or foremost expert in the field and solicit his opinion. There is great merit in this technique when it is applicable-- that is, when the field is clearly defined and has been studied in depth by one highly respected individual who also is in a position to view its application broadly. Unfortunately, these conditions are not often met, especially in an age when multidisciplinary approaches are frequently required. And of course one can never be sure that one has selected the "expertest" expert. Perhaps it is because of its shortcomings that this method is known as the "genius" technique.

To overcome the fear that a sole judgment may be a poor one, a number of experts may be asked for their estimates, and the responses can then be pooled into some sort of average--a median or mean, perhaps weighted to reflect some criterion of expertise. The idea here would be to cancel out individual error, but the extent to which the pooling has this effect is dependent both on the way in which the sample is drawn and on the way in which the "average" is computed. Obviously, a great deal of expertise is required of the pooler. Also, of course, the range of responses may be so great as to preclude averaging.

The currently fashionable method is to bring a number of experts together into some sort of panel, committee, or task force in which, by round-table debate, differences can hopefully be hashed out and a corporate decision can be reached. Aside from the ever-present possibility that consensus may be unreachable, the greatest weakness here is that the group decision may be unduly affected by a number of psychological factors inherent in group activity. Thus, the consensus may reflect the opinion of the most respected or most persuasive member, personality clashes and alliances may outweigh rationality, compromise may be reached through exhaustion or in order to meet some deadline, and so on. Anyone who has sat on committees is familiar with these problems.

A variation in this procedure is to require that the experts, after discussing the issue at length, retire into privacy and make individual estimates, revising their initial estimations in light of the group work. These separate values may then be

pooled into some sort of (perhaps weighted) mean. While this method has some advantages over the simple panel debate, particularly in reducing the impact of the most vociferous panelist, it reintroduces the errors inherent in pooling.

### The Delphi Method

The Delphi Method, developed in the early 1950's by Olaf Helmer and his associates,<sup>1</sup> replaces direct, face-to-face discussion with a series of individual interrogations (best conducted by questionnaire) interspersed with feedback of information and opinion derived from earlier rounds of interrogation. The prime advantage this method has over those using committee activity is in eliminating or reducing the influence of such psychological factors as over-respect for renowned group members, specious persuasion furthered by charisma or vociferousness, personality clashes and alliances, unwillingness to abandon publicly stated opinions, consensus inspired by exhaustion or tight schedules, the bandwagon effect of majority opinion, inadequacies in members' listening abilities, and so on. The extent to which such influences are alleviated is variable, and certain new problems and sources of error may be introduced, but in general it may be said that Delphi is the most systematic and reliable manner of utilizing expert opinion developed to date.

### Delphi Applications

To date, the Delphi Method has generally been applied to problems of predicting future sociological and technological developments. A brief listing of some of the earlier uses to which the method has been put will demonstrate the range of human endeavor which may be investigated by Delphi:

---

<sup>1</sup>The method was developed as a part of a RAND Corporation project for the Air Force under Contract Number AF49(638)-700. Unfortunately, security considerations prevented publication in the general literature until 1959. Cf: Olaf Helmer and Nicholas Rescher, "On the Epistemology of the Inexact Sciences," Management Sciences, 6, No. 1 (October, 1959), pp. 25-52. See also, RAND R-353, February 1960.

- to estimate, from Soviet viewpoint, an optimal industrial target selection and the number of A-bombs required to reduce U.S. munitions production by a prescribed amount. <sup>2</sup>
- to develop war-prevention techniques through long-range forecasting. <sup>3</sup>
- to estimate (for the purpose of validating and refining the method) the price of apples in the U.S. in 1940. <sup>4</sup>
- as part of a game simulation to explore the relation between technology and value change (consensus had to be reached on investment policies.)<sup>5</sup>
- to predict economic indices. <sup>6</sup>
- to estimate technological potentials. <sup>7</sup>
- to predict political alliances. <sup>8</sup>
- to develop a game in which investment strategies alter the future. <sup>9</sup>

<sup>2</sup>Norman Dalkey and Olaf Helmer, "An Experimental Application of the Delphi Method to the Use of Experts," Management Science, 9, No. 3 (April 1963), pp. 458-467.

<sup>3</sup>Theodore J. Gordon and Olaf Helmer. Report on a Long-Range Forecasting Study, Report P-2982 (Santa Monica, Calif.: The RAND Corporation, 1964).

<sup>4</sup>Bernice Brown and Olaf Helmer. Improving the Reliability of Estimates Obtained from a Consensus of Experts, Report P-2986 (Santa Monica, Calif.: The RAND Corporation, 1964).

<sup>5</sup>At a Symposium on Technology and Values, sponsored by the Carnegie Corporation and organized by the Department of Philosophy, University of Pittsburgh, Pennsylvania, September 1966.

<sup>6</sup>Robert M. Campbell, "A Methodological Study of the Utilization of Experts in Business Forecasting," Ph.D. Thesis, UCLA, September 1966.

<sup>7</sup>Harper North, "Technological Forecast," Thompson Ramo Wooldridge Report, 1966.

<sup>8</sup>Joseph Martino. An Experiment with the Delphi Procedure for Long Range Forecasting USAF, AFOSR 670175, 1967.

<sup>9</sup>Inquiries about this game should be addressed to Mr. Al deGrassi, Kaiser Aluminum and Chemical Corporation, Oakland, California. The game was developed by T.J. Gordon, Director of Space Stations and Panetary Systems, Douglas Aircraft Company, and Olaf Helmer.

- to predict the dates at which certain inventions will be made.<sup>10, 11</sup>

Though most applications have been in the area of forecasting, there is nothing inherently predictive in the method--rather, it is a means of approaching consensus, and thus there is no reason that Delphi could not be applied to problems of explanation, policy-making, strategic planning, and other areas where group agreement on judgmentally defined issues is required.

### An Example

In order to illustrate the basic method of iterating estimates with interspersed feedback, a simple example is given below. It is recognized that, if one were seriously trying to investigate the issue selected here, a number of related questions would be appropriate. However, our example should illustrate the fundamentals of the Delphi Method.

Let us assume that the objective is to arrive at an estimate of the composition of the U.S. Senate after the 1972 elections by consensus from forty prominent political analysts. Current experience indicates that it might not be particularly productive to have forty politically conscious people try to argue the future around a table. Some might not even deign to be in the same room together. The Delphi approach would be, after obtaining agreement from all respondents to participate in the experiment, to send each a simple questionnaire, which might be worded as follows:

#### ROUND 1:

"Assuming no major new wars, escalations of present wars, internal revolutions, or profound scandals, how many seats in the United States Senate do you anticipate will be held by Democrats after the 1972 elections"?

---

<sup>10</sup>James R. Bright (ed.) Technological Forecasting for Industry and Government (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968): "The Delphi Method--An Illustration," pp. 123-133; "Technology, the Chicken--Corporate Goals, the Egg," Harper Q. North and Donald L. Pike, pp. 412-425; "New Approaches to Delphi," T.J. Gordon, pp. 134-143; "Analysis of the Future: The Delphi Method," Olaf Helmer, pp. 116-122.

<sup>11</sup>Olaf Helmer. Social Technology (New York: Basic Books, 1966). Cf: appendix. Also reported in RAND Report P-3063, February 1965.

The purpose of the qualifying phrases is to get all respondents thinking in similar frames of reference by placing limits on the assumptions which underlie the theoretic model.

When responses to the first round have been received, the monitor calculates the median answer and the interquartile range (IQR--the range containing the middle 50 per cent of the responses), and circulates a second questionnaire:

ROUND 2:

"In response to the first questionnaire, the median estimate of the number of Democratic Senators after 1972 was 62. Half of the estimates fell within the range from 31 to 80. Your previous estimate was \_\_\_\_.

Please reconsider your estimate in light of the majority opinion, and revise it if you wish: \_\_\_\_.

If your new estimate lies outside the range (31-80), briefly state your reason why you think the answer should be that much higher (or lower) than that given by the majority of respondents: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_."

Requiring the justification of relatively extreme responses should have the effect of causing respondents without strongly held convictions to make estimates closer to the median, while those who feel they have a good argument should tend to retain their opinions and justify them.

In the next round, responses (which should cover a narrower range) can again be summarized:

ROUND 3:

"The median response to the second questionnaire was 59. Half the estimates were in the range from 41 to 73. Respondents advocating a higher estimate gave the following reasons:

'The public has lost faith in the Republicans over the Indochina war.'

'Nixon has failed to give priority to domestic problems.'

'Everyone recognizes the need for a stronger Senate.'

Respondents advocating a lower estimate gave the following reasons:

- 'The Democratic Senate has not supported the President.'
- 'Democrats no longer appeal to middle America.'
- 'Everyone remembers what Johnson did to us.'
- 'There is a growing reaction to radicalism.'

Your previous estimate was \_\_\_\_\_.

Please reconsider your estimate in light of the above arguments and revise it if you wish: \_\_\_\_\_.

If your new estimate lies outside the range (41-73), briefly state why you think the opposing arguments given above are not persuasive (in other words, if your estimate is high, refute the arguments for a lower estimate, and vice-versa): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_."

Once again, the requirement for debate should tend to tighten the consensus (or help to polarize responses into opposing camps--see the section on "cautions" below).

The fourth and final questionnaire (the iteration can of course be continued to any number of steps) would then be constructed as follows:

ROUND 4:

"The median response to the third questionnaire was 58. Half the estimates were in the range from 48 to 66. Respondents advocating a higher estimate gave the following refutations of the lower estimate position:

- 'The people didn't support the President either.'
- 'The Democratic Party is still the party of the working class.'
- 'Johnson will be remembered for his effective legislation on internal problems more than for the war.'
- 'There is also a growing liberalism.'

Respondents advocating a lower estimate gave the following refutations of the higher estimate position:

- 'The majority support Nixon's efforts in Indochina.'

'Nixon's concern with domestic problems has been realistic rather than spectacular and idealistic.'

'A stronger Senate would be one more willing to work with the President than against him.'

Please reconsider your estimate in light of the above refutations and revise it if you wish: \_\_\_\_\_.

If your estimate remains outside the range (48-66), summarize your reasons for feeling that the consensus is inaccurate: \_\_\_\_\_

---

Do you have any comments on the method and the results obtained?"

Generally, one can expect further convergence of responses in the last round as well. If the final median remained at an estimate of 58 seats, and the inter-quartile range became from 50 to 64, we would have had, in this example, the effect that the median estimate was lowered through debate by four seats, while the IQR shrank from a range of 49 to one of 14. One can often expect even the most extreme values (another measure of variation) to also converge.

Other, more comprehensive examples may be found in the literature cited above.

### Delphi Refinements

A number of innovative refinements have been developed to fit particular applications of the Delphi method:

1. Weighted Opinions. If it were possible to measure objectively the trustworthiness of the experts selected as respondents, clearly the greatest weight would be given to the responses of the "foremost" experts. Unfortunately, in most cases it is impossible to evaluate the experts with any degree of precision. Because of this, experiments have been carried out to test the reliability of experts' self-appraisal of their own competence (in particular, see the studies cited in Footnotes 4 and 6). Respondents are asked to rank their own expertise relative to each question, and then, instead of using the medians derived from all respondents, only the responses of those who rank themselves as relatively competent are used. Results

of such experiments have been quite good--when the "correct" answer is known, the consensus approached by those who rank themselves higher tends to be closer to the true value than that approached by the entire group of respondents.

2. Mixed Techniques. Delphi has been incorporated into several game simulation forecasting techniques (Footnotes 5 and 9) in order to take advantage of the peculiar advantages of each technique. For example, Delphi may be used to establish game parameters or as a means for players to agree on strategy.

3. Computer-Controlled Feedback. Applications of the Delphi Method can be expedited and improved by use of a computer with several remote input/output stations to ask the questions, analyze responses, and construct the subsequent questionnaire. The computer might also be used as a controlled data bank to supply related information at the request of respondents. Experiments on this refinement have been carried out at RAND (Footnote 10), using the JOSS computer.

4. Sequential Scenarios. An image of the future can be built in steps, breaking a twenty-year forecast, for example, down into four five-year forecasts, each one being constructed using the consensus reached in the preceding one.

5. Cross Correlations. Delphi has been criticized for yielding sets of linearly independent estimates of the future, when, in fact, a given future development, when it occurs, will affect many subsequent developments. This can be handled by estimating the extent to which any one item on a Delphi questionnaire influences the other items by means of a matrix of correlations. In fact, the extent of influence can, itself, be established by Delphi. Then, when one item is agreed upon, the effect of this agreement on other items can be calculated.

### Cautions

There are several critical considerations which must be taken into account in using Delphi. First, the experts must be carefully selected, for it is clear that poor selection will reduce the reliability of results as much here as when using other methods. This is of course a common problem, and the manner in which it is resolved must depend on the specifics of the issues under investigation.

Second, the experts must be placed in the proper conditions, under which they can perform optimally. Aside from considerations of time and place, access to relevant information, and inability to confer with other respondents, this means the construction of a conceptual model of the basic problem to which all respondents can agree before beginning--terms must be clearly defined, as must be the limiting factors and assumptions underlying the questions.

Third, great care must be taken by the monitor when interpreting responses in an attempt to formulate common positions for inclusion into subsequent rounds of questions. Unless all arguments are to be repeated verbatim in the next round, a variety of statements must be categorized and summarized into a small set of statements. When such synthesis is used (which it generally must be in all but the smallest experiments), a new source of error is introduced.

Related to the above is the caution that must be observed to determine whether a true consensus is being reached. Often, consensus on a given issue is unreachable, and what is in fact happening is polarization of the respondents around two or more positions. If such is the case, but the data are artificially compressed into one median and one range about it, much valuable information may be lost and the results may be impossible to interpret. The better way to handle it is to point out in the next round the possibility that there are two irreconcilable sets of opinions, and invite comments and arguments on that basis. Rapid convergence to two points may follow this.

A psychological factor which is introduced by use of Delphi, and which is intrinsic to the method, is the tendency to conform to the majority opinion simply because "deviance" requires a written justification. Whether this "laziness" factor is a significant problem is a moot question.

ROUND TWO

AREA CODE  
703  
893-6200



WESTGATE RESEARCH PARK  
7710 OLD SPRINGHOUSE ROAD McLEAN, VIRGINIA 22101

4 December 1970

Dear :

We wish to thank you for your response to the First-Round Questionnaire on the social and psychological effects of hypothetical nuclear attack. There were twenty-six respondents and nearly all the responses were detailed and thoughtful. They added up to a surprising amount of data which we will be continuing to analyze for some time.

As we had hoped, the responses presented an extraordinarily broad range of concepts, ideas, and projections about the reactions of society to nuclear attack. The responses--ranging from a few words to as much as seventeen pages--are of such variety in both form and content that it would be not only difficult, but quite misleading to attempt to "summarize" them under any one set of categories.

This Second-Round Questionnaire is composed of the assertions made and questions raised about postattack society by the total set of respondents. Thus, the questionnaire itself represents a summary of the Round-One Responses.

You may be relieved to know that all the questions in this round will be of the multiple-choice or check-list type, thus sharply reducing the requirement for writing. This format is not intended to restrict your thoughts to our categories, however. If you have comments, elaborations, complaints, suggestions, or whatever, we encourage you most strongly to express them either on the questionnaire or on additional pages.

