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PSYCHOLOGICAL EFFECT OF THERMONUCLEAR ATTACK ON THE U. S.

23 March 1956

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PSYCHOLOGICAL EFFECT OF THERMONUCLEAR ATTACK ON THE U. S.

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COLONEL BAIRD: General Hollis, Honorable Mr. Villard, distinguished guests, and associates: General Douglas MacArthur, when he was Superintendent of the United States Military Academy, originated the following lines and had them inscribed on a bronze plaque for all to read for generations to come: "Upon the fields of friendly strife are sown the seeds that upon other fields and on other days will bear the fruits of victory."

These lines are quite appropriate today, for two reasons: They are closely related to the principle that the ultimate objective in war is the destruction of the enemy's will to resist. Secondly, they relate to psychological effects upon individuals. If we as a nation should ever become engaged in another war employing nuclear weapons, a major factor which may decide the final outcome will undoubtedly be the will of the people to continue the war in the face of the physical damage, the mental frustrations, and the destruction that they may undergo.

Now, we all know that the right kind of human behavior under strain and frustration calls for a balanced mind and sensible decisions, probably the kind of decision which Admiral Beatty had to make at the Battle of Jutland in World War I, when the British Fleet was taking a terrific pounding. The famous Indefatigable had disappeared beneath the waves, the Queen Mary had blown up, and the Lion was in flames. Then came word that the Prince Royal had disintegrated. Admiral Beatty turned to his Flag Captain Chatfield and said: "There must be something wrong with our bloody ships today. Chatfield, turn two points nearer the enemy."

I believe that human behavior under stress and strain is a very important thing in linking our studies with our final problem. If we are to plan effectively for our national defense in the future, we must know something about the effect of massive nuclear attacks upon the minds and morale of our people.

To discuss this important subject of the psychological effect of a thermonuclear attack upon the United States, we have with us this

morning a prominent social psychologist with a background in the field of science. Dr. Donald Michael, of the National Science Foundation, I am sure, does not presume to know all the answers in the field of human behavior, but I do know that he has some sterling ideas which will stimulate our interest in this subject.

Now that we have launched you in between MacArthur and Beatty, the Army and Navy, and to send you off into the blue yonder, Dr. Michael, we welcome you back to the College and look forward to your presentation.

DR. MICHAEL: General Hollis, Honorable Mr. Villard, distinguished guests, and members of the class of 1956: When General Hollis invited me to talk to you I was, of course, very pleased to have the opportunity to address another class of the Industrial College about the vexing problem of the psychological effect of a thermonuclear attack on the United States. At the same time, however, I am disappointed--disappointed that I have little different and little more to say this year about this question than I had to say last year.

There are two reasons for this: One is a reflection of a problem we shall discuss in a different context later; namely, that it is very difficult to get qualified people to devote time and money to work in this area, simply because people don't believe we are going to have an atomic war. The second reason for the paucity of new information is that the laboratory or field conditions necessary for gathering the directly applicable facts are for the most part unobtainable. I will say some things this year which I didn't say or didn't stress last year, but I'm afraid that in much of this talk I shall repeat myself--to my mind a profoundly disturbing commentary on a profoundly important problem.

Let me say first off that I don't propose to tell you what in fact the psychological consequences will be for Americans exposed to thermonuclear attack. Rather, I hope to discuss with you some conjectures on what these consequences may be. I'll also indicate what some of the factors may be which can contribute to the dominance of one psychological state of affairs rather than another.

My source materials will be the various studies of civilian behavior in World War II, particularly the United States Strategic Bombing Survey reports and the investigations and, over the last few years, the investigations of peacetime disasters conducted by the Committee

on Disaster Studies of the National Research Council. Also I shall occasionally draw on those findings about individual psychology which seem to be sufficiently characteristic of people in general to be applicable to our problem.

One final introductory remark: I am speaking to you today as a private citizen who has been involved professionally and privately in the study of this problem for some years. However, as far as I know, I represent no particular school of thought or interested organization. Moreover, I represent no dogma. The fact that each assertion in my forthcoming remarks is not preceded by the words "in my opinion" or "it seems to me" is dictated by the exigencies of time and style--not by any attempt to convince you of the finality of my predictions.

Since the aspects of our problem are so diverse, I will use the next forty minutes to outline what I believe to be the areas important to your mission, and leave it to you during the question period to indicate those aspects of the problem on which you want more information. I'll be glad to elaborate on them, if I can.

We begin with the preattack situation, because there are three factors in the psychology of this period which can have important consequences for our mobilization capacity in terms of both the number of survivors and the postattack psychological state of the survivors. They are:

1. The effects of preexplosion behavior on the total number of casualties;

2. The effects of this behavior on the state of mind of the survivors; and

3. The consequences for city dwellers of the responses of civilian personnel, in the civilian defense structure, to the evidence of impending attack.

The casualty level will depend, of course, to some considerable extent on whether the victims respond to the warning sirens by orderly evacuation, by paralysis, or by panic.

It is worthwhile examining this idea of panic a bit more closely. Panic on a large scale is a very rare form of behavior: there are almost no examples of it. When a mass exodus is examined closely,

it turns out that, while people may go about escaping from a situation in what may appear to be a panicked mob, it may well be disorganized but the actions of the individuals making up the group generally are deliberately intended to get them to safety. They are not the frantic, blind, clawing type of thing we generally associate with panic.

Some indication that people can--not necessarily that they will--move away from a threatening situation in an orderly manner is perhaps provided by the fact that the British moved in three days, at the beginning of World War II about a million and a half women and children out of their cities without a single casualty or accident. However, there are so many differences between the psychological context of World War II and the one we contemplate that I don't think it is wise to assign too much significance to this event.

The fact is that the problem which is beginning to seriously concern those of us who are interested in this question is not, "What do we do to prevent panic?" so much as it is "What do we do to guarantee that people will take advantage of the little warning time they might get?"

Let me suggest the enormity of this problem by familiarizing you with some statistics from a study just completed by the Survey Research Center of the University of Michigan on a representative sample of people in Oakland, California. You may recall that about a year ago some incoming unidentified bombers caused the sirens of Oakland to be sounded, at about 10 a.m., for a yellow alert. A yellow alert, as you probably know, means "Attack imminent."

Of the persons queried, 75 percent heard the sirens; and of these, 19 out of 20 knew it was an air raid siren. We shall confine the remaining statistics to those who heard the siren.

How did the people of Oakland respond to this warning of imminent attack? One-fifth of them believed it, one-eighth of them doubted it, and two-thirds of all those who heard the sirens didn't believe them at all.

And what did they do when they first heard the sirens? Forty-five percent continued with what they were doing before the sirens sounded, 35 percent casually checked their desbelief in the significance of the sirens by doing such things as noting what other people were doing, 5 percent tried to get real information by turning on their radios or calling organizations who they thought would have the information, and 5 percent took some sort of cover or tried to warn others.

And finally, at the time of the interviews what did Oaklanders say they would do if another alert were sounded? Over 75 percent of them gave answers indicating that they would pay no attention to it or would do the wrong thing unless something more than the alert was given as additional information.

Why this lack of response in the face of a signal which people know is supposed to signify danger? The reasons are many, but clearly two stand out. One, people are used to hearing the sirens being tested. And, two, people just don't believe that war is imminent. Less than 25 percent of the Oaklanders questioned believed that.

Presumably, the first factor can be minimized by ceasing to test sirens at audible levels and by various other means. But to get people to take the sirens seriously, given their attitude about war, presents an exceedingly difficult problem, especially in view of the "New Look" in the international situation.

Moreover, civilian disaster studies have clearly indicated the very disturbing fact that people will, by and large, go to considerable lengths to ignore signs of impending threat, or transmute them into circumstances which do not require that they face the intense anxiety of immediate disaster. If you add to these facts the assumption, as you have it in your problem, that the attack will come at night, I think it is reasonable to fear, perhaps more than panic, that many lives will be lost because of the sometimes irresistible compulsion to hide under the blankets--because of the tendency of the only half-wakened mind to stay with the warmth and the primitive security of a bed and figure that everything will come out all right in the morning.

Once, however, those people who are going to get up and move, do get going, will they move smoothly and in an orderly manner, especially since so much time has been lost finding out that this is the "real thing" and since so many were so sure that no atomic attack was forthcoming? At this time I see so way to predict which state of affairs will be dominant. On the face of it, probably paralysis, panic, and orderly evacuation will occur in each city, the dominant mode varying from city to city.

Clearly, one factor which will importantly affect the chances of mass survival is the amount of practice in evacuation and/or taking shelter which civilians get. And to make this practice maximally useful requires that civil defense activities be sufficiently supported both financially and socially to permit realistic or quasi-realistic practice--traffic tieups, night alerts, alerts in winter, and so forth.

Unless these practices are as realistic as we can make them, the shock of the real thing may well prove to be more demoralizing than it would be without practice, simply because the real thing doesn't turn out to be like the practice experience in which people will have come to believe. With enough practice, and with realistic practice, it should be possible to vastly reduce the prevalence of those forms of behavior which will lose lives rather than save them.

The second consequence of preattack behavior--the state of mind of the survivors--is a complex one. All I'll do at this time is suggest typical preattack circumstances which might well affect our postattack mobilization capacity.

One example: All the information we have on people, both from peacetime and wartime disasters, indicates that family "togetherness" is a primary precondition for attaining or maintaining high morale. If evacuation is disorganized, families may be separated, and getting them together again will be slow and difficult and demoralizing. And until families are reunited, you won't get much interest in mobilization. A night attack, despite all the other special complications with which it would confront us, would at least have the exceedingly important compensation that families would evacuate or take shelter as a unit.