Please answer and return in the stamped, addressed envelope as soon as possible. If you can return it within five (5) days of receipt, it will be possible to include your responses in the analysis for the Third Round. We look forward to your early reply.

Sincerely,

Peter G. Nordlie  
Research Director

PGN:smw

A-25

SECOND ROUND  
DATA COLLECTING PACKAGE

on

A STUDY OF THE CONSEQUENCES OF  
SOCIAL AND PSYCHOLOGICAL FACTORS IN  
HYPOTHETICAL NUCLEAR ATTACKS

being conducted by  
Human Sciences Research, Inc.  
Project Director: Peter G. Nordlie

under contract to the  
Office of Civil Defense  
Contract No. DAHC 20-70-C-038  
Work Unit 3542B

## SECOND ROUND DATA COLLECTING PACKAGE

This second questionnaire is quite different from the first. In particular, no narrative writing is requested at all (though, of course, any submitted will be welcomed and used).

In the first questionnaire we asked respondents to list "social and psychological factors" and then, for each factor, to list the "effects that factor is likely to have on recovery activities." Despite a brief discussion of these terms, they were left essentially undefined in order to place as few restraints as possible upon the respondents' individual conceptual frameworks. This attempt was successful judging from the incredible variety of kinds of responses. Some thought in terms of states of mind or emotion (giving such factors as "fear," "hope," etc.); others spoke of needs and desires (for communication, for leadership); or of process variables (shifts in values or concerns; breakdown of trust); and so on and on. What some respondents thought of as "factors," others considered to be "effects." And while some types of responses recurred frequently enough to indicate widespread agreement, there were other, often extremely thought-provoking, ideas that appeared only once in all the nearly 200 pages of responses.

In any case, the responses defied any straightforward summarization. We did attempt to code responses into a number of different categories but the results of Round One really cannot be presented in a meaningful quantitative form. For this reason, we have no neat summary to provide to you. However, the Round-Two Questionnaire is, in itself, a form of a summary, because it is built directly from the Round-One Responses. Every question is either taken verbatim from the Round-One Response, or is slightly edited to increase clarity and simplicity. By reading the questionnaire itself, you have a pretty good summary of Round-One results.

While initially we tried to distinguish between "factor" and "effect," we don't believe this distinction was understood in a common way, so we have abandoned it. In Section A, you will find 100 statements derived from the Round-One Responses. You are asked to evaluate them against your own knowledge, opinions, and inclinations. In the other sections are a number of questions also raised in the Round-One

Responses, an evaluation of independent variables, a summation of effect on the postattack labor force, and a request for some biographical data. At the end, you will find a reprint of the scenario to refresh your memory.

We hope you can fill it out immediately--it actually doesn't take too much time. And, once again, let us repeat that we will welcome any comments or suggestions.

Thank you.

\_\_\_\_\_  
Name

SECTION A: 100 Statements from the Round-One Responses

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

1. There would be an increase in competitive antisocial behavior, such as looting, hoarding, profiteering, robbery, fighting over resources, etc.
2. There would be an increase in adaptive social behavior, such as organizing, learning, innovating, gathering, building, assisting, sharing, etc.
3. People would lose faith in preattack leaders and institutions.
4. People would become apathetic, listless, dependent.
5. People would panic and act irrationally.
6. People would withdraw, isolating themselves from exposure to perceived dangers.
7. People would work only if paid in food, clothing, etc.
8. Martial law would be enforced in many areas.
9. Martial law would be enforced nationwide.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

10. People would be preoccupied with themselves and their immediate family or group.
11. People would be less interested in or concerned about the larger society; e. g., the nation as a whole.
12. New cults, superstitions, and taboos would arise.
13. People would turn to religion for understanding and solace.
14. People would spend much time trying to comprehend what had happened and looking for danger cues.
15. People would be more submissive, and ready to follow any kind of leader who arose.
16. People would become fatalistic.
17. People would be self-centered, with an "every man for himself" philosophy.
18. People would be family- (or primary group) centered, willing to sacrifice others to the benefit of their families (or groups).
19. People would act in ways that would be locally useful but dysfunctional nationally.
20. Time would be lost grieving for dead or lost loved ones.

ROUND TWO

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

21. Time would be lost searching for and asking about lost loved ones.
22. Groups would be struggling against one another, with fights between families, gangs, localities.
23. There would be an increase in willingness to cooperate between individuals and between groups.
24. There would be resistance to federal programs.
25. There would be scattered, local revolts.
26. There would be a nationwide revolution.
27. There would be attempts to secede from the nation.
28. Individuals would subordinate themselves to groups.
29. Conversation would be eased between strangers.
30. There would be a trend toward communal living.
31. People would be paralyzed by role conflict--when acting for one group would jeopardize another.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

32. Rumors would flourish.
33. People would desire more communication than would be available.
34. Individual and local innovation would be increased, as people are forced to seek solutions on their own.
35. People would need information.
36. People would need instruction.
37. People would need to have events interpreted to them.
38. People would need reassurance.
39. People would need leadership.
40. New leaders would emerge.
41. The existing federal government would make serious mistakes.
42. People would lose faith in the government.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

43. Communications from the federal government would be ignored.
44. Attempts would be made to evacuate danger areas.
45. Attempts would be made to evacuate the country.
46. People would fall into despair, and lose all motivation.
47. People would be filled with renewed energy and motivation.
48. Complex organizations and institutions would break down or fragment.
49. There would be a return to more primitive forms of social organization, such as gangs, tribes, etc.
50. Rational economic planning would be impossible.
51. Money would cease to have value and a barter system would develop.
52. The influence and power of the federal government would be reduced.
53. Medical resources would be hoarded.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

54. Law enforcement systems would be overwhelmed.
55. Anarchy would prevail.
56. The legal/judicial system would collapse.
57. The schools would close.
58. Troops would be used to maintain order.
59. There would be rebellions within the armed services.
60. There would be massive, psychotic group behavior which is unprecedented and therefore unpredictable.
61. People would wander around in something like a state of shock.
62. People would abandon their old religions.
63. People would be open to changes in organized religion.
64. Religious people would be more responsive to the needs of others than would non-religious.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

- 65. People would be more interested in personal, inner-directed religion than with formal, public religion.
- 66. Corporations and industries would continue to pursue selfish interests.
- 67. Local authoritarian organizations would develop.
- 68. There would be a struggle between those calling for strong enforcement of law and order and those who fear the loss of civil liberties.
- 69. People would be forced to work on certain projects, whether they liked it or not.
- 70. The Bill of Rights would be temporarily suspended.
- 71. People would become more "moral."
- 72. People would be more concerned with the present than with the future.
- 73. People would be more concerned with their immediate locality than with larger areas as a whole (e. g., state, region, nation).
- 74. People would be more concerned with the fate of the nation than with that of their state or region.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

75. There would be a strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions.
76. People would be anxious to try out new systems, values, and life-styles in order to avoid the mistakes of the past.
77. People would blame their troubles on the federal government.
78. People would blame their troubles on a few national leaders.
79. People would blame their troubles on the Soviet Union.
80. People would blame their troubles on themselves.
81. People would blame their troubles on some minority group.
82. There would be a strong desire for revenge against the Soviet Union.
83. There would be a strong desire for peace.
84. There would be conflict between races.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low
Yes ? No	Large Moderate Minor	High Some Low

- 85. There would be conflict between religions.
- 86. There would be conflict between socio-economic classes.
- 87. There would be conflict between hawks and doves.
- 88. There would be conflict between conservatives and liberals.
- 89. There would be conflict between sections of the country.
- 90. There would be conflict between urban and rural populations.
- 91. There would be conflict between Americans and Canadians and/or Mexicans.
- 92. Groups would form with the aim of continuing the disorder and confusion.
- 93. There would be a return to rugged individualism.
- 94. There would be a return to reliance on and trust of one's neighbors.
- 95. People would concentrate on the past instead of on the present and future.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive?	How Important to Recovery?
(Circle Your Answers)		
Yes	Large	High
?	Moderate	Some
No	Minor	Low
Yes	Large	High
?	Moderate	Some
No	Minor	Low
Yes	Large	High
?	Moderate	Some
No	Minor	Low
Yes	Large	High
?	Moderate	Some
No	Minor	Low

96. Social attitudes would become more conservative.

97. Survivors would feel great relief over having been spared.

98. Survivors would feel great guilt over having been spared.

99. After the initial shock and inactivity would come a hyperactive rebound of energy and activity.

100. People would be afraid of being alone.

SECTION B: Questions Raised in the Round-One Responses

1. Fear of one kind or another was by far the most frequently cited factor in the responses to round one. Many kinds and levels of fear were listed: fear of death; injury; illness; radiation; starvation; mutation; renewed attack; invasion; thieves; disorder; personal violence; the unknown. The topic was also described by such phrases as insecurity about personal survival prospects, panic, hysteria, self-preservation, shift to more primitive needs, preoccupation with survival, and so on.
  - a. Do you agree with what seems to be a majority of respondents, that "fear" would be the most significant psychological barrier to national recovery?  
                   Agree \_\_\_\_\_ Disagree \_\_\_\_\_
  - b. As a nationwide factor, how long would it take for all this fear to subside to one-half its maximum severity?  
                   \_\_\_\_\_ (Days, weeks, months, years.)
  - c. Would fear and its effects be more profound in areas suffering "near misses" than in those areas further away from the devastation?  
                   Yes \_\_\_\_\_ No \_\_\_\_\_
  - d. What would you give as guidelines for the government policies most likely to effectively counter fear?  
     (Check the one of each of the following pairs of recommendations that you think would be wisest, generally speaking, for the federal government to follow.):
    - (1a) \_\_\_\_\_ Give strong reassurances, positive assessments, and optimistic projections, whether true or not; or
    - (1b) \_\_\_\_\_ Tell the truth, whether it is reassuring or not.
    - (2a) \_\_\_\_\_ Provide strong, direct, authoritarian leadership; or
    - (2b) \_\_\_\_\_ Throw all decisions before the people, via town meetings, etc., whenever possible.
    - (3a) \_\_\_\_\_ Give detailed instructions of all kinds; or
    - (3b) \_\_\_\_\_ Give only general suggestions, encouraging innovations.
    - (4a) \_\_\_\_\_ Channel fear into anger against an internal or external threat to the nation; or
    - (4b) \_\_\_\_\_ Use fear to encourage binding us all together on a humanitarian, rather than a national level.

2. It might be expected that under such stress, some survivors would react destructively against others. What percent of survivors do you think would act on the basis of the following attitudes:

- a. Every man for himself. \_\_\_\_\_%
- b. My family against all others. \_\_\_\_\_%
- c. My race against other races. \_\_\_\_\_%
- d. My religion against all others. \_\_\_\_\_%
- e. Others? (Explain) \_\_\_\_\_  
\_\_\_\_\_

3. Other survivors might be expected to react with increased social constructiveness. What percent of survivors do you think would cooperate more willingly than normally with:

- a. His own family. \_\_\_\_\_%
- b. Other families, neighbors, etc. \_\_\_\_\_%
- c. Members of other races. \_\_\_\_\_%
- d. Adherents to other religions. \_\_\_\_\_%
- e. Others? (Explain) \_\_\_\_\_  
\_\_\_\_\_

4. What percentage of survivors would be:

	<u>After one week</u>	<u>After one month</u>	<u>After six months</u>
a. Completely cut-off from communication with the federal government?.....	____%	____%	____%
b. In sporadic and unreliable communication with the federal government?.....	____%	____%	____%
c. Able to receive communications from the federal government with some effort? .....	____%	____%	____%
d. In free and relatively easy communication with the federal government?.....	____%	____%	____%
TOTALS	100%	100%	100%

5. Most policy suggestions on the whole communications issue had to do with how well-prepared the society was before the nuclear exchange, rather than with what society might do afterwards to improve communications. Do you think the government should place a higher priority currently on the establishment of a nationwide communication net which could withstand such an attack?

Yes \_\_\_\_\_ No \_\_\_\_\_

6. If the nationwide system were as it is today, do you have any suggestions on what the federal government might do after such an attack to improve communication?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. On the whole, would the new leaders tend to be: (Check one of each pair.)

	<u>After one month</u>	<u>After six months</u>	
(1a)	_____	_____	Nationalist; or
(1b)	_____	_____	Internationalist.
(2a)	_____	_____	Conservative to reactionary; or
(2b)	_____	_____	Liberal to radical.
(3a)	_____	_____	Hawk; or
(3b)	_____	_____	Dove.
(4a)	_____	_____	Action-oriented; or
(4b)	_____	_____	Intellectual-oriented.
(5a)	_____	_____	Materialistically-oriented; or
(5b)	_____	_____	Spiritually-oriented.

8. Which government policy do you think most desirable:

- \_\_\_\_\_ Maintain traditional leaders by discouraging emergence of new leaders.
- \_\_\_\_\_ Attempt to bring new leaders into the government's unified command.
- \_\_\_\_\_ Evaluate new leaders carefully, encouraging cooperative ones and discouraging others.
- \_\_\_\_\_ Encourage any emergence of leadership indiscriminantly, since it is so badly needed.

9. Estimate the probability of a major, widespread revolt against the federal government: \_\_\_\_\_
10. If such a revolt occurred, what do you think is the probability that the government would fall? \_\_\_\_\_
11. Estimate the probability that sections of the country would successfully secede: \_\_\_\_\_
12. Estimate the probability of TOTAL social collapse into complete anarchy: \_\_\_\_\_
13. Please list any other questions you would like to see asked of all respondents.

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SECTION C: Independent Variables

Many respondents pointed out that the prospects for recovery would depend to too great an extent on various independent (uncontrollable) variables for them to answer the questions. Among these are the following, not covered in our original scenario. Please evaluate the importance of each by circling one of the following numbers:

- 0 = irrelevant;
- 1 = some effect;
- 2 = important;
- 3 = crucial, all-important.

1. The state of other nations and our (preattack) relations with them.  
0 1 2 3
2. Demography of attrition--which survival rates obtain for various professions, skills, etc., that will be crucial.  
0 1 2 3
3. War policy--whether there ensues peace, a truce, surrender, more war, etc.  
0 1 2 3
4. Preattack political/emotional state of the nation (amount of dissention, national will, image of the President, etc.).  
0 1 2 3
5. Availability of individual weapons.  
0 1 2 3
6. Amount of preattack preparation and training.  
0 1 2 3
7. Quality of preattack preparation and training.  
0 1 2 3
8. Rationality of the government response--is it wise, politic, accetable, clear, positive, firm, equable?  
0 1 2 3
9. Can you think of any other important independent variables? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SECTION D: Combined Effect on the Labor Force

We ask you now to make some estimates about the postattack labor force. It is a relatively straightforward matter to calculate the size of the surviving physically healthy labor force at any given time after a given attack, and this number may be modified by considering other strictly physical factors--such as the availability of adequate diet, the presence of ill or injured family members requiring intensive care, and so on. What has not been so straightforward has been the further modification of this number from the influence of the numerous psychological/social factors under consideration here. So let us consider here the surviving, physically healthy and uninjured members of the labor force, which, under normal psycho-social conditions would be available for work.