Another example: Panic or otherwise inadequate behavior may result in deep guilt over feelings of forsaking others or actually contributing to their death or injury. If played on skillfully, these feelings of guilt could be used to motivate some survivors to participate in hazardous or especially fatiguing activity in the postattack period. However, if bungled, these exhortations to action may backfire by producing hostility toward those who remind the survivors of their moral failings. Moreover, guilt feelings of many survivors may be seriously increased if fallout shelters are so few or so poorly located that men have to fight for a place in them--or for a place for their children or wives. Later when I discuss pseudosickness we will consider one of the many possible consequences of these guilt feelings.

The third preexplosion psychological circumstance which will importantly affect our capacity for postattack mobilization is the conduct of administrative and operational personnel in the warning net and the evacuation and shelter organizations.

The evidence from wartime studies and peacetime disaster research clearly indicates that when confronted by a situation which

demands quick decisions about circumstances outside of their day-to-day experiences, for the most part civilian administrators tend to delay these decisions, pass them on to someone else, request authority from persons higher in the hierarchy, or ignore the situation, presuming that its very unexpectedness and uniqueness mean that it is all a mistake or that somebody else is responsible for action.

I by no means want to give the impression that I believe all civilian administrators and functionaries are inept, but I do think that we need an appreciation of the sociopsychological environment of "normalcy" which is likely to condition the behavior of civilian administrators.

A brief example from the Oakland incident mentioned earlier is to the point. When asked by a neighbor why the siren was blowing, one block warden checked his list of scheduled practice alerts, and, since May 5th, 10:42 a.m., was not on the list, he concluded that it was a false alarm. A policeman also reached this same conclusion.

In other words, these people act pretty much the way most people do who do not generally give or receive commands and who have not spent a lifetime being trained and rewarded for quick, incisive action in ambiguous and threatening circumstances. And because of this fact, there is only a very limited amount that can be done to keep these people trained and primed to react effectively when the possibility of impending attack requires precise behavior from them.

Three consequences for mobilization can be expected from this psychology of normalcy of peacetime civilian administrators: (1) because of delayed decisions, there will be less than maximum time for survival activity and therefore it is likely that there will be less survivors; (2) confusion, indecisiveness, and misdirected activities will be carried over into the mobilization period following the attack, thereby slowing down reorganization; and, (3) the more inadequate in retrospect the preattack warning appears to the survivors, the more angry the survivors will be with the "authorities" and the less they will vent their aggression on the enemy.

I think it is evident, then, that part of the postattack psychological consequences for civilians will be intimately related to the extent to which evacuation or taking shelter is orderly and organized. Practice and planning are necessary for both the population at large and for civil defense personnel--much more so than present finances, or in some cases present motives, permit.

Now, what can we expect of the immediate postexplosion period which is pertinent to your larger problem? Since at this time most, if not all, aid for the wounded will have to be local, it is important for us to consider the psychological factors affecting the quality and quantity of this aid.

Aside from manpower considerations, the more wounded who can be saved, the less will be the demoralizing burden of grief, guilt, and loss for the survivors. Let us divide the survivors into two groups. One group are the "near miss" victims who find themselves still alive in a partially destroyed area. And by "near miss" victims I mean those who have had a narrow escape from death, or have seen others, especially loved ones, die, or who have themselves been wounded. The other group are those persons so far from the center of the explosion that they are uninjured and their environment is whole for all intents and purposes.

Among the near miss group all the evidence from peacetime and wartime disasters indicates that the dominant mode of behavior is at worst a kind of passive disorganization--seldom panic or any kind of frantic behavior. At best, those victims who are able to, try to actively help other fellow victims.

Let me quote to you from an Operations Research Office report on the disaster in which a shipload of nitrate destroyed a large part of Texas City. The quotation goes:

> "The remarkable thing about those survivors who remained conscious is . . . that, with unbelievable calmness and efficiency, so many of them set about the task of extricating not only themselves but others."

As for the passively disorganized victims, they are almost completely docile, and some are devoid of self-direction at this stage. The very best that many of them can do seems to be to try to extricate themselves, if they're pinned down, and to give aid to their immediate family, even though even this behavior may be more of a gesture than a realistic appraisal of the situation. Hence persons from outside moving into this area can do a very great deal to minimize further loss from unattended injury and from behavior which would lead to further injury or loss.

Note that this passively disorganized group is likely to be large, especially under evacuation conditions, since the population density at the periphery of the total destruction zone is likely to be higher than normal, unless, of course, evacuation has been completed or unless ground zero is not near the center of the city. Hence proper attention to this group will permit the recovery of a substantial segment of the surviving population which might well otherwise be lost.

The rate of psychological recovery in this group varies from a few hours to months, during which time there is jitteriness, varying degrees of loss of a sense of reality, anger, etc. The recovery rate clearly depends to some extent on psychological and physical succor from others. Without this, recovery may take a very long time; with it, the time varies but certainly it is shortened. We will come back to this point later.

This near miss group is not the group from which we can expect looting and violent efforts to obtain for themselves or their families food and shelter. Rather, if it occurs anywhere, it is from those out of the near miss shock range that violence may be expected--though not inevitably, of course.

Whether or not violent appropriation of supplies and shelter occurs to any serious extent will certainly depend on two factors, whatever other contingencies arise. These are the extent to which the fleeing population has been prepared to believe that enough supplies and shelter are available for all, and the extent to which undeniable evidences of authority are apparent. I'm afraid that local law-enforcement personnel are not likely to constrain a determined mob unless they are profusely supplied with evidently lethal weapons; and even then their own state of mind may not be firm enough nor their motives sure enough to act with the leadership and firmness required.

However, I do think that people will pay attention to the military when they will pay attention to no one else. Under these circumstances it may well be that the only accepted symbol of a disinterested and trained implementer of order will be the military. Military personnel especially trained for this function might well accomplish much in terms of expediting the mobilization effort. In a long war their temporary withdrawal from strictly military activities might be more than compensated for by the more rapid return to productiveness which their presence among civilians may encourage.

However, I don't want to underestimate for you the humanitarian and altruistic tendencies in people to help their fellow man. We have evidence from the behavior of civilians in Hiroshima and Nagasaki, in Germany and England, and from civilian disasters that there are often many people who at great risk to themselves will aid their fellow men.

Unfortunately, the picture is not clear as to the circumstances under which altruism becomes the dominant mode of behavior. The United States Strategic Bombing Survey in Hiroshima indicates that only around 17 percent of a sample of survivors gave aid to or received aid from strangers. Studies by the Committee on Disaster Studies in two small towns in the United States show a much higher level of aid. However, these towns were so small that practically everybody knew everybody.

It is not clear, therefore, whether demands for succor from anonymous persons from a large American city would be sufficiently compelling to deflect the average man's motivation to provide maximum protection for himself and his immediate family. In the Texas City explosion, for example, many people outside of the zone of primary destruction fled the city, while others, especially those having relatives in the explosion area, moved in to help. Certainly we can expect some of those in the safe zone to return and help those in the blasted and burning area if--and I think these are very big "ifs"--it is clear that their families will be cared for; if it is clear that their families and possibly themselves are not in the path of dangerous fallout; and if they do not believe that returning to the edges of the city means sickness, sterility, and/or death from radiation.

Let's assume for the moment that administrative planning and implementation are adequate and therefore that families will be taken care of, that there is no serious fallout, and that there is no serious residual radiation in the city, how can the would-be helpers be convinced that these are the facts? Well, I think there are some things that can be done now which will help a great deal then.

1. There ought to be considerable publicity given to reports and demonstrations of food and shelter stockpiles surrounding metropolitan areas. Tours of these areas, their use in practice evacuations, their use as camping areas by boy scouts and as picnic grounds and parks--what have you--anything should be done which will give the public a continuing familiar and secure feeling before war that, rough as things may be, still they'll not be totally destitute in the event of attack.

2. There ought to be permanent radiation-detection installations--similar to a fire box, if you will--distributed all over the surrounding countryside in such a way that people could easily find them--perhaps one at the base of every five hundred telephone poles. (Naturally, for visibility we would paint the pole a brilliant fluorescent yellow.) Again, by publicity and demonstrations, people could and would learn to depend on the readings of these instruments to tell them if they were in danger or not. I think the counter-rumor value alone of these detectors would be immense. Such indicators should also be distributed throughout the city as a symbolic and practical safeguard for the rescue squads.

Let's turn now to two other psychological problems which may very well be serious, especially during the first weeks after an atomic attack and sporadically for a long time after. They are (1) demoralizing rumors, and (2) pseudosickness.

Rumors arise whenever individuals are confronted with a situation which is important to them but where the meaning and significance of the situation are unclear. Obviously the postattack period will be a fertile ground for rumors. Now, how do they affect your problem?

Well, an analysis of one thousand rumors prevalent in America in 1942, during our first year of war, indicated that 66 percent of them were hostility rumors, driving wedges between various groups and institutions in the United States. Twenty-five percent of the rumors were fear rumors about the enemy, and only 2 percent were wishful thinking rumors. I don't know whether the proportions would be the same in world war III, but I suspect that in the face of shortages and ambiguity as to the real state of affairs, good morale and organization may be chronically subject to the erosion of rumors arising from bitterness and fear.

This rumor problem may become very complicated. For example, with sanitation facilities vastly overstrained, gastrointestinal sickness may be rife. Now, how will we convince the members of a refugee encampment or the original dwellers in a town which is preparing to accept refugees that the sickness is not the result of enemy biological agents?

The usual answer is to suggest that reassuring broadcasts from those in authority will dispel the rumors. But even if we assume that familiar authority figures will be alive, there is some evidence that they won't be able to destroy the rumors in anywhere nearly all their listeners.