	<u>After one week</u>	<u>After one month</u>	<u>After six months</u>
1. Of these otherwise available workers,			
a. What percent would be incapacitated by psycho-social <u>breakdowns</u> of one kind or another, or just complete withdrawal from organized society?	___%	___%	___%
b. What percent would be unavailable because of the felt need to <u>independently</u> protect/sustain himself, his family, and/or his close associates?	___%	___%	___%
c. What percent would be unavailable because of active participation in <u>anti-government efforts</u> ?	___%	___%	___%
d. What percent would be available <u>only</u> on jobs for which the pay was in immediately beneficial goods and services (e.g., food, shelter)?	___%	___%	___%
e. What percent would be available without any such constraints?	___%	___%	___%
Totals	100%	100%	100%

	<u>After one week</u>	<u>After one month</u>	<u>After six months</u>
2. Of those physically healthy survivors actually working on recovery projects, what percent would function:			
a. With greatly degraded efficiency, because of various psycho-social burdens?	___%	___%	___%
b. More or less normally?	___%	___%	___%
c. With greatly increased efficiency, because of the stimulus of challenge or other positive psycho-social factors?	___%	___%	___%
Totals	100%	100%	100%

SECTION E: Biographical Data

(Please answer for yourself, even if others assisted you with this questionnaire.)

1. Age: \_\_\_\_\_ Years
2. Sex: \_\_\_\_\_
3. Educational background (fields studied; degrees; etc.): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Present job description: \_\_\_\_\_  
\_\_\_\_\_
5. How many years have you worked (or did you work) on problems concerned with nuclear attack effects? \_\_\_\_\_ Years.
6. In your present occupation, are you involved with this field: \_\_\_\_\_
7. If you were introducing a colleague to the postattack research field, or briefing him on what research and study has been done, what are the first three books or reports that you would recommend to him? (Give title and author, if known.)
  - a. \_\_\_\_\_  
\_\_\_\_\_
  - b. \_\_\_\_\_  
\_\_\_\_\_
  - c. \_\_\_\_\_  
\_\_\_\_\_

## SCENARIO

In order that respondents may have some common frame of reference, the following brief scenario is provided. You are asked to read the scenario and then answer the question on page 5.

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1. In late 1971, there has been a period of rapidly rising tensions, primarily in the NATO theater of operations, consisting of an increasingly belligerent attitude of Soviet countries toward the Western allies. More specifically,

- the Soviet Union has applied pressure on Western Europe, making demands unacceptable to several European nations.
- Soviet naval forces have been deployed in a threatening or suspicious manner around the world, and mobilization activities are reported within the Soviet Union.
- harassment and covert attacks on allied shipping have occurred in a number of widely-spread incidents.

In response, NATO countries have adopted increasing states of alert readiness, and some reserves in the U. S. have been mobilized by October of 1971.

2. On January 1, 1972, Warsaw Pact nations mount land, air, and sea attack in Europe. Allied shipping in both Atlantic and Pacific is attacked with increasing frequency. Various conditions of emergency are declared in some states, as civil defense activities reach a high level. All battle staffs are fully activated, and the mass media are utilized to disseminate public information about the crisis and how to react in case of emergency.

3. On January 5, at 0 hours EST, the Soviet Union launches a barrage believed to be between 3,000 and 4,000 megatons against North America, consisting of an estimated 700-800 weapons aimed primarily at military and urban/industrial targets. A concurrent attack is launched against the NATO nations of Europe.

4. In retaliation, the U.S. mounts a roughly equivalent attack on the Soviet Union. The entire exchange lasts approximately 24 hours.

5. As a result of the attack, surviving authorities have estimated that between 60 and 65 million Americans were killed outright, and that about 40 million are so ill or injured that either they are expected to die or they are permanently disabled. It is also estimated that up to 20 million are ill or injured but are likely to recover.

6. It is also estimated that about 40 per cent of heavy industry has been destroyed, while another 40 per cent will require repairs or decontamination delays. Over half of the American mainland was subjected, for some period of time, to fallout radiation dosages which were fatal for those without any protection.

In general, the Federal Government and the Military are the institutions most intact, while the local governments have tended either to survive or be destroyed depending on location. Broadcasting facilities remain adequate to cover most areas, but receivers dependent on external power sources are, of course, inoperative over much of the country. Rail and highways are severely damaged at their urban nodes. The amount of food stockpiled in urban areas is highly varied although in most areas adequate food supplies exist if they can be located and distributed.

THIRD ROUND

AREA CODE  
703  
893-6200



*human sciences research inc*

WESTGATE RESEARCH PARK  
7710 OLD SPRINGHOUSE ROAD McLEAN, VIRGINIA 22101

16 February 1971

Dear

This is the third and last questionnaire in our study of the social and psychological effects of nuclear attack. We hope you will stay with us through this last round, since the results are beginning to get quite interesting.

You will find two booklets enclosed with this letter. The smaller is a narrative description of some of the analysis of the Second-Round responses. You may wish to read this before considering the larger booklet, which is the Third-Round Questionnaire itself.

Please do not be dismayed by the bulk of this questionnaire--it is essentially a repeat of the Second Round, except that a tally of the Second-Round responses have been fed back to you.

The resources of this study do not permit any further iteration of the questionnaire. However, it is apparent that with the results of Round Three in hand, we will have enough data to provide some very pertinent analysis. As a participant, you will of course receive a copy of any report prepared from these data.

Please respond as soon as possible, and return the questionnaire in the addressed and postage-paid envelope.

We wish to thank you as strongly as we can for the time and effort you have donated to this study. From the results so far, we are encouraged to think you will find the results both interesting and useful.

Sincerely,

HUMAN SCIENCES RESEARCH, INC.

Peter G. Nordlie  
Research Director

PGN:smw  
Enclosures: 3

A-53

THIRD ROUND  
DATA COLLECTING PACKAGE  
on  
A STUDY OF THE CONSEQUENCES OF  
SOCIAL AND PSYCHOLOGICAL FACTORS IN  
HYPOTHETICAL NUCLEAR ATTACKS

being conducted by  
Human Sciences Research, Inc.  
Project Director: Peter G. Nordlie

under contract to the  
Office of Civil Defense  
Contract No. DAHC 20-70-C-038  
Work Unit 3542B

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INTRODUCTION

This is the third and last in our series of questionnaires on the likely social and psychological effects of nuclear attack.

As you will recall, the first questionnaire asked for narrative descriptions of "social and psychological factors" and "the effects (factors) are likely to have on recovery activities." The second questionnaire contained 100 statements summarizing the First-Round responses and describing social or psychological aspects of the postattack world. Respondents were asked to indicate whether they agreed with each statement and to evaluate them with regard to how extensive or widespread the phenomenon described would be and how important an influence it would have on the national recovery effort. In addition, a number of questions were asked and numerical estimates of effects requested.

This Third-Round Questionnaire provides feedback to each participant on the results of Round Two and asks participants to reconsider their earlier responses in the light of the feedback information provided or any other reason they might have to modify their response on Round-Two.

In addition to the feedback information appearing in the questionnaire itself, we have prepared a brief narrative summary of the results to date, which is presented in a separate booklet enclosed with the questionnaire.

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Section A: 100 Statements from the Round-Two Questionnaire

INSTRUCTIONS

In this section are the 100 statements from the Round-Two Questionnaire with the number of times each response was given by the 27 respondents. (You will recall that the EXTENT and IMPORTANCE questions were answered only if you answered Yes to the AGREE question.)

Your own responses to the Round-Two Questionnaire are shown circled in green.

As you would expect, on some items, there is very high agreement, and on others, varying degrees and kinds of disagreement.

Please examine each statement and the responses of the other participants and consider your response. You may wish to respond exactly as you did on the previous round, or you may wish to change your response.

- (1) If you do want to make a change, please make a rectangle around your new response and make an X through your old response as in the example, below:

EXAMPLE:	Yes (21)	Large ( 9)	High ( 9)	8. Martial law would be enforced in many areas.
	? ( 1)	Mod. ( 8)	Some ( 8)	
	No ( 5)	Minor ( 4)	Low ( 4)	

- (2) If you decide to make no change in your previous response, please put a circle around the number of the statement to indicate that you have considered the item and wish to leave your response unchanged. Then go on to the next statement.

EXAMPLE:	Yes ( 9)	Large ( 7)	High ( 5)	9. Martial law would be enforced nationwide.
	? ( 2)	Mod. ( 1)	Some ( 3)	
	No (16)	Minor ( 1)	Low ( 1)	

One part of the Delphi technique generally asks people to justify any response which differs from the consensus of responses. In this application, however, there are too many items and too many combinations of responses for it to be practicable to follow that practice strictly. To reduce the respondent's task to more manageable proportions, we have identified a limited number of items for

which we are asking you to provide support for your position. We have circled in red those items on your questionnaire.

For Red-Circled Items, please reconsider the statement, just as you would any other, and either change your response or leave it unchanged, whichever you decide. Then, on the back of the page, please write the number of that item and state briefly why you chose your response. Please provide such support whether or not you changed your old response. Provide any support you can, either in the form of data or rational reasons. If you can't think of any particular support for the position you believe to be correct, please indicate that fact.

#### Defining Red-Circled Items

Since it would not be feasible to ask you to provide support for every instance your response differed from the majority, we needed some way of identifying a limited and reasonable number of instances about which we could hope to obtain some information about the reasons for the selection of a particular response. We were interested both in:

- (a) instances in which individuals differed from a clear majority response, and in
- (b) instances in which the group of respondents divided fairly evenly among two or more responses.

For the (a) instances, we were ultimately able to specify a rule which, when applied to the questionnaires from the 27 respondents, resulted in identifying an average of about 10 items per respondent. We state the rule in the footnote\* below with some trepidation because we realize it would take pages of discussion to make clear just what it means and why it achieves our objective. However, by applying the rule to the data on each questionnaire, between 4 and 19 statements were red-circled for each respondent. In addition, six statements (Nos. 7, 42, 48, 51, 70, 89) were red-circled on all questionnaires. These were all items on which the responses were fairly evenly divided and which were considered to be especially relevant to the current study.

On the next page, the instructions for Section A which appeared in the Round-Two Questionnaire is reproduced in case you might not recall them.

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\*The rule is two-fold: (a) any response you made with which fewer than three other respondents agreed will be red-circled, with the limitation that: (b) no more than five respondents will have any one item red-circled.

(Reprinted from the Round-Two Questionnaire)

INSTRUCTIONS FOR SECTION A

In the first section, you will find 100 brief statements, each of which was made by some respondent to the Round-One Questionnaire. Each statement is in the subjunctive mode and says something about how people or groups would react in the postattack situation, as estimated by the respondents who made the statement. You are asked to evaluate these statements in three ways, by circling entries in the three columns to the left of the statements.

First, do you agree with the statement? Circle:

Yes if you believe the statement is true; that such a thing would actually happen.

No if you believe the statement is not true; that such a thing would not happen at all.

? if you don't understand the statement, can't decide, or have no opinion.

If you circle YES, then consider the second column, which asks: How extensive would this effect be? You might agree that a given statement is true, but only for a very small number of people. Other statements you may decide are true and would have very widespread effects. Circle:

Large if you think the statement applies almost universally.

Moderate if you think it would apply widely, but not universally.

Minor if you think it would apply only to a few, or to a small area.

Also, if you answered YES in Column 1, consider the third column, which asks about the importance of the phenomenon to the national recovery effort. Circle:

High if you think it is of great importance to recovery.

Some if you think it is of medium importance to recovery.

Low if you think it is insignificant with respect to recovery.

If, however, you circle NO or ? in the first column, disregard the questions on extent and importance, and go directly to the next statement.

REMEMBER:

If you answer YES in the first column, then also answer in both Columns 2 and 3.

If you answer NO or ? in the first column, ignore Columns 2 and 3 and go on to the next item.

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\_\_\_\_\_  
Name

**SECTION A: 100 Statements from the Round-Two Questionnaire**  
Frequency of each response in parentheses

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (24)	Large ( 9)	High ( 4)
? ( 0)	Mod.* ( 9)	Some (12)
No ( ?)	Minor ( 6)	Low ( 8)
Yes (23)	Large (12)	High (19)
? ( 2)	Mod. (11)	Some ( 4)
No ( 2)	Minor ( 0)	Low ( 0)
Yes (13)	Large ( 2)	High ( 3)
? ( 1)	Mod. ( 5)	Some ( 6)
No (12)	Minor ( 6)	Low ( 4)
Yes (18)	Large ( 1)	High ( 2)
? ( 1)	Mod. ( 6)	Some ( 8)
No ( 8)	Minor (11)	Low ( 8)
Yes (21)	Large ( 1)	High ( 1)
? ( 0)	Mod. ( 5)	Some ( 8)
No ( 6)	Minor (15)	Low (12)
Yes (23)	Large ( 0)	High ( 1)
? ( 3)	Mod. (10)	Some ( 8)
No ( 1)	Minor (13)	Low (14)
Yes (11)	Large ( 3)	High ( 2)
? ( 5)	Mod. ( 2)	Some ( 4)
No (11)	Minor ( 6)	Low ( 5)
Yes (21)	Large ( 9)	High ( 9)
? ( 1)	Mod. ( 8)	Some ( 8)
No ( 5)	Minor ( 4)	Low ( 4)
Yes ( 9)	Large ( 7)	High ( 5)
? ( 2)	Mod. ( 1)	Some ( 3)
No (16)	Minor ( 1)	Low ( 1)

1. There would be an increase in competitive antisocial behavior, such as looting, hoarding, profiteering, robbery, fighting over resources, etc.
2. There would be an increase in adaptive social behavior, such as organizing, learning, innovating, gathering, building, assisting, sharing, etc.
3. People would lose faith in preattack leaders and institutions.
4. People would become apathetic, listless, dependent.
5. People would panic and act irrationally.
6. People would withdraw, isolating themselves from exposure to perceived dangers.
7. People would work only if paid in food, clothing, etc.
8. Martial law would be enforced in many areas.
9. Martial law would be enforced nationwide.