Let me give you an example. In an effort to dispel the very serious rumors about the extent of the damage at Pearl Harbor, President Roosevelt broadcast a speech on 23 February 1942 devoted entirely to denying the rumors and quoting the official facts. It so happened that in a study made on 20 February of 200 college students 68 percent of them chose to believe the rumors that the damage was much worse than the official report indicated. After the speech by the President, 44 percent of the students still believed the rumors. Incidentally, among a sample who had not heard the speech, about two-thirds still believed the rumors. So while authorities can help dispel rumors, I don't think we can count on them to reduce this factor to the vanishing point.

Let me give you a more familiar example. In World War II there was a rumor rampant in the services that the yellow fever shots could kill you or at least leave you sterile. Perhaps some of you were victims of that rumor. At any rate, even with authoritative statements to the contrary, the rumor died hard.

There is another complicating aspect to this rumor problem deserving careful attention. I would conjecture that in an atomic war not much information about the larger local or national situation can be made public without benefitting the enemy. In a nation as used to on-the-spot news coverage as we are, the shock of little or no news may be exceedingly demoralizing.

I think our people need to be prepared to expect few or no figures and facts on the extent of our wounds. Certainly we need to give careful study to what can be safely conveyed to the population, and what can be substituted for news during the very period when the demand for news may be highest and therefore when people are most likely to resort to rumors as a way of meeting that demand.

Let's turn briefly now to the problem of pseudosickness. I believe it is true to say that Americans are especially prone to preoccupation with health and cleanliness. It is also likely that if and until refugees are adequately absorbed into a new environment, the general level of health is likely to decline, due in part to inadequate sanitation facilities; and cleanliness is certainly going to go by the board. This undoubtedly means a good deal of nausea and diarrhea and possibly skin irritations; and also perhaps some fever from low-order infections. It is also true that nausea, diarrhea, and skin irritations are very common symptoms of simple emotional upset. But these are also the

symptoms of radiation sickness, and they could be the symptoms of chemical or biological agents. It will be difficult enough for whatever doctors there are to make snap diagnoses: it may be a lot more difficult to convince your neighbors in an overcrowded barracks, or tent city, or village that you aren't the carrier of an enemy-spawned disease. Moreover, it may be difficult to convince you that you haven't a dose of radiation which requires rest and rehabilitation.

Let me be very psychological and talk about unconscious motivations and perceptions for a moment. I think it is reasonable to speculate that doctors and medicine are symbols of succor and support. If you are sick, you are suffering and entitled to exemption from the daily labors of the healthy. If you are suffering, it may reduce guilt feelings about not having done your share or about not sharing what you have--and I think it is quite safe to suppose that there are going to be plenty of feelings of guilt during the scarcity period following the explosion. Hence it is very likely that there will be a tendency to resort to pseudosickness out of unconscious needs for support and justification.

What can we do to counteract this tendency? We can tell the public now that if war comes, these are likely symptoms which can mean many things and which they must expect, but which they must guard against taking too seriously too quickly. We can teach our doctors what the military psychiatrists found out in World War II and in Korea--that if you don't encourage and indulge these pseudosymptoms, they occur far less frequently.

Another thing we can do is provide everyone with a device for detecting radiation--a self-reading film badge or some such. It will be a lot harder to convince yourself and others that you've been radiated if the badge doesn't indicate it; and it will be a lot easier for the doctors to judge potential radiation cases quickly if people have film badges.

The biggest outbreak of rumors and pseudosickness will, as far as our evidence and theory tell us, occur during the periods of greatest disorganization. They occur, in fact, just because of the disorganization. But they also make disorganization. Hence it is most necessary to break this vicious circle if we want to maximize the mobilization rate of the country.

But you say: "The authorities will quickly provide housing and relocation for the refugees, so that while these problems are real

ones, disorganization won't last long enough to upset the mobilization effort." In answer let me point out that whereas the British had a much more detailed plan worked out and had done a good bit of stockpiling before World War II began in earnest, still it took about eight months to so organize things under actual attack conditions that a tolerable minimum living standard was available for those bombed out. And remember too that while other cities were attacked, the major damage was done to London. We, on the other hand, are assuming the destruction of fifty cities.

It is true that part of Britain's reorganization problem derived from the fact that the bombing was practically continuous, which made it hard for the authorities to catch their breath. And there are many other circumstances which render the British experiences probably too different from what we may expect, to draw any close parallels. But the fact remains that many of the British authorities felt they were prepared for worst, and clearly they weren't. Judging from the present state of our plans and preparations, and giving the "New Look" I don't see how we can expect to be so organized that recovery will be a quick and easy thing. How long will this basic and absolutely necessary physical and psychological reorganization and relocation take? The recovery rate will depend in good part on the rate at which supplies, organization, and psychological support are available; and all three of these, given the size of the attack or attacks, are likely to arrive slowly.

Note the vicious circle here: recovery dependent on supplies, organization, and support; and supplies, organization, and support in good part dependent upon recovery. I don't believe our plans are far enough along to permit a realistic objective estimate of the time it will take. But I have an "educated" hunch, however, that if things continue as they are now, reorganization would take some months at least.

I shall not dwell on the prerequisites of adequate food, shelter, and sanitation, which are clearly necessary if we expect people to devote their energy and their wits to mobilizing to fight the war. What I do want to discuss is the probable serious inadequacy of the solution usually suggested for housing and feeding these refugees; namely, that they will be absorbed by the surrounding communities.

We usually think of our fellow Americans as openhanded and welcoming of refugees from disasters, but this impression derives from our experiences during peacetime, when disaster is a local event and

everybody knows that there is enough not only for the recipient but for the giver, if he should need it. In these situations a refugee, especially one sheltered by a stranger, is a very temporary thing. We forget that in World War II in both Germany and England the differences in manners, values, and behavior between urban refugees and small town dwellers were so great that millions of city people remained in the cities or returned to them, risking bombing, rather than put up with these differences. There was much mutual recrimination, distrust, and annoyance, which eroded the morale of both groups.

We forget, too, that in 1916 the villages surrounding New York City mounted armed guards to keep out New Yorkers fleeing the polio epidemic. Their argument was simply that while they sympathized, they didn't want their children to get polio. A similar argument may hold when there is fear of food shortages, or fear of enemy-spawned disease carried by city people. Rural distrust of the "city slicker" is not extinct, so that while a rumor that city refugees bear a strange disease may be only a rumor, it is one that will have a subconscious appeal to many people living in the outlying areas. After all, it is one way to hold on to what little one has, with the perfectly moral excuse that the stranger must be repelled in order to protect the health of one's own. Thus, unless careful planning and indoctrination are undertaken, rural-urban conflict may seriously delay the mobilization effort.

As the initial chaos gradually reduces to confusion, we can hope for an initiation of mobilization efforts. I can tell you with some assurance that this period will have significant behavioral characteristics. This is the period where jobs may be assigned and jobs filled, but where the job holder is likely to be chronically subject to absenteeism, both psychological and physical.

The reasons for physical absenteeism are not hard to deduce--preoccupation with housing and food for family and self, physical fatigue, fear of exposure to reattack, and disaster-induced apathy and helplessness. Under the circumstances we are considering, I think we can add to this list fear of radiation.

By psychological absenteeism I am referring to some consequences of the passively disorganized state of mind I spoke of earlier. Namely, for an indeterminate time many of the near miss victims will be only partially paying attention to their jobs. Their minds will be on other things; they will be beset by vague but imperative anxieties and fears. They will be for the most part docile, but also for the most part they

will lack initiative. And they will lack the average abilities to adapt quickly and correctly to new circumstances. They will suffer from sleeplessness, perhaps from short tempers. They will be apathetic and express hopelessness.

Obviously, for all but the most routine and unvarying of jobs these people will show an absence of those characteristics of mind necessary for participating in a war effort of high productivity and efficiency.

On top of this, as we all know, jumpiness, distractability, and apathy tend to be contagious, especially if everyone is living in an insecure and rugged environment. There is some evidence that in World War II refugees from heavily bombed German cities reduced the morale of many in the cities they fled to by their descriptions of the bombing and their distraught states of mind. It seems to me that it is not unlikely that refugees might affect in much the same way the populations of our unbombed but potential target cities.

Just how large or how persistent this "absent" group will be is a moot point. As I indicated earlier, recovery will in part be dependent on the availability of supplies, organization, and psychological support. With all three, adequate recovery for most may occur in no more than a couple of months. Without them, these forms of absenteeism may persist indefinitely--in fact, not only persist but increase.

In closing I'd like to add a few remarks which are not meant to be optimistic, but which are necessary for rounding out the picture I've tried to give you so far.

So far I've stressed the disruptive tendencies likely to be prevalent under the catastrophe of a thermonuclear attack; and I've stressed them because I think they will be the most likely responses of civilians. I've also indicated occasionally what might be done to ameliorate these unhappy effects. More, much more can be done now and in the future and after war begins.

But everything I've mentioned so far, and everything else which might be done, should be based on the fact that the tendency for man to be a social animal is one of the most ingrained in his whole being. It is only when he sees no other way to survive that he will resort to a battle of each against all. Given leadership, especially in disaster, he will follow it. Indeed, he craves it. Leadership means psychological support and physical organization. Leadership <u>means</u> society.

So all our planning for recovery after attack should be based, not on the assumption that the problem will be to keep society from flying apart like an exploding alarm clock. Rather, our planning should be based on the fact that if he can, man will band together with his fellow man for better or for worse. The basic psychological problem, the planning problem, is always how to give man the wherewithall to band together in such ways and in such places that his craving for the security of society will be best fulfilled by acting for and mobilizing for the recovery of that society he loved so well before the holocaust.

Thank you.

COLONEL BARRETT: Gentlemen, Dr. Michael is ready for your questions.

QUESTION: One of the problems that is bothering me somewhat is the reaction we might find from communities where they are told to evacuate and then no attack occurs but they find out that it has occurred in other places. Will they go back to their homes and their work?