\*Moderate.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (26) ? ( 0) No ( 1)	Large (13) Mod. (11) Minor ( 2)	High ( 9) Some (11) Low ( 6)
Yes (18) ? ( 0) No ( 9)	Large ( 5) Mod. ( 9) Minor ( 4)	High ( 6) Some ( 5) Low ( 7)
Yes (13) ? ( 6) No ( 8)	Large ( 1) Mod. ( 4) Minor ( 8)	High ( 0) Some ( 3) Low (10)
Yes (22) ? ( 4) No ( 1)	Large ( 4) Mod. (10) Minor ( 8)	High ( 3) Some ( 7) Low (12)
Yes (15) ? ( 4) No ( 8)	Large ( 3) Mod. ( 4) Minor ( 8)	High ( 2) Some ( 4) Low ( 9)
Yes (13) ? ( 4) No (10)	Large ( 4) Mod. ( 8) Minor ( 1)	High ( 5) Some ( 8) Low ( 0)
Yes (17) ? ( 3) No ( 7)	Large ( 3) Mod. ( 5) Minor ( 9)	High ( 0) Some ( 5) Low (12)
Yes (20) ? ( 1) No ( 6)	Large ( 2) Mod. ( 4) Minor (14)	High ( 1) Some ( 8) Low (11)
Yes (25) ? ( 0) No ( 2)	Large ( 9) Mod. ( 7) Minor ( 9)	High ( 6) Some (10) Low ( 9)
Yes (19) ? ( 5) No ( 3)	Large ( 4) Mod. (11) Minor ( 4)	High ( 6) Some (11) Low ( 2)
Yes (19) ? ( 0) No ( 8)	Large ( 2) Mod. ( 7) Minor (10)	High ( 1) Some ( 8) Low (10)

10. People would be preoccupied with themselves and their immediate family or group.
11. People would be less interested in or concerned about the larger society; e. g., the nation as a whole.
12. New cults, superstitions, and taboos would arise.
13. People would turn to religion for understanding and solace.
14. People would spend much time trying to comprehend what had happened and looking for danger cues.
15. People would be more submissive, and ready to follow any kind of leader who arose.
16. People would become fatalistic.
17. People would be self-centered, with an "every man for himself" philosophy.
18. People would be family- (or primary group) centered, willing to sacrifice others to the benefit of their families (or groups).
19. People would act in ways that would be locally useful but dysfunctional nationally.
20. Time would be lost grieving for dead or lost loved ones.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (26) ? ( 0) No ( 1)	Large ( 6) Mod. ( 7) Minor (13)	High ( 3) Some ( 7) Low (16)
Yes (16) ? ( 3) No ( 8)	Large ( 0) Mod. ( 7) Minor ( 9)	High ( 0) Some (10) Low ( 6)
Yes (22) ? ( 2) No ( 3)	Large ( 8) Mod. (13) Minor ( 1)	High (13) Some ( 7) Low ( 2)
Yes (14) ? ( 2) No (11)	Large ( 2) Mod. ( 2) Minor (10)	High ( 2) Some ( 4) Low ( 8)
Yes (19) ? ( 3) No ( 5)	Large ( 0) Mod. ( 2) Minor (17)	High ( 1) Some ( 7) Low (11)
Yes ( 1) ? ( 0) No (26)	Large ( 1) Mod. ( 0) Minor ( 0)	High ( 1) Some ( 0) Low ( 0)
Yes ( 5) ? ( 2) No (20)	Large ( 0) Mod. ( 1) Minor ( 4)	High ( 0) Some ( 2) Low ( 3)
Yes (17) ? ( 6) No ( 3)	Large ( 4) Mod. ( 8) Minor ( 5)	High ( 6) Some ( 5) Low ( 6)
Yes (18) ? ( 5) No ( 4)	Large ( 6) Mod. ( 7) Minor ( 5)	High ( 0) Some ( 6) Low (12)
Yes (22) ? ( 4) No ( 1)	Large ( 4) Mod. (11) Minor ( 7)	High ( 5) Some (10) Low ( 7)
Yes ( 8) ? ( 2) No (17)	Large ( 1) Mod. ( 0) Minor ( 7)	High ( 0) Some ( 4) Low ( 4)

21. Time would be lost searching for and asking about lost loved ones.
22. Groups would be struggling against one another, with fights between families, gangs, localities.
23. There would be an increase in willingness to cooperate between individuals and between groups.
24. There would be resistance to federal programs.
25. There would be scattered, local revolts.
26. There would be a nationwide revolution.
27. There would be attempts to secede from the nation.
28. Individuals would subordinate themselves to groups.
29. Conversation would be eased between strangers.
30. There would be a trend toward communal living.
31. People would be paralyzed by role conflict--when acting for one group would jeopardize another.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (26) ? ( 0) No ( 1)	Large (16) Mod. ( 7) Minor ( 3)	High ( 9) Some ( 9) Low ( 7)
Yes (24) ? ( 1) No ( 2)	Large (16) Mod. ( 4) Minor ( 4)	High ( 9) Some (11) Low ( 4)
Yes (25) ? ( 2) No ( 0)	Large (14) Mod. (10) Minor ( 1)	High ( 8) Some (16) Low ( 1)
Yes (27) ? ( 0) No ( 0)	Large (23) Mod. ( 3) Minor ( 1)	High (20) Some ( 5) Low ( 2)
Yes (26) ? ( 1) No ( 0)	Large (18) Mod. ( 7) Minor ( 1)	High (16) Some ( 9) Low ( 1)
Yes (22) ? ( 4) No ( 1)	Large (10) Mod. ( 8) Minor ( 4)	High ( 7) Some ( 8) Low ( 7)
Yes (27) ? ( 0) No ( 0)	Large (19) Mod. ( 7) Minor ( 1)	High (17) Some ( 7) Low ( 3)
Yes (27) ? ( 0) No ( 0)	Large (25) Mod. ( 2) Minor ( 0)	High (23) Some ( 4) Low ( 0)
Yes (22) ? ( 2) No ( 2)	Large ( 9) Mod. (12) Minor ( 1)	High (15) Some ( 6) Low ( 1)
Yes (22) ? ( 3) No ( 2)	Large ( 8) Mod. ( 9) Minor ( 5)	High (10) Some ( 7) Low ( 5)
Yes (15) ? ( 3) No ( 8)	Large ( 3) Mod. ( 4) Minor ( 8)	High ( 4) Some ( 5) Low ( 6)

32. Rumors would flourish.

33. People would desire more communication than would be available.

34. Individual and local innovation would be increased, as people are forced to seek solutions on their own.

35. People would need information.

36. People would need instruction.

37. People would need to have events interpreted to them.

38. People would need reassurance.

39. People would need leadership.

40. New leaders would emerge.

41. The existing federal government would make serious mistakes.

42. People would lose faith in the government.

ROUND THREE

Do You Agree?	If Yes, You Agree, Then		
	How Extensive	How Important to Recovery?	
(f)	(f)	(f)	
Yes ( 8) ? ( 2) No (17)	Large ( 0) Mod. ( 4) Minor ( 4)	High ( 2) Some ( 3) Low ( 3)	43. Communications from the federal government would be ignored.
Yes (26) ? ( 1) No ( 0)	Large (10) Mod. (11) Minor ( 5)	High (10) Some ( 7) Low ( 9)	44. Attempts would be made to evacuate danger areas.
Yes ( 3) ? ( 2) No (22)	Large ( 0) Mod. ( 0) Minor ( 3)	High ( 0) Some ( 0) Low ( 3)	45. Attempts would be made to evacuate the country.
Yes (10) ? ( 2) No (15)	Large ( 0) Mod. ( 2) Minor ( 8)	High ( 0) Some ( 3) Low ( 7)	46. People would fall into despair, and lose all motivation.
Yes (18) ? ( 2) No ( 7)	Large ( 4) Mod. ( 8) Minor ( 6)	High ( 8) Some ( 7) Low ( 3)	47. People would be filled with renewed energy and motivation.
Yes (25) ? ( 2) No ( 0)	Large ( 6) Mod. (15) Minor ( 4)	High (10) Some ( 9) Low ( 6)	48. Complex organizations and institutions would break down or fragment.
Yes (11) ? ( 2) No (14)	Large ( 1) Mod. ( 5) Minor ( 5)	High ( 2) Some ( 4) Low ( 5)	49. There would be a return to more primitive forms of social organization, such as gangs, tribes, etc.
Yes ( 7) ? ( 4) No (16)	Large ( 5) Mod. ( 2) Minor ( 0)	High ( 5) Some ( 2) Low ( 0)	50. Rational economic planning would be impossible.
Yes (16) ? ( 5) No ( 6)	Large ( 5) Mod. ( 4) Minor ( 7)	High ( 5) Some ( 6) Low ( 5)	51. Money would cease to have value and a barter system would develop.
Yes (17) ? ( 3) No ( 6)	Large ( 5) Mod. ( 8) Minor ( 4)	High ( 6) Some ( 8) Low ( 3)	52. The influence and power of the federal government would be reduced.
Yes (26) ? ( 0) No ( 1)	Large (12) Mod. (10) Minor ( 4)	High ( 6) Some (12) Low ( 7)	53. Medical resources would be hoarded.

Do You Agree?	If Yes, You Agree, Then		
	How Extensive	How Important to Recovery?	
(f)	(f)	(f)	
Yes (17) ? ( 0) No (10)	Large ( 4) Mod. ( 8) Minor ( 5)	High ( 4) Some (10) Low ( 3)	54. Law enforcement systems would be overwhelmed.
Yes ( 5) ? ( 2) No (20)	Large ( 1) Mod. ( 1) Minor ( 3)	High ( 3) Some ( 1) Low ( 1)	55. Anarchy would prevail.
Yes ( 9) ? ( 2) No (16)	Large ( 4) Mod. ( 3) Minor ( 2)	High ( 0) Some ( 5) Low ( 3)	56. The legal/judicial system would collapse.
Yes (22) ? ( 1) No ( 4)	Large ( 9) Mod. ( 9) Minor ( 4)	High ( 1) Some ( 9) Low (12)	57. The schools would close.
Yes (25) ? ( 0) No ( 2)	Large ( 5) Mod. (12) Minor ( 8)	High ( 6) Some (14) Low ( 5)	58. Troops would be used to maintain order.
Yes ( 7) ? ( 3) No (17)	Large ( 0) Mod. ( 3) Minor ( 4)	High ( 0) Some ( 2) Low ( 5)	59. There would be rebellions within the armed services.
Yes ( 3) ? ( 5) No (19)	Large ( 0) Mod. ( 1) Minor ( 2)	High ( 1) Some ( 2) Low ( 0)	60. There would be massive, psychotic group behavior which is unprecedented and therefore unpredictable.
Yes (20) ? ( 1) No ( 6)	Large ( 1) Mod. ( 2) Minor (17)	High ( 1) Some ( 5) Low (14)	61. People would wander around in something like a state of shock.
Yes ( 5) ? ( 4) No (18)	Large ( 0) Mod. ( 1) Minor ( 4)	High ( 0) Some ( 0) Low ( 5)	62. People would abandon their old religions.
Yes (17) ? ( 5) No ( 5)	Large ( 1) Mod. ( 7) Minor ( 9)	High ( 0) Some ( 3) Low (14)	63. People would be open to changes in organized religion.
Yes (10) ? ( 4) No (13)	Large ( 2) Mod. ( 6) Minor ( 2)	High ( 1) Some ( 4) Low ( 5)	64. Religious people would be more responsive to the needs of others than would non-religious.

ROUND THREE

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes ( 5) ? (12) No (10)	Large ( 1) Mod. ( 3) Minor ( 1)	High ( 1) Some ( 1) Low ( 3)
Yes (11) ? ( 5) No (11)	Large ( 3) Mod. ( 7) Minor ( 1)	High ( 2) Some ( 5) Low ( 4)
Yes (26) ? ( 1) No ( 0)	Large ( 4) Mod. (11) Minor (11)	High ( 4) Some (13) Low ( 9)
Yes ( 9) ? ( 4) No (14)	Large ( 1) Mod. ( 4) Minor ( 4)	High ( 0) Some ( 5) Low ( 4)
Yes (22) ? ( 2) No ( 3)	Large ( 3) Mod. (12) Minor ( 7)	High ( 5) Some (11) Low ( 6)
Yes (11) ? ( 5) No (11)	Large ( 4) Mod. ( 1) Minor ( 6)	High ( 2) Some ( 4) Low ( 5)
Yes ( 9) ? ( 4) No (14)	Large ( 2) Mod. ( 4) Minor ( 3)	High ( 2) Some ( 3) Low ( 4)
Yes (23) ? ( 1) No ( 3)	Large (10) Mod. (10) Minor ( 3)	High ( 9) Some (10) Low ( 4)
Yes (25) ? ( 1) No ( 1)	Large (14) Mod. (10) Minor ( 1)	High (11) Some (12) Low ( 2)
Yes ( 8) ? ( 2) No (17)	Large ( 4) Mod. ( 3) Minor ( 1)	High ( 5) Some ( 2) Low ( 1)

65. People would be more interested in personal, inner-directed religion than with formal, public religion.
66. Corporations and industries would continue to pursue selfish interests.
67. Local authoritarian organizations would develop.
68. There would be a struggle between those calling for strong enforcement of law and order and those who fear the loss of civil liberties.
69. People would be forced to work on certain projects, whether they liked it or not.
70. The Bill of Rights would be temporarily suspended.
71. People would become more "moral."
72. People would be more concerned with the present than with the future.
73. People would be more concerned with their immediate locality than with larger areas as a whole (e. g., state, region, nation).
74. People would be more concerned with the fate of the nation than with that of their state or region.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (22) ? ( 3) No ( 2)	Large ( 9) Mod. (13) Minor ( 0)	High (10) Some (11) Low ( 1)
Yes (13) ? ( 4) No (10)	Large ( 2) Mod. ( 2) Minor ( 9)	High ( 3) Some ( 2) Low ( 8)
Yes (21) ? ( 0) No ( 6)	Large ( 8) Mod. ( 5) Minor ( 8)	High ( 2) Some ( 7) Low (12)
Yes (18) ? ( 2) No ( 7)	Large ( 6) Mod. ( 3) Minor ( 9)	High ( 1) Some ( 6) Low (11)
Yes (21) ? ( 3) No ( 3)	Large (17) Mod. ( 2) Minor ( 2)	High ( 5) Some ( 5) Low (11)
Yes ( 3) ? ( 1) No (20)	Large ( 0) Mod. ( 0) Minor ( 6)	High ( 0) Some ( 0) Low ( 6)
Yes ( 6) ? ( 3) No (18)	Large ( 0) Mod. ( 1) Minor ( 5)	High ( 0) Some ( 1) Low ( 5)
Yes (17) ? ( 4) No ( 6)	Large ( 7) Mod. ( 6) Minor ( 4)	High ( 4) Some ( 6) Low ( 7)
Yes (27) ? ( 0) No ( 0)	Large (22) Mod. ( 3) Minor ( 2)	High (13) Some ( 8) Low ( 6)
Yes (16) ? ( 2) No ( 9)	Large ( 1) Mod. ( 6) Minor ( 9)	High ( 2) Some ( 9) Low ( 5)

75. There would be a strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions.

76. People would be anxious to try out new systems, values, and life-styles in order to avoid the mistakes of the past.

77. People would blame their troubles on the federal government.

78. People would blame their troubles on a few national leaders.

79. People would blame their troubles on the Soviet Union.

80. People would blame their troubles on themselves.

81. People would blame their troubles on some minority group.

82. There would be a strong desire for revenge against the Soviet Union.

83. There would be a strong desire for peace.

84. There would be conflict between races.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes ( 6) ? ( 3) No (18)	Large ( 0) Mod. ( 1) Minor ( 5)	High ( 0) Some ( 0) Low ( 6)
Yes (18) ? ( 3) No ( 6)	Large ( 2) Mod. ( 6) Minor (10)	High ( 3) Some ( 7) Low ( 8)
Yes (14) ? ( 2) No (11)	Large ( 4) Mod. ( 7) Minor ( 3)	High ( 4) Some ( 4) Low ( 6)
Yes (11) ? ( 3) No (13)	Large ( 2) Mod. ( 5) Minor ( 4)	High ( 0) Some ( 6) Low ( 5)
Yes (12) ? ( 2) No (13)	Large ( 1) Mod. ( 8) Minor ( 3)	High ( 4) Some ( 5) Low ( 3)
Yes (18) ? ( 1) No ( 8)	Large ( 4) Mod. ( 9) Minor ( 5)	High ( 7) Some ( 7) Low ( 4)
Yes ( 6) ? ( 4) No (17)	Large ( 0) Mod. ( 1) Minor ( 5)	High ( 0) Some ( 3) Low ( 3)
Yes (11) ? ( 7) No ( 9)	Large ( 0) Mod. ( 0) Minor (11)	High ( 1) Some ( 2) Low ( 8)
Yes (18) ? ( 2) No ( 7)	Large ( 1) Mod. ( 9) Minor ( 8)	High ( 2) Some ( 9) Low ( 7)
Yes (20) ? ( 5) No ( 2)	Large ( 6) Mod. ( 9) Minor ( 5)	High ( 5) Some (11) Low ( 4)
Yes ( 5) ? ( 1) No (21)	Large ( 0) Mod. ( 2) Minor ( 3)	High ( 0) Some ( 2) Low ( 3)

85. There would be conflict between religions.
86. There would be conflict between socio-economic classes.
87. There would be conflict between hawks and doves.
88. There would be conflict between conservatives and liberals.
89. There would be conflict between sections of the country.
90. There would be conflict between urban and rural populations.
91. There would be conflict between Americans and Canadians and/or Mexicans.
92. Groups would form with the aim of continuing the disorder and confusion.
93. There would be a return to rugged individualism.
94. There would be a return to reliance on and trust of one's neighbors.
95. People would concentrate on the past instead of on the present and future.