DR. MICHAEL: It depends a lot, I think, on how much a community finds out about what has happened to other communities. It ties in with the problem of what kind of information is going to be made available and how soon. If it turns out, for example, that some community had a false alert the first time and got it the second time, or was missed the first and second times and got it the third time, if that kind of information is available to the remaining communities that are evacuating, I think in that case you can expect to find that they will be a pretty jumpy bunch and head out.

On the other hand, don't overlook by any means the ability of people to get used to a rough situation. There have been many people living on the sides of volcanos for centuries, as you know. If you look at the experiences in England, Germany, and Japan when the bombing started, you find that after they got used to it, many people became astonishingly hardened to it and accepted it in a fatalistic kind of way.

If there are too many false alerts, and if nothing seems to be happening by and large to most cities on the second or third alert, I think we can expect people not to take off when the siren blows unless they are forced to. So what people will do in this situation depends a great deal on what in fact happens to other cities and on how much news is made available about what has happened to other cities.

QUESTION: I am a bit concerned about the willingness of the police and the wardens and what-not to remain behind to direct the traffic out of town and such things. Do your studies indicate a willingness of people to remain behind under hazardous conditions?

DR. MICHAEL: This question worries a number of us. These people you refer to are civilians for the most part and--well, the problem is implied in your question. We don't know really. There is some evidence from World War II that for wardens in England their first experiences were a real shock. They were trained, but they just weren't emotionally prepared for it.

I think it is safe to say that many people who have official jobs in connection with evacuation will not fulfill them. They will be more interested in getting their families out. There are several reasons for this. One of them is a tough one to beat, and that is the tendency to think of one's civil defense job as just a little job--at least compared to the safety of their family. If one is a warden of a little block, he is likely to say: "This thing is not very important. This block is likely to be blown up anyhow" and get out. I don't know how you are going to beat that. It is a serious problem.

QUESTION: My question may be purely theoretical, because I can't visualize getting into this mass evacuation practice situation. But assuming that it is possible to get into this practice situation, isn't there a strong possibility that you will get the same kind of reaction to it that the people in Oakland gave--"This is just practice"?

DR. MICHAEL: I am glad you asked that. You see, the present situation is pedagogically bad at the very least. You saw what happened at Oakland. The sirens go off say, once a week, in a context which does not require any change from everyday behavior: people do what they have always done during that time. Thus, in terms of simple stimulus and response learning, whenever the sirens blow people tend to do the same thing they have been doing before.

But if you blew the sirens only when you actually went through an evacuation program, it is probable that people would not get excited about it; but nevertheless at the same time they would have learned to respond with the kind of behavior which is appropriate to the situation.

QUESTION: Doctor, we have had some discussion concerning evacuation personnel carrying firearms. Would you care to discuss,

first, the psychological effect on those who carry the firearms; and, second, the psychological effect on those who do not have them but know that others do?

DR. MICHAEL: May I ask what is the purpose of carrying firearms?

QUESTION: As part of the evacuation kit.

DR. MICHAEL: I would not give them firearms. You see, one thing that is clear from all these disaster studies is that in the social disorganization which occurs in the shock period right after the attack, the psychological and social behavior of people is very often radically different from what it usually is under normal conditions. A man who might usually be safe with a firearm might then be just punchy enough to use it, given the kind of situation that we visualize.

QUESTION: Getting back to this alarm and evacuation business, why does it work so well in training persons in civilian fire drills? We had a very good example last week in Cleveland. There was one factory that held a fire drill twice a week. One day they had a trash fire and it did really endanger the factory. But they just sounded the fire alarm and everybody thought it was a fire drill and three hundred people were out in two minutes.

DR. MICHAEL: I think that is an excellent example of what I was suggesting earlier. In fire drills the alarm is very seldom sounded alone. When it is sounded, those involved go through the act. So they come to respond to that sound symbol with certain behavior. That way you get organized behavior.

If that fire alarm had been sounded every day for a minute and they went on doing what they were doing, you would have a different situation. Understand, the learning I am talking about doesn't depend on careful thought. It's just the simplest kind of stimulus and response learning. If you learn the wrong thing you do the wrong thing in the presence of danger--and obversely.

QUESTION: It seems to me that while practice is certainly good, you might have trouble by having people practice evacuation, leaving the cities, going out in the suburbs, or beyond the surburbs, and then having time to reflect on the wisdom of leaving their homes with their families and finding out how little there is out there in the way of food and shelter. They might get really disturbed.

DR. MICHAEL: Right. I agree completely. They have to find when they get there that there are stockpiles set up which are sufficient to handle the situation, that there are operations that will take care of it. You can't do this half way. This whole business of the adequacy of the reception area is absolutely crucial in pacifying people and getting them out of town quietly.

Part of the struggle in getting people out of town quietly is not only the question of the bomb behind them. It is the problem before them of getting to where there is food and shelter before it's all taken. Unless you can set up your whole practice evacuation scheme or your whole shelter practice scheme so that people are given the experience of finding that adequate food and shelter are available or potentially available, it is bad. I agree with you. You have to do both.