Do You Agree?	If Yes, You Agree, Then	
	How Extensive	How Important to Recovery?
(f)	(f)	(f)
Yes (13)	Large ( 4)	High ( 3)
? ( 8)	Mod. ( 3)	Some ( 3)
No ( 6)	Minor ( 6)	Low ( 7)
Yes (20)	Large ( 7)	High ( 1)
? ( 1)	Mod. ( 7)	Some ( 6)
No ( 6)	Minor ( 6)	Low (13)
Yes (14)	Large ( 1)	High ( 1)
? ( 2)	Mod. ( 4)	Some ( 1)
No (11)	Minor ( 9)	Low (12)
Yes (19)	Large ( 7)	High ( 9)
? ( 3)	Mod. ( 9)	Some ( 9)
No ( 5)	Minor ( 3)	Low ( 1)
Yes (11)	Large ( 2)	High ( 0)
? ( 6)	Mod. ( 2)	Some ( 2)
No (10)	Minor ( 7)	Low ( 9)

96. Social attitudes would become more conservative.

97. Survivors would feel great relief over having been spared.

98. Survivors would feel great guilt over having been spared.

99. After the initial shock and inactivity would come a hyperactive rebound of energy and activity.

100. People would be afraid of being alone.

SECTION B: Quantitative Estimates

There were a number of questions in the Second Round which asked you to estimate numbers--percentages and probabilities which tend to quantify some of the social and psychological effects under study. The results were quite variable, but as these are numerical, the Delphi procedure can be applied without modification.

Beside each question listed below is printed the MEDIAN response given by responding panelists, and the IQR--the InterQuartile Range--or limits within which at least half the estimates fell. In the next column, headed OLD, is written your original estimate. Please reconsider your response and place your new estimate in the column marked NEW. (Write in your estimate in the NEW column even if it is the same as it was.)

If your new estimate is outside the IQR, briefly explain on the back of this page why you think the percentages should be what you have estimated rather than somewhere within the IQR. You may discuss several such estimates in one explanation, if you wish.

QUESTION	MEDIAN	IQR (In %)	OLD	NEW
B2. It might be expected that under such stress, some survivors would react destructively against others. What percent of survivors do you think would act on the basis of the following attitudes:				
a. Every man for himself	10%	( 5-15)	___%	___%
b. My family against all others.	30%	(20-75)	___%	___%
c. My race against other races.	10%	( 5-20)	___%	___%
d. My religion against all others.	1%	( 0-5 )	___%	___%
B3. Other survivors might be expected to react with increased social constructiveness. What percent of survivors do you think would cooperate <u>more willingly</u> than normally with:				
a. His own family	80%	(50-90)	___%	___%
b. Other families, neighbors, etc.	70%	(40-85)	___%	___%
c. Members of other races.	50%	(20-75)	___%	___%
d. Adherents to other religions.	70%	(20-90)	___%	___%

QUESTION	MEDIAN	IQR	OLD	NEW
B4. What percent of survivors would be:		(In %)		
a. Completely cut-off from communication with the federal government?				
(1) after one week	25%	(20-50)	___%	___%
(2) after one month	10%	( 5-25)	___%	___%
(3) after six months	0%	( 0-5)	___%	___%
b. In sporadic and unreliable communication with the federal government?				
(1) after one week	23%	(15-40)	___%	___%
(2) after one month	15%	( 5-25)	___%	___%
(3) after six months	7%	( 1-10)	___%	___%
c. Able to receive communications from the federal government with some effort?				
(1) after one week	18%	(10-45)	___%	___%
(2) after one month	25%	(10-40)	___%	___%
(3) after six months	20%	( 5-50)	___%	___%
d. In free and relatively easy communication with the federal government?				
(1) after one week	10%	( 3-50)	___%	___%
(2) after one month	40%	(10-75)	___%	___%
(3) after six months	70%	(30-90)	___%	___%
B9. Estimate the probability of a major, widespread revolt against the federal government.	4%	( 1-10)	___%	___%
B10. If such a revolt occurred, what do you think is the probability that the government would fall?	10%	( 1-20)	___%	___%
B11. Estimate the probability that sections of the country would successfully secede.	2%	( 1-5)	___%	___%
B12. Estimate the probability of TOTAL social collapse into complete anarchy.	1%	( 0-5)	___%	___%

We ask you now to make some estimates about the postattack labor force. Let us consider here the surviving, physically healthy and uninjured members of the labor force, which under normal psycho-social conditions would be available for work.

QUESTION	MEDIAN	IQR (In %)	OLD	NEW
B13* Of these otherwise available workers,				
a. What percent would be incapacitated by psycho-social <u>breakdowns</u> of one kind or another, or just complete withdrawal from organized society?				
(1) after one week	10%	(10-20)	___%	___%
(2) after one month	8%	( 5-10)	___%	___%
(3) after six months	5%	( 2-5)	___%	___%
b. What percent would be unavailable because of the felt need to <u>independently</u> protect/sustain himself, his family, and/or his close associates?				
(1) after one week	35%	(20-50)	___%	___%
(2) after one month	20%	(15-30)	___%	___%
(3) after six months	10%	( 5-20)	___%	___%
c. What percent would be unavailable because of active participation in <u>anti-government</u> efforts?				
(1) after one week	2%	( 1-5 )	___%	___%
(2) after one month	2%	( 1-5 )	___%	___%
(3) after six months	4%	( 1-5 )	___%	___%
d. What percent would be available <u>only</u> on jobs for which the pay was in immediately beneficial goods and services (e. g., food, shelter)?				
(1) after one week	20%	(10-25)	___%	___%
(2) after one month	20%	(10-30)	___%	___%
(3) after six months	10%	( 5-25)	___%	___%
e. What percent would be available without any such constraints?				
(1) after one week	16%	(10-45)	___%	___%
(2) after one month	40%	(10-30)	___%	___%
(3) after six months	10%	( 5-20)	___%	___%

QUESTION	MEDIAN	IQR (In %)	OLD	NEW
B14.* Of those physically healthy survivors actually working on recovery projects, what percent would function:				
a. With greatly degraded efficiency, because of various psycho-social burdens?				
(1) after one week	30%	(15-60)	___%	___%
(2) after one month	20%	(10-30)	___%	___%
(3) after six months	10%	( 5-20)	___%	___%
b. More or less normally?				
(1) after one week	30%	(20-60)	___%	___%
(2) after one month	50%	(35-70)	___%	___%
(3) after six months	73%	(55-80)	___%	___%
c. With greatly increased efficiency, because of the stimulus of challenge or other positive psycho-social factors?				
(1) after one week	30%	(20-60)	___%	___%
(2) after one month	20%	(10-35)	___%	___%
(3) after six months	13%	( 5-25)	___%	___%

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\*Questions B13 and B14, above, were numbered D1 and D2 in the Round-Two Questionnaire.

SECTION C: Independent Variables

In Section C of the Second Round, you were asked to evaluate the importance of eight independent variables (not covered in the original scenario) on a scale ranging from "irrelevant," through "some effect" and "important," to "crucial."

There was remarkable agreement in this section: On each of the eight, over half of the respondents picked one importance rating. Interestingly, the only two which the majority considered to be "crucial" dealt with national activities post-attack, while the five considered to be "important" dealt with conditions prior to or at the moment of the attack. Only one was given a rating of "some effect":

C5. Availability of individual weapons.

Because of its low rating, we will ignore this variable at this point. If you disagree, and attribute more importance to it, mark the above box and tell why on the back of this page.

The five considered "important" were:

- C7. Quality of preattack preparation and training.
- C6. Amount of preattack preparation and training.
- C4. Preattack political/emotional state of the nation  
(amount of dissention, national will, image of  
the President, etc.)
- C1. The state of other nations and our (preattack)  
relations with them.
- C2. Demography of attrition--which survival rates  
obtain for various professions, skills, etc.,  
that will be crucial.

If you disagree with the "important" rating of these, mark the appropriate box and explain why on the back of this page. These five are handled in a paragraph which has been added to the original scenario (see accompanying scenario).

The variables considered to be "crucial" impel us to question the panel with regard to them:

C3a. After an attack such as described in the scenario, what in your opinion would be the war policy (before knowing what the enemy response was going to be) of the United States Government:

- to surrender.
- to offer a truce or cease-fire.
- to pursue the war by conventional means.
- to pursue the war by nuclear means.
- to wait and see what happens.
- other: \_\_\_\_\_
- I disagree that this is of crucial importance.

C3b. What do you think would happen:

- there would be a second (and perhaps third) nuclear strike.
- the war would continue conventionally at as high a level as the opponents could maintain.
- the war would continue at a subdued level.
- there would be a cease-fire immediately.
- there would be an immediate surrender.
- there would be a cease-fire or surrender after \_\_\_\_\_ months.
- Other: \_\_\_\_\_
- I disagree that this is of crucial importance.

C8. In your opinion, would the overall response of the federal government to such an attack be:

- foolish and disastrous
- less rational than usual.
- mixed.
- more rational than usual.
- unusually wise and productive.
- I disagree that this is of crucial importance.

SECTION D: Respondents' Questions

The following questions were suggested by respondents as being of particular interest to them or as being reflective of underlying assumptions:

	<u>YES</u>	<u>NO</u>
1. Have you had any <u>personal</u> experience with major disaster; i. e., have you been in a situation involving widespread damage and numerous casualties: If yes, are your personal experiences related to: ___ War; e. g., bombing, invasion, etc. ___ Natural disaster; earthquake, hurricane, etc. ___ Accident; explosion, plane crash, etc.	___	___
2. Do you believe that the military should take over governmental functions for the period immediately following a nuclear exchange?	___	___
3. Would a major, well-organized preattack public education program on all conceivable aspects of postattack society, presented to the public via classrooms, television, etc., help to prepare the public and offset the fear which would otherwise result from such an attack?	___	___
4. Do you think the attack under consideration would turn America into a predominantly rural/agrarian society?	___	___
5. Is the present spectrum, or distribution of various behavioral characteristics across the population about the same as it would be after the attack? That is, would such an attack remove a behaviorally representative sample of the population?	___	___
6. Do you think the public should be better informed currently about the Department of Defense budget?	___	___
7. Do you think the current Civil Defense program should be expanded?	___	___

8. If after such an attack, the inactive and retired reservists were called into active duty, what percentage do you think would report voluntarily? \_\_\_\_\_%

9. In your opinion, what is the probability (expressed in percent) that the United States will be involved in a major nuclear exchange in the next twenty years? \_\_\_\_\_%

10. Assuming that all banks and other financial institutions closed immediately following the attack, how long do you think it would be before the following activities began again with significant frequency?

a. Banks begin to reopen? \_\_\_\_\_

b. People begin depositing funds? \_\_\_\_\_

c. Banks begin making loans to large businesses? \_\_\_\_\_

d. Banks begin making loans to individuals? \_\_\_\_\_

11. In the scenario used in this study, it was stated that slightly over 100 million Americans were killed or permanently disabled by the attack postulated--that is, about 50% of the population.

Would your responses to this questionnaire have differed significantly if, with an otherwise identical scenario, the portion of the population killed or disabled (instead of 50%) had been:

	Yes, my responses would be very different	No, my responses would be about the same
	_____	_____
30%	_____	_____
40%	_____	_____
60%	_____	_____
70%	_____	_____

If you answered Yes for any of the four percentages listed above, please indicate on the back of this page what the general nature of the differences would be.

## BRIEF SUMMARY OF ROUND-TWO RESULTS

Introduction

There are essentially two types of analysis proceeding on the data being assimilated in this study. The first, and most straightforward analysis is that applied to results of one questionnaire to produce the next one: In the present case, this amounted to little more than a tallying up of responses so that the Round-Two results might be fed back to you in this round, and the development of criteria by which certain responses were designated as being of special interest or importance. These criteria are discussed in the instructions for Round Three (see Page III, of the Data Collecting Package).

The second, and more comprehensive, analysis is that which has been proceeding without interruption since the First Round--an attempt to take a larger view of various patterns of responses by grouping types of agreement and disagreement, correlating responses to different sets of questions, and attempting to determine the existence and cohesion of schools of thought among the panelists. The results of this analysis will not be complete until after the current round and cannot, therefore, be provided as feedback at this time.

However, a number of generalizations have emerged from our analysis of the Second-Round responses, and we have provided a brief narrative summary of the results so far. All conclusions expressed are tentative, pending the complete analysis to be reported this spring.

Results

Those of you who thought some of the statements offered for your evaluation in the Second-Round Questionnaire were irrelevant or nonsensical may be reassured to learn that a clear majority of responding panelists<sup>1</sup> designated 48 of the 100 statements as being just

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<sup>1</sup>"A majority of responding panelists" means over half of those who responded to an item with other than a "don't know" answer; a "clear majority" designates a situation in which the majority position was not challenged by a significantly cohesive dissenting position.

that--either they disagreed with the statement entirely or thought of it as having neither much importance nor extent.<sup>2</sup>

The types of statements so designated form particularly interesting patterns--speaking most generally, most of those statements portraying the extremely negative-to-nightmarish aspects of the postattack world were rejected. Thus, all statements projecting revolutions, rebellions, secessions, and anarchy were rejected; as were suggestions of open conflict between religious, political, or sectional groups. Similarly, descriptions of despair, paralysis, mass psychosis, superstition, shock, apathy, panic, irrationality, and grief tended to be rejected; as were implications that blame would be placed on anyone other than the enemy or that survivors would, to any great extent, lose faith in preattack leaders, institutions, values, lifestyles, or religions. Nor was credence given to predictions of major changes in social mechanisms, respondents rejecting statements which presumed that civil liberties would be abandoned, that martial law would become universal, or that gangs and tribes would form and do battle.

On the other hand, a few of the more "positive" statements were rejected--though people would not become wholly self-centered, neither would they become more "moral"; though religions would not be abandoned, neither would adherence to them make one more responsive to the needs of others.

Conversely, statements with which most respondents agreed tended to be the more positive projections, though not quite so universally. Those to which Some-to-High<sup>3</sup> importance was attributed (and Moderate-to-Large extent: there was a close correlation between importance and extent at this end of the scale) included predictions of increased adaptive behavior, willingness to cooperate, and innovation. But the type of statement most consistently ranked important was that having to do with the need for leadership of all kinds--the need for information, reassurance, instruction, communication, and leaders themselves. And, as if to balance this, there was fair consensus on the prediction that new leaders would emerge.

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<sup>2</sup>That is, they responded either by marking "NO" (to indicate disagreement with the statement) or by agreeing but evaluating importance as "LOW" and extent as "MINOR." The two categories are combined because of an apparent overlap in respondents' subjective definitions of them.

<sup>3</sup>Investigations of questionnaire reliability (whether respondents would answer the same way twice) indicate very few instances of shifts of more than one point--e. g., instances where a respondent changes his evaluation all the way from "HIGH" to "LOW" importance, etc. Smaller shifts are common, however, so adjacent evaluations are commonly grouped together in this analysis into such categories as "Some-to-High" importance, or "Minor-to Moderate" extent.

### ROUND THREE

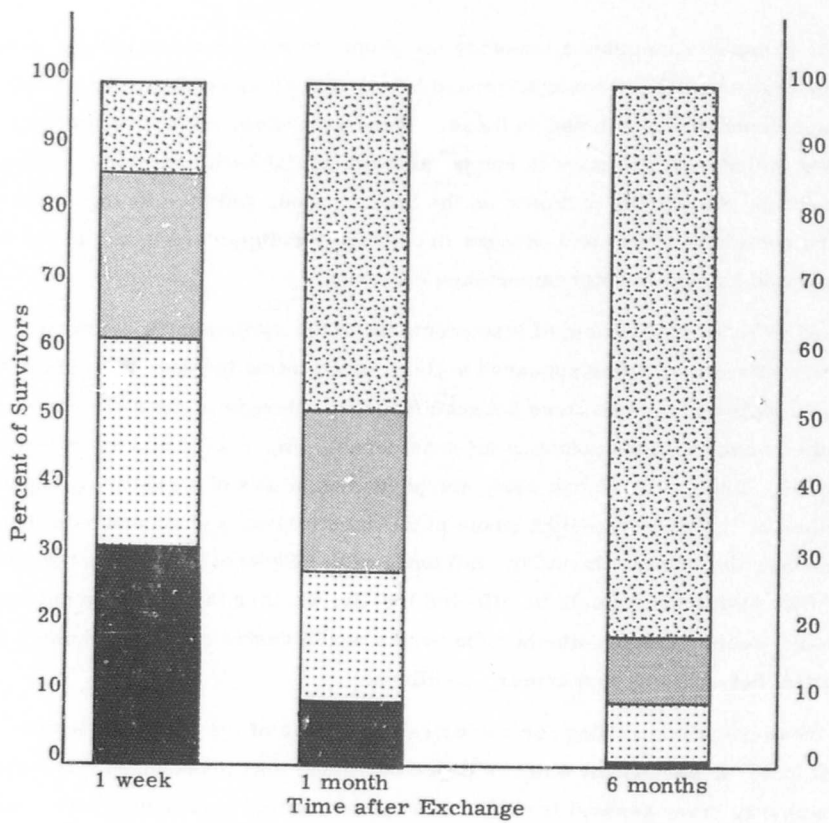
The picture thus portrayed might seem one-sided, however, were it not for the consensus both on the extent and importance of a number of projections of major problems. Thus, the increased focus on the present, the family, and the locality (rather than on the nation as a whole) would cause complex institutions and organizations to break down or fragment and promote actions which, though seemingly useful locally or in the short run, would be dysfunctional in the larger sense. Compounding this is the projection that the Federal Government would make serious mistakes and that the land would be rife with rumors.





Other prospects included a tendency for people to withdraw and isolate themselves, an outbreak of scattered, local revolts, forced labor, and class conflict, but neither great extent nor importance was attributed to these. More extensive, but still relatively unimportant factors included an increase in competitive antisocial behavior, the hoarding of medical resources, the placing of blame on the Soviet Union, and the closing of the schools. Trends toward communal living and changes in organized religion are examples of factors agreed to but rated as having little importance or extent.

There were an assortment of statements on which agreement was less pronounced, and on several statements, there appeared a clear polarization between two opinions. Generally, such splits of opinion were between those who thought a given statement described a rather significant phenomenon (of considerable importance and extent) or a rather insignificant one. And in all but one case, the phenomenon was of a relatively negative nature--whether or not people would become more submissive, and subordinate themselves to groups; whether the interest in and the influence of the Federal Government would be reduced; whether martial law would be effected locally; whether law enforcement and judicial systems would collapse; whether the people would desire revenge; whether there would be conflict between city and country dwellers.

On those questions calling for numerical estimates of the effects of socio-psychological factors, agreement was, as expected, much less pronounced. But even when it came to numbers, many general trends and areas of general agreement emerged. Three questions probed respondents' perceptions regarding changes in the postattack world over time, and thus are of particular interest, since time is the variable on which there is least agreement. The first of these asked respondents to consider the ability of survivors to receive communications from the Federal Government. Since this is a predominantly physical variable, it may be considered as reflective of respondents' underlying assumptions about the extent of physical disruption, and of society's ability to rebuild. Figure 1 shows the median responses to this question.

Figure 1.  
 COMMUNICATION WITH THE FEDERAL GOVERNMENT  
 (Median Estimates - Question B4)



-  - Completely cut off
-  - In sporadic and unreliable communication
-  - Able to receive communications with effort
-  - In relatively free and easy communication

### ROUND THREE

Figures 2 and 3 show the median responses to questions attempting to sum up all the social and psychological factors by considering their effects on the availability and efficiency of the physically unscathed segment of the labor force. The slight growth over time in the percentage of those participating in anti-government activities is an intriguing aspect of Figure 2; and on Figure 3, the limits about the medians within which 50% of the responses fell have been added as an indication of variability.

A number of questions were of the "yes-or-no" or checklist variety, and thus are not iterated in this questionnaire. Among the more interesting responses to questions of this type were:

- About three-quarters of the respondents agreed that "fear of one kind or another" would be the most significant psychological barrier to national recovery, while two of the dissenters pointed out that fear, while widespread, might not act as a barrier, but rather as an impetus to greater and more cooperative activity.

- The "half-life" of fear, the length of time necessary "for all this fear to subside to one-half its maximum severity," was estimated at anything from two days to "years and years." The median response, however, was about three weeks, with half the respondents citing figures at between two weeks and six months.

- About three-quarters of the respondents agreed that fear and its effects would be more profound in areas suffering "near misses" than in areas further removed from devastation.

Finally, on the basis of respondents' evaluation of independent variables, it became desirable to expand the original Scenario to include a number of points not included originally. The revised Scenario, to which three final paragraphs have been added, is attached.

Figure 2.  
**AVAILABILITY OF POTENTIAL LABOR FORCE**  
 (Median Estimates - Question D1)

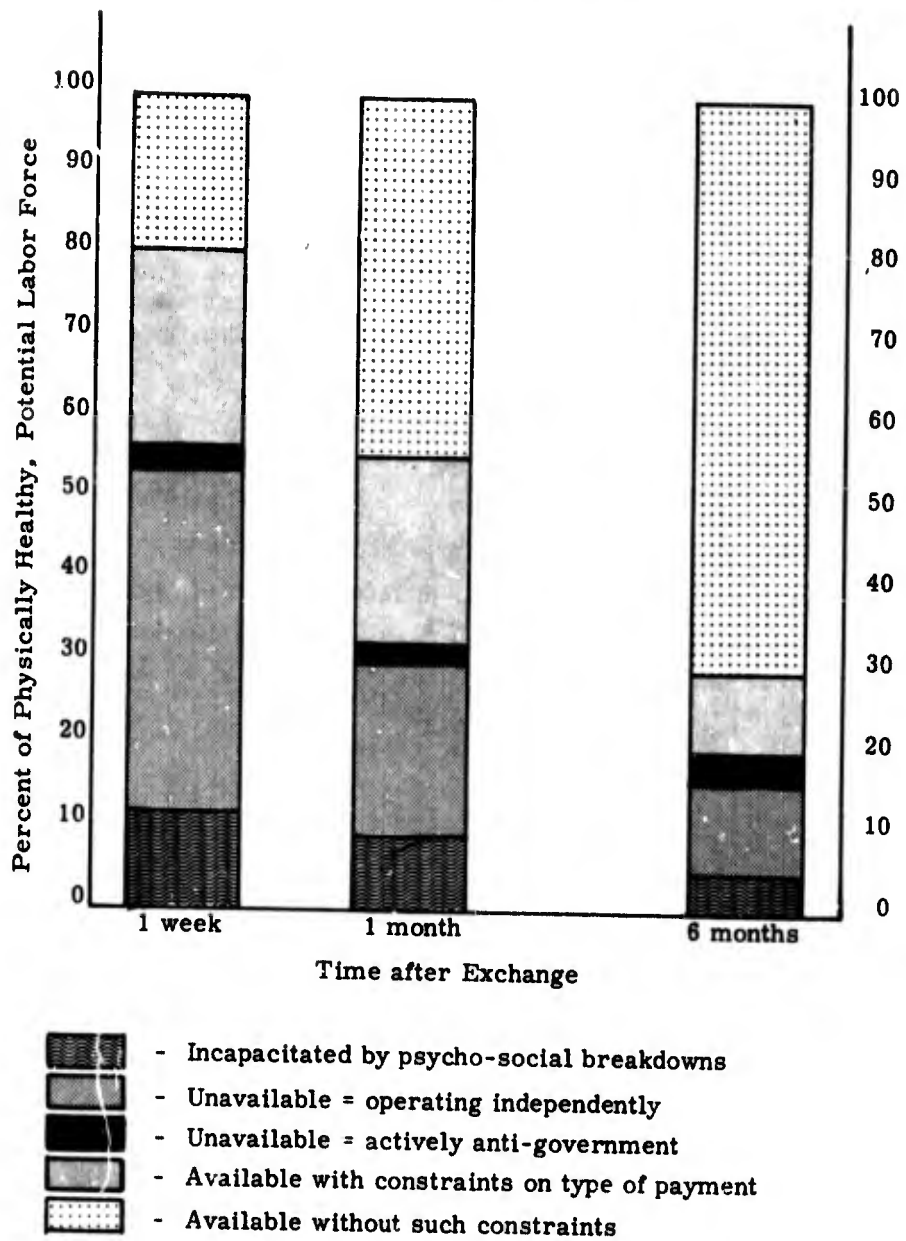
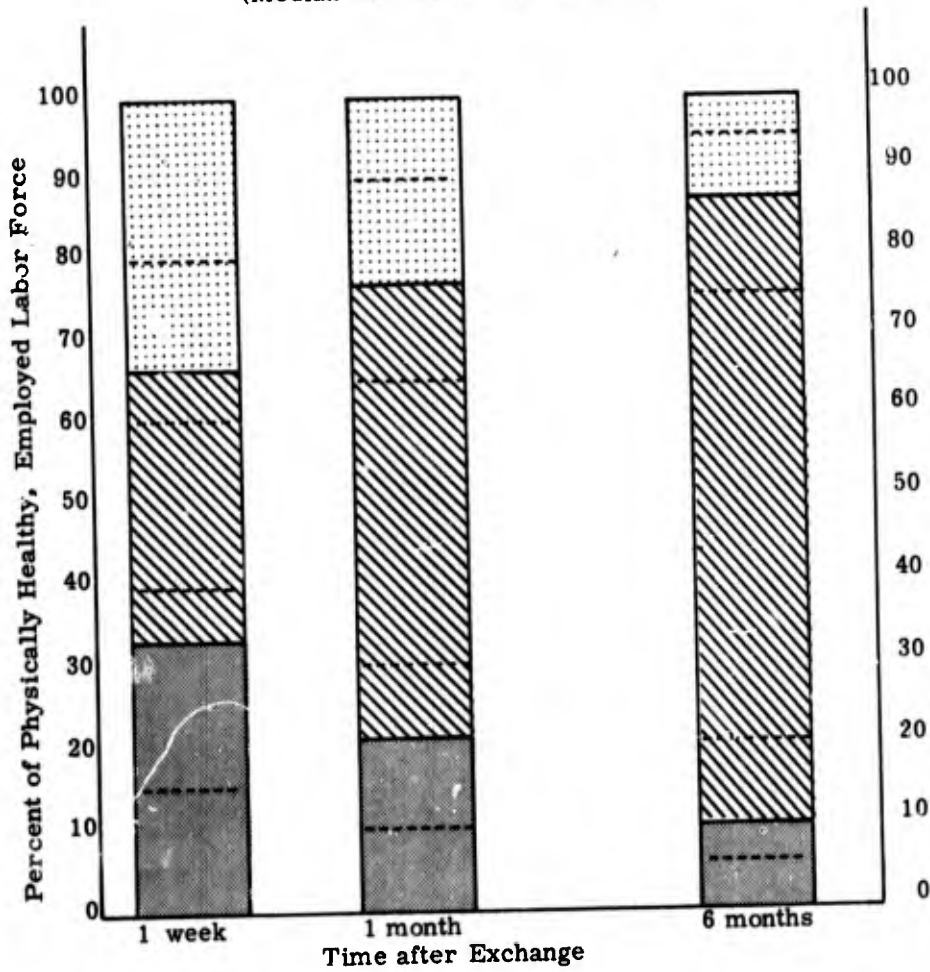






Figure 3  
 CHANGES IN EFFICIENCY OF EMPLOYED LABOR FORCE  
 (Median Estimates - Question D2)



-  - Increased efficiency
-  - Normal efficiency
-  - Degraded efficiency
-  - Limits of Inner Quartile Range about medians

1. In late 1971, there has been a period of rapidly rising tensions, primarily in the NATO theater of operations, consisting of an increasingly belligerent attitude of Soviet countries toward the Western allies. More specifically,

- the Soviet Union has applied pressure on Western Europe, making demands unacceptable to several European nations.
- Soviet naval forces have been deployed in a threatening or suspicious manner around the world, and mobilization activities are reported within the Soviet Union.
- harrassment and covert attacks on allied shipping have occurred in a number of widely-spread incidents.

In response, NATO countries have adopted increasing states of alert readiness, and some reserves in the U. S. have been mobilized by October of 1971.

2. On January 1, 1972, Warsaw Pact nations mount land, air, and sea attacks in Europe. Allied shipping in both Atlantic and Pacific is attacked with increasing frequency. Various conditions of emergency are declared in some states, as civil defense activities reach a high level. All battle staffs are fully activated, and the mass media are utilized to disseminate public information about the crisis and how to react in case of emergency.

3. On January 5th, at 0 hours EST, the Soviet Union launches a barrage believed to be between 3,000 and 4,000 megatons against North America, consisting of an estimated 700-800 weapons aimed primarily at military and urban/industrial targets. A concurrent attack is launched against the NATO nations of Europe.

4. In retaliation, the U. S. mounts a roughly equivalent attack on the Soviet Union. The entire exchange lasts approximately 24 hours.