QUESTION: You spoke of the release of news in a disaster period, particularly at the national level, implying that you might not give them all the facts. Wouldn't it be essential to give the real facts to the people? Wouldn't that kill the rumors?

DR. MICHAEL: I am not sure whether the real facts are exactly what you want to give out either for rumor-killing purposes or for anxiety-reducing purposes. This needs a lot of study--a lot more study than it has gotten. Certainly you have to give people something at that time, if no more than just to tell them that we are aware of the need to give them something.

The important thing to realize is that in a disaster situation people have lost their usual connection with the outside world. This is a very anxiety-provoking situation, very upsetting. People have to have some kind of information, even if it is just: "We are getting the information for you. It is going to be a while before we have it, because things are upset." Something that gives them a sense of being connected with the outside world is necessary but this sense of connectedness does not necessarily depend on providing people with facts as such.

Incidentally, if I might digress for a moment, one of the problems in handling this rumor situation is to get the nature of the rumors back from where the rumors are up to the people who can then act to kill the rumor or try to kill it. You are not going to get at rumors any other way. This is something which has to be provided for and as far as I know, it is not being provided for. It is just accepted that information to the public is to come down from the top. But no formal

provision has been made to see that information comes up to the top from the bottom which is absolutely necessary if what comes down from the top is to be useful.

QUESTION: Dr. Michael, you have told us what happens with what you call normal or rational people. What is our problem insofar as people are concerned who are abnormal and persons who are actually confined in institutions?

DR. MICHAEL: You know, about 50 percent of the hospital beds in the country are filled with people who are mentally ill rather than physically ill. I don't know the answer to your question and I don't think anybody else does.

This is one of those problems where we tend to make broad statements like, "Well, we will get them out somehow." But when it comes right down to it, I don't know where the personnel are that can get these people out and I don't know what we are going to do with them once they are out.

Now, remember that most of these people who are the institutionalized mentally ill are not maniacal or homicidal. Given a situation such as is likely to exist after this attack, they might not be distinguishable from too much of the rest of the population.

I don't want to overstate that, but, as you know, a person can be seriously sick mentally and still by and large be able to handle a number of the primitive activities of survival. To that extent I think that maybe you may very well simply release them; have them get out and get along, be in the same boat as everyone else.

QUESTION: You mentioned the probability or at least the possibility of having the evacuation occur during the nighttime. Would you discuss your thought as to whether or not it would be a blackout or a nonblackout evacuation?

DR. MICHAEL: There doesn't seem to be much point any more in having a blackout evacuation. We are not counting on that kind of problem. That's about all I would say about it. It would be much more convenient to have the lights on, and I don't know offhand of any reason why they couldn't be.

QUESTION: I have a question on what you said about people needing attention. You said you would get a larger recovery if you give them food and shelter. With some of these people it might be that all that would be necessary might be just to give them a cup of coffee and a blanket. Would you care to discuss that a little?

DR. MICHAEL: Yes. That is a good point. By and large many of these people wouldn't take a great deal of attention. I mean, as you suggest, all that is necessary might be some warmth, some psychological support, perhaps a cigarette, perhaps a few days rest in an encouraging situation or a few days of doing a job that other people are doing--getting their feet wet again. But even so, this group will be a big problem, because there are going to be an awful lot of people in it.

Let me elaborate on that for a moment, if I may, and bring up one thing that was usually found out the hard way in World War II. Physical sickness is a problem, but there are also the social problems. The first British efforts to cope with bombed out people missed the point. Originally they thought of handling their refugees en masse, so to speak; but it became abundantly clear almost immediately that you have to handle people one at a time. Each person is an individual. If you expect them to recover psychologically and moralely, if I can coin a word, you have to treat them as individuals. You can't treat them by just handing out food and blankets to them and sending them away. They won't recover that way. They will exist but they won't recover. They have to get personal attention. This makes a very messy situation, but the British found out very quickly that it had to be done.

QUESTION: Coming back to your statement on leadership and authority, you said that for leadership you need a symbol of authority. How soon would you estimate that leadership would arise after the attack, and how will it be accepted generally?

DR. MICHAEL: This has two aspects, I would say. Point No. 1, all the evidence that we have indicates that in any disaster situation there is a spontaneous leadership which arises very quickly. Very often those leaders who have been formally delegated leadership turn out to be unsuited for the job. But informal leadership does arise all the time.

Now, Point No. 2, the big problem here is to so organize things that once this informal leader has gotten things under way, he can be accepted into the formal social structure as a leader and be retained as a leader.

One of the sources of discontent, demoralization, and disruption in all disaster recovery periods is the acrimony which develops between the constituted authorities and the "emergent" leaders and/or the informal organizations which arise. Arrangements should be made to incorporate these organizations and leaders at a later date into your formal system when you reach that point. It is a particularly important problem which needs much more attention than it has received.

QUESTION: I have a little difficulty following your remarks about guilt feelings on the part of those who have survived