5. As a result of the attack, surviving authorities have estimated that between 60 and 65 million Americans were killed outright, and that about 40 million are so ill or injured that either they are expected to die or they are permanently disabled. It is also estimated that up to 20 million are ill or injured but are likely to recover.

6. It is also estimated that about 40 percent of heavy industry has been destroyed, while another 40 percent will require repairs or decontamination delays. Over half of the American mainland was subjected, for some period of time, to fallout radiation dosages which were fatal for those without any protection.

In general, the Federal Government and the Military are the institutions most intact, while the local governments have tended either to survive or be destroyed depending

on location. Broadcasting facilities remain adequate to cover most areas, but receivers dependent on external power sources are, of course, inoperative over much of the country. Rail and highways are severely damaged at their urban nodes. The amount of food stockpiled in urban areas is highly varied although in most areas adequate food supplies exist if they can be located and distributed.

It may be assumed that the amount and quality of preattack preparation and training, would be about the same as they are currently, except for three or four days of public announcements which, while giving instructions for nuclear emergency, would go to some lengths to prevent panic or other hysterical reactions. No preattack urban evacuation was ordered, and only negligible evacuation occurred spontaneously.

Similarly, the emotional and political climate, domestic and foreign, may be assumed to have been roughly what it is now, save for what emotional buildup might be expected to occur during the rapidly expanding preattack crisis--both in terms of dissent and assent.

Finally, the patterns of attrition may be assumed to have been occupationally unselective; i. e., the surviving population, though much smaller, may be considered to be statistically indistinguishable from the preattack population in terms of professions, skills, etc.

**APPENDIX B**

**RESULTS**

## APPENDIX B

### RESULTS

In this appendix, we present simple tabulations of the way panelists responded (finally) to each item on the Second- and Third-Round Questionnaires. Results presented are for the total sample of thirty respondents, which means that, on the Round Three tabulations, twenty-nine are actual responses to Round Three, and one is simply carried over from Round Two (since one panelist failed to respond to Round Three).

#### Section 1: The Hundred Statements

Here we present once again the hundred statements, listed in the order in which they were presented in the two questionnaires, with frequency counts of how many panelists responded in each of the possible ways. The columns at the right give the various possibilities: the first three columns (HI, SO, LO) are the three possible evaluations of importance (High, Some, Low); the middle column gives the number of panelists who disagreed with the statement (NO), and the last three columns (MI, MO, LA) give frequencies for the three evaluations of extent (Minor, Moderate, Large). The difference between the total number of responses (the sum of entries in the first four columns) and thirty, will give the number of panelists who failed to respond or who marked the "?," indicating that he didn't understand, couldn't decide, had no opinion, etc.

The top row of numbers beside each statement gives the tally for Round Two, while the bottom row of numbers gives the tally for Round Three; so the reader may compare the extent to which changes were made between the two rounds.

<u>STATEMENT</u>	<u>Importance</u>			<u>NO</u>	<u>Extent</u>		
	<u>HI</u>	<u>SO</u>	<u>LO</u>		<u>MI</u>	<u>MO</u>	<u>LA</u>
1. There would be an increase in competitive anti-social behavior, such as looting, hoarding, profiteering, robbery, fights over resources, etc.	4 4	14 15	8 8	4 3	6 7	10 10	10 10
2. There would be an increase in adaptive social behavior, such as organizing, learning, innovating, gathering, building, assisting, sharing, etc.	21 22	4 5	0 0	2 2	0 0	13 14	13 13
3. People would lose faith in preattack leaders and institutions.	3 1	6 7	6 7	13 13	8 8	5 5	2 2
4. People would become apathetic, listless, dependent.	2 2	8 8	10 10	9 9	13 14	6 5	1 1
5. People would panic and act irrationally.	0 0	9 9	13 13	7 8	16 17	6 4	1 1
6. People would withdraw, isolating themselves from exposure to perceived danger.	1 0	9 9	15 19	2 1	14 16	11 12	0 0
7. People would work only if paid in food, clothing, etc.	2 1	4 4	5 5	14 15	6 6	2 2	3 2
8. Martial law would be enforced in many areas.	10 10	9 10	5 4	5 4	5 4	9 10	10 10
9. Martial law would be enforced nationwide.	5 5	4 5	1 0	18 18	1 0	2 3	7 7
10. People would be preoccupied with themselves and their immediate family or group.	10 9	12 15	7 5	1 1	2 2	12 12	15 15
11. People would be less interested in or concerned about the larger society; e. g., the nation as a whole.	6 6	6 6	7 8	11 10	4 4	10 11	5 5
12. New cults, superstitions, and taboos would arise.	0 0	3 2	12 14	8 8	10 12	4 3	1 1

STATEMENT	Importance			NO	Extent		
	HI	SO	LO		MI	MO	LA
13. People would turn to religion for understanding and solace.	3	7	15	1	9	11	4
	2	9	14	1	9	12	4
14. People would spend much time trying to comprehend what had happened and looking for danger cues.	2	4	11	9	8	6	3
	0	4	13	10	9	7	1
15. People would be more submissive, and ready to follow any kind of leader who arose.	5	9	0	12	1	9	4
	4	10	0	13	1	9	4
16. People would become fatalistic.	0	5	12	10	9	5	3
	0	5	12	10	9	5	3
17. People would be self-centered, with an "every man for himself" philosophy.	1	8	13	7	15	5	2
	1	7	14	7	14	6	2
18. People would be family- (or primary-group) centered, willing to sacrifice others to the benefit of their families (or groups).	6	10	12	2	11	7	10
	6	10	12	2	11	7	10
19. People would act in ways that would be locally useful but dysfunctional nationally.	7	12	3	3	6	11	5
	7	14	3	2	5	14	5
20. Time would be lost grieving for dead or lost loved ones.	1	8	11	10	11	7	2
	1	7	12	10	12	6	2
21. Time would be lost searching for and asking about lost loved ones.	3	9	17	1	13	10	6
	2	10	17	1	13	10	6
22. Groups would be struggling against one another, with fights between families, gangs, localities.	0	10	8	9	10	8	0
	0	11	8	8	10	9	0
23. There would be an increase in willingness to cooperate between individuals and between groups.	14	9	2	3	1	15	9
	15	9	2	2	1	15	10
24. There would be resistance to federal programs.	2	4	8	14	10	2	2
	2	4	8	14	10	2	2
25. There would be scattered, local revots.	1	7	13	6	18	3	0
	1	6	15	5	20	2	0

STATEMENT	Importance			NO	Extent		
	HI	SO	LO		MI	MO	LA
26. There would be a nationwide revolution.	1	0	0	29	0	0	1
	1	0	0	29	0	0	1
27. There would be attempts to secede from the nation.	0	2	3	23	4	1	0
	0	3	3	23	5	1	0
28. Individuals would subordinate themselves to groups.	6	7	7	3	6	9	5
	6	8	9	2	6	12	5
29. Conversation would be eased between strangers.	0	7	14	4	6	7	8
	0	5	16	4	6	7	8
30. There would be a trend toward communal living.	5	11	8	2	8	12	4
	5	11	8	2	7	13	4
31. People would be paralyzed by role conflict--when acting for one group would jeopardize another.	0	4	4	20	7	0	1
	0	3	4	21	5	0	2
32. Rumors would flourish.	9	11	8	1	3	8	18
	9	11	8	1	1	10	17
33. People would desire more communication than would be available.	9	14	4	2	4	4	19
	9	15	3	2	2	5	20
34. Individual and local innovation would be increased, as people are forced to seek solutions on their own.	10	16	2	0	2	10	16
	10	17	1	0	1	11	16
35. People would need information.	23	5	2	0	1	3	26
	26	3	1	0	0	2	28
36. People would need instruction.	18	10	1	0	1	8	20
	21	8	0	0	0	6	23
37. People would need to have events interpreted to them.	8	10	7	1	4	9	12
	8	11	6	1	4	9	12
38. People would need reassurance.	18	9	3	0	1	8	21
	20	9	1	0	0	8	22
39. People would need leadership.	24	6	0	0	0	4	26
	27	3	0	0	0	1	29

STATEMENT	Importance			NO	Extent		
	HI	SO	LO		MI	MO	LA
	40. New leaders would emerge.	17 18	7 8		1 0	2 2	1 0
41. The existing federal government would make serious mistakes.	10 10	9 10	6 6	2 2	6 6	11 12	8 8
42. People would lose faith in the government.	4 4	5 5	6 7	11 11	8 9	4 4	3 3
43. Communications from the federal government would be ignored.	2 2	3 3	3 3	20 20	4 4	4 4	0 0
44. Attempts would be made to evacuate danger areas.	12 13	7 8	10 9	0 0	5 4	12 13	12 13
45. Attempts would be made to evacuate the country.	0 0	0 0	3 4	25 24	3 4	0 0	0 0
46. People would fall into despair, and lose all motivation.	0 0	3 2	7 8	18 18	8 9	2 1	0 0
47. People would be filled with renewed energy and motivation.	9 9	8 8	3 3	8 8	6 6	10 10	4 4
48. Complex organizations and institutions would break down or fragment.	11 11	10 9	6 6	1 2	4 2	16 17	7 7
49. There would be a return to more primitive forms of social organization, such as gangs, tribes, etc.	2 2	4 4	6 6	16 16	6 6	5 5	1 1
50. Rational economic planning would be impossible.	5 5	2 1	0 0	19 20	0 0	2 1	5 5
51. Money would cease to have value and a barter system would develop.	5 5	8 7	5 5	7 9	8 7	5 6	5 4
52. The influence and power of the federal government would be reduced.	6 6	8 11	4 3	8 8	5 4	8 11	5 5
53. Medical resources would be hoarded.	6 5	14 16	7 6	2 2	4 4	11 11	13 13
54. Law enforcement systems would be overwhelmed.	4 3	11 13	4 3	11 11	6 6	8 8	5 5

STATEMENT	Importance			NO	Extent		
	HI	SO	LO		MI	MO	LA
55. Anarchy would prevail.	3	1	1	23	3	1	1
	2	1	0	25	2	0	1
56. The legal/judicial system would collapse.	0	6	3	18	2	3	5
	0	6	3	18	2	3	5
57. The schools would close.	1	10	13	4	4	9	11
	0	10	16	2	5	10	11
58. Troops would be used to maintain order.	6	16	6	2	9	13	6
	6	17	6	1	9	14	6
59. There would be rebellions within the armed services.	0	2	5	20	4	3	0
	0	2	5	20	4	3	0
60. There would be massive, psychotic group behavior which is unprecedented and therefore unpredictable.	1	2	1	21	2	1	1
	1	2	1	22	2	1	1
61. People would wander around in something like a state of shock.	1	5	16	7	18	2	2
	1	4	17	7	18	2	2
62. People would abandon their old religions.	0	0	5	21	4	1	0
	0	0	5	21	4	1	0
63. People would be open to changes in organized religion.	0	3	16	6	11	7	1
	0	2	17	7	11	7	1
64. Religious people would be more responsive to the needs of others than would non-religious.	1	5	5	15	2	7	2
	0	6	4	16	2	8	0
65. People would be more interested in personal, inner-directed religion than with formal, public religion.	1	1	4	12	2	3	1
	1	1	3	12	1	3	1
66. Corporations and industries would continue to pursue selfish interests.	2	6	4	12	1	7	4
	2	7	4	12	1	8	4
67. Local authoritarian organizations would develop.	4	14	11	0	12	12	5
	4	15	10	0	12	12	5
68. There would be a struggle between those calling for strong enforcement of law and order and those who fear the loss of civil liberties.	0	5	4	17	4	4	1
	0	5	6	17	6	4	1

<u>STATEMENT</u>	<u>Importance</u>			<u>NO</u>	<u>Extent</u>		
	<u>HI</u>	<u>SO</u>	<u>LO</u>		<u>MI</u>	<u>MO</u>	<u>LA</u>
69. People would be forced to work on certain projects, whether they liked it or not.	7	11	6	3	7	13	4
	6	13	5	3	6	14	4
70. The Bill of Rights would be temporarily suspended.	2	4	6	13	7	1	4
	1	5	7	13	7	2	4
71. People would become more "moral."	2	3	4	17	3	4	2
	3	3	3	18	3	4	2
72. People would be more concerned with the present than with the future.	9	10	5	5	3	10	11
	9	11	5	4	3	10	12
73. People would be more concerned with their immediate locality than with larger areas as a whole (e. g., state, region, nation).	11	14	3	1	3	10	15
	11	15	3	1	2	11	16
74. People would be more concerned with the fate of the nation than with that of their state or region.	6	2	1	19	1	4	4
	7	1	1	19	1	3	5
75. There would be a strong drive to return to preattack values and social norms as much as possible, rather than to move in new directions.	11	12	2	2	0	15	10
	11	13	2	1	0	16	10
76. People would be anxious to try out new systems, values, and life-styles in order to avoid the mistakes of the past.	3	2	8	13	9	2	2
	3	2	9	13	10	2	2
77. People would blame their troubles on the federal government.	2	7	13	8	9	5	8
	2	7	13	8	9	5	8
78. People would blame their troubles on a few national leaders.	2	6	11	9	10	3	6
	2	6	11	9	10	3	6
79. People would blame their troubles on the Soviet Union.	5	6	13	3	2	4	18
	5	5	14	3	2	3	19
80. People would blame their troubles on themselves.	0	1	6	22	6	1	0
	0	0	7	22	7	0	0
81. People would blame their troubles on some minority group.	0	1	7	19	6	2	0
	0	1	7	20	6	2	0

STATEMENT	Importance			NO	Extent		
	HI	SO	LO		MI	MO	LA
82. There would be a strong desire for revenge against the Soviet Union.	4 4	7 7	8 8	6 6	4 4	7 7	8 8
83. There would be a strong desire for peace.	14 15	8 7	8 8	0 0	2 1	3 2	25 27
84. There would be conflict between races.	2 2	12 12	5 5	9 10	9 9	8 8	2 2
85. There would be conflict between religions.	0 0	0 0	6 5	20 21	5 4	1 1	0 0
86. There would be conflict between socio-economic classes.	3 3	8 9	8 8	8 8	10 10	7 8	2 2
87. There would be conflict between hawks and doves.	4 3	5 6	6 5	13 14	3 2	8 8	4 4
88. There would be conflict between conservatives and liberals.	0 0	6 6	7 8	14 14	4 4	7 8	2 2
89. There would be conflict between sections of the country.	5 5	7 6	3 3	13 13	4 4	9 8	2 2
90. There would be conflict between urban and rural populations.	8 8	7 8	5 5	9 9	6 6	10 11	4 4
91. There would be conflict between Americans and Canadians and/or Mexicans.	0 0	4 3	4 4	18 18	6 5	2 2	0 0
92. Groups would form with the aim of continuing the disorder and confusion.	1 1	3 3	8 11	11 9	12 15	0 0	0 0
93. There would be a return to rugged individualism.	3 2	9 10	7 8	9 8	8 8	10 11	1 1
94. There would be a return to reliance on and trust of one's neighbors.	5 6	12 12	4 4	4 3	5 5	10 11	6 6
95. People would concentrate on the past instead of on the present and future.	0 0	2 1	3 3	24 25	3 3	2 1	0 0
96. Social attitudes would become more conservative.	3 1	3 4	7 9	9 8	6 8	3 4	4 2

<u>STATEMENT</u>	<u>Importance</u>			<u>NO</u>	<u>Extent</u>		
	<u>HI</u>	<u>SO</u>	<u>LO</u>		<u>MI</u>	<u>MO</u>	<u>LA</u>
97. Survivors would feel great relief over having been spared.	1	7	13	8	6	7	8
	1	8	12	8	6	7	8
98. Survivors would feel great guilt over having been spared.	1	1	12	14	9	4	1
	1	1	12	14	9	4	1
99. After the initial shock and inactivity would come a hyperactive rebound of energy and activity.	10	9	1	7	3	10	7
	10	10	1	6	3	11	7
100. People would be afraid of being alone.	0	2	10	12	8	2	2
	0	2	12	11	9	2	3

Section 2: Quantitative Estimates

Tabulated below are the responses to questions calling for numerical estimations on the two questionnaires. The first two columns give the medians and IQRs for Round Two (based on n = 27, since the Round Two analysis was performed before all thirty questionnaires had been returned), and the second two columns give the same statistics for Round Three (using the total n = 30).<sup>1</sup>

<u>QUESTION</u>	<u>ROUND II</u>		<u>ROUND III</u>	
	<u>MEDIAN</u>	<u>IQR</u>	<u>MEDIAN</u>	<u>IQR</u>
		(In %)		(In %)
B2. It might be expected that under such circumstances, some survivors would react destructively against others. What percent of survivors do you think would act on the basis of the following attitudes:				
a. Every man for himself.	10%	( 5-15)	10%	( 5-15)
b. My family against all others.	30%	(20-75)	40%	(20-65)
c. My race against other races.	10%	( 5-20)	10%	( 5-15)
d. My religion against all others.	1%	( 0-5 )	2%	( 0-5 )
B3. Other survivors might be expected to react with increased social constructiveness. What percent of survivors do you think would cooperate <u>more willingly</u> than normally with:				
a. His own family	80%	(50-97)	80%	(60-90)
b. Other families, neighbors, etc.	70%	(40-85)	70%	(50-85)
c. Members of other races.	50%	(20-75)	50%	(30-75)
d. Adherents to other religions.	70%	(20-90)	70%	(40-85)

<sup>1</sup> Twenty-nine panelists responded to Round Three; for the one Round Two respondent who was unable to complete Round Three, we have used his earlier estimates.

<u>QUESTION</u>	<u>ROUND II</u>		<u>ROUND III</u>	
	<u>MEDIAN</u>	<u>IQR</u> (In %)	<u>MEDIAN</u>	<u>IQR</u> (In %)
<b>B4. What percent of survivors would be:</b>				
<b>a. Completely cut-off from communication with the federal government?</b>				
(1) after one week	25%	(20-50)	25%	(25-40)
(2) after one month	10%	( 5-25)	10%	( 5-20)
(3) after six months	0%	( 0-5)	1%	( 0-5 )
<b>b. In sporadic and unreliable communication with the federal government?</b>				
(1) after one week	23%	(15-40)	25%	(20-40)
(2) after one month	15%	( 5-25)	15%	(10-25)
(3) after six months	7%	( 1-10)	5%	( 1-10)
<b>c. Able to receive communications from the federal government with some effort?</b>				
(1) after one week	18%	(10-45)	20%	(15-35)
(2) after one month	25%	(10-40)	30%	(10-40)
(3) after six months	20%	( 5-50)	25%	( 5-50)
<b>d. In free and relatively easy communication with the federal government?</b>				
(1) after one week	10%	( 3-50)	15%	( 5-35)
(2) after one month	40%	(10-75)	50%	(22-75)
(3) after six months	70%	(30-90)	80%	(50-90)
<b>B9. Estimate the probability of a major, widespread revolt against the federal government.</b>	4%	( 1-10)	2%	( 1-5 )
<b>B10. If such a revolt occurred, what do you think is the probability that the government would fall?</b>	10%	( 1-20)	5%	( 1-12)
<b>B11. Estimate the probability that sections of the country would successfully secede.</b>	2%	( 1-5 )	1%	0-5 )
<b>B12. Estimate the probability of TOTAL social collapse into complete anarchy.</b>	1%	( 0-5 )	1%	( 0-5 )

We ask you now to make some estimates about the postattack labor force. Let us consider here the surviving, physically healthy and uninjured members of the labor force, which under normal psycho-social conditions would be available for work.

QUESTION	ROUND II		ROUND III	
	MEDIAN	IQR (In %)	MEDIAN	IQR (In %)
B13.* Of these otherwise available workers,				
a. What percent would be incapacitated by psycho-social <u>breakdowns</u> of one kind or another, or just complete withdrawal from organized society?				
(1) after one week	10%	(10-20)	10%	(10-20)
(2) after one month	8%	( 5-10)	10%	( 5-10)
(3) after six months	5%	( 2-5 )	5%	( 2-5 )
b. What percent would be unavailable because of the felt need to <u>independently</u> protect/sustain himself, his family, and/or his close associates?				
(1) after one week	35%	(20-50)	38%	(30-50)
(2) after one month	20%	(15-30)	20%	(19-30)
(3) after six months	10%	( 5-20)	10%	( 5-15)
c. What percent would be unavailable because of active participation in <u>anti-government</u> efforts?				
(1) after one week	2%	( 1-5 )	3%	( 1-5 )
(2) after one month	2%	( 1-5 )	2%	( 1-5 )
(3) after six months	4%	( 1-5 )	3%	( 1-5 )
d. What percent would be available <u>only</u> on jobs for which the pay was in immediately beneficial goods and services (e.g., food, shelter)?				
(1) after one week	20%	(10-25)	20%	(10-25)
(2) after one month	20%	(10-30)	20%	(10-25)
(3) after six months	10%	( 5-25)	6%	( 5-20)
e. What percent would be available without any such constraints?				
(1) after one week	16%	(10-45)	20%	(10-36)
(2) after one month	40%	(20-64)	40%	(25-60)
(3) after six months	67%	(30-80)	75%	(50-80)

<u>QUESTION</u>	<u>ROUND II</u>		<u>ROUND III</u>	
	<u>MEDIAN</u>	<u>IQR</u>	<u>MEDIAN</u>	<u>IQR</u>
<b>B14.*</b> Of those physically health survivors actually working on recovery projects, what percent would function:				
<b>a.</b> With greatly degraded efficiency, because of various psycho-social burdens?				
(1) after one week	30%	(15-60)	30%	(20-70)
(2) after one month	20%	(10-30)	20%	(15-30)
(3) after six months	10%	( 5-20)	10%	( 5-20)
<b>b.</b> More or less normally?				
(1) after one week	30%	(20-60)	40%	(20-50)
(2) after one month	50%	(35-70)	50%	(40-65)
(3) after six months	73%	(55-80)	75%	(70-80)
<b>c.</b> With greatly increased efficiency, because of the stimulus of challenge or other positive psycho-social factors?				
(1) after one week	30%	(20-60)	20%	(10-30)
(2) after one month	20%	(10-35)	20%	(10-30)
(3) after six months	13%	( 5-25)	15%	(10-20)

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\*NOTE: Questions B13 and B14, above, were numbered D1 and D2 in the Round-Two Questionnaire.

### Section 3: Independent Variables

On Round Two, the panelists were asked to evaluate the importance to national recovery of the following independent variables (not covered in our original scenario). The results of that evaluation are presented in the columns to the right of each variable.

	Irrelevant	Some Effect	Important	Crucial
1. The state of other nations and our (preattack) relations with them.	1	7	15	4
2. Demography of attrition--which survival rates obtain for various professions, skills, etc., that will be crucial.	0	6	14	7
3. War policy--whether there ensues peace, a truce, surrender, more war, etc.	0	1	8	18
4. Preattack political/emotional state of the nation (amount of dissention, national will, image of the President, etc.).	2	5	15	5
5. Availability of individual weapons.	3	18	3	1
6. Amount of preattack preparation and training.	0	4	16	7
7. Quality of preattack preparation and training.	0	4	17	6
8. Reationality of the government response--is it wise, politic, acceptable, clear, positive, firm, equable?	0	5	8	14

NOTE: The two variables ranked most important, numbers three and eight, were considered further in Round Three (see the next section of this appendix); and the others were handled by the addition of three paragraphs to the scenario appended to Round Three.

Section 4: Other Questions

A number of other questions, raised by respondents to one or another round, were asked of all panelists on Rounds Two or Three (but not both). The tally of responses to these are printed in this section without comment.

Round Two Questions

1. Fear of one kind or another was by far the most frequently cited factor in the responses to round one. Many kinds and levels of fear were listed: fear of death; injury; illness; radiation; starvation; mutation; renewed attack; invasion; thieves; disorder; personal violence; the unknown. The topic was also described by such phrases as insecurity about personal survival prospects, panic, hysteria, self-preservation, shift to more primitive needs, preoccupation with survival, and so on.
  - a. Do you agree with what seems to be a majority of respondents, that "fear" would be the most significant psychological barrier to national recovery?  
Agree 20                      Disagree 7
  - b. As a nationwide factor, how long would it take for all this fear to subside to one-half its maximum severity?  
3 (days, weeks, months, years.)
  - c. Would fear and its effects be more profound in areas suffering "near misses" than in those areas further away from the devastation?  
Yes 20                      No 6
  - d. What would you give as guidelines for the government policies most likely to effectively counter fear? (Check the one of each of the following pairs of recommendations that you think would be wisest, generally speaking, for the federal government to follow.):
    - (1a) 1 Give strong reassurances, positive assessments, and optimistic projections, whether true or not;
    - (1b) 25 Tell the truth, whether it is reassuring or not.
    - (2a) 20 Provide strong, direct, authoritarian leadership; or
    - (2b) 5 Throw all decisions before the people, via town meetings, etc., whenever possible.

- (3a) 10 Give detailed instructions of all kinds; or  
 (3b) 17 Give only general suggestions, encouraging innovations.
- (4a) 4 Channel fear into anger against an internal or external threat to the nation; or  
 (4b) 21 Use fear to encourage binding us all together on a humanitarian, rather than a national level.

5.<sup>2</sup> Most policy suggestions on the whole communications issue had to do with how well-prepared the society was before the nuclear exchange, rather than with what society might do afterwards to improve communications. Do you think the government should place a higher priority currently on the establishment of a nationwide communication net which could withstand such an attack?

Yes 19 No 8

7. On the whole, would the new leaders tend to be: (Check one of each pair.)

	<u>After one month</u>	<u>After six months</u>	
(1a)	<u>24</u>	<u>17</u>	Nationalist; or
(1b)	<u>1</u>	<u>6</u>	Internationalist.
(2a)	<u>18</u>	<u>14</u>	Conservative to reactionary; or
(2b)	<u>5</u>	<u>7</u>	Liberal to racial.
(3a)	<u>15</u>	<u>12</u>	Hawk; or
(3b)	<u>9</u>	<u>10</u>	Dove.
(4a)	<u>26</u>	<u>23</u>	Action-oriented; or
(4b)	<u>0</u>	<u>0</u>	Intellectual-oriented.
(5a)	<u>19</u>	<u>22</u>	Materialistically-oriented; or
(5b)	<u>6</u>	<u>2</u>	Spiritually-oriented.

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<sup>2</sup> Responses to questions 2, 3, 4, 9, 10, 11, and 12 are given in Section 2, above; and questions 6 and 13, as well as Round Three question 1, being narrative in nature, are discussed in the body of the report.

8. Which government policy do you think most desirable:

- 0 Maintain traditional leaders by discouraging emergence of new leaders.
- 11 Attempt to bring new leaders into the government's unified command.
- 12 Evaluate new leaders carefully, encourage cooperative ones and discourage others.
- 3 Encourage any emergence of leadership indiscriminantly, since it is so badly needed.

Round Three Questions

	<u>Yes</u>	<u>No</u>
2. Do you believe that the military should take over governmental functions for the period immediately following a nuclear exchange?	<u>8</u>	<u>19</u>
3. Would a major, well-organized preattack public education program on all conceivable aspects of postattack society, presented to the public via classrooms, television, etc., help to prepare the public and offset the fear which would otherwise result from such an attack?	<u>18</u>	<u>7</u>
4. Do you think the attack under consideration would turn America into a predominantly rural/agrarian society?	<u>6</u>	<u>20</u>
5. Is the present spectrum, or distribution of various behavioral characteristics across the population about the same as it would be after the attack? That is, would such an attack remove a behaviorally representative sample of the population?	<u>12</u>	<u>12</u>
6. Do you think the public should be better informed currently about the Department of Defense budget?	<u>17</u>	<u>4</u>
7. Do you think the current Civil Defense program should be expanded?	<u>19</u>	<u>4</u>

	<u>Median</u>	<u>IQR</u> (In %)
8. If after such an attack, the <u>inactive</u> and <u>retired</u> reservists were called into active duty, what percentage do you think would report voluntarily?	60%	(20-75)
9. In your opinion, what is the probability (expressed in percent) that the United States will be involved in a major nuclear exchange in the next twenty years?	10%	( 5-25)
10. Assuming that all banks and other financial institutions closed immediately following the attack, how long do you think it would be before the following activities began again with significant frequency?		
a. Banks begin to reopen?	1 mo.	(2 wks-4 wks)
b. People begin depositing funds?	2 mos.	(1 mo.-6 mos.)
c. Banks begin making loans to large businesses?	3 mos.	(1 mo.-6 mos.)
d. Banks begin making loans to individuals?	4 mos.	(1 mo.-9 mos.)

11. In the scenario used in this study, it was stated that slightly over 100 million Americans were killed or permanently disabled by the attack postulated--that is, about 50% of the population.

Would your responses to this questionnaire have differed significantly if, with an otherwise identical scenario, the portion of the population killed or disabled (instead of 50%) had been:

	<u>Yes, my responses would be very different</u>	<u>No, my responses would be about the same</u>
30%	<u>4</u>	<u>24</u>
40%	<u>0</u>	<u>28</u>
60%	<u>0</u>	<u>28</u>
70%	<u>9</u>	<u>19</u>

C3a. After an attack such as described in the scenario, what in your opinion would be the war policy (before knowing what the enemy response was going to be) of the United States Government:

- 0 to surrender.
- 10 to offer a truce or cease-fire.
- 2 to pursue the war by conventional means.
- 13 to pursue the war by nuclear means.
- 4 to wait and see what happens.
- 1 other: \_\_\_\_\_
- 0 I disagree that this is of crucial importance.

C3b. What do you think would happen:

- 12 there would be a second (and perhaps third) nuclear strike.
- 6 the war would continue conventionally at as high a level as the opponents could maintain.
- 5 the war would continue at a subdued level.
- 3 there would be a cease-fire immediately.
- 0 there would be an immediate surrender.
- 4 there would be a cease-fire or surrender after \_\_\_\_\_ months.
- 1 other: \_\_\_\_\_
- 0 I disagree that this is of crucial importance.

C8. In your opinion, would the overall response of the federal government to such an attack be:

- 0 foolish and disastrous.
- 4 less rational than usual.
- 16 mixed.
- 5 more rational than usual.
- 1 unusually wise and productive.
- 1 I disagree that this is of crucial importance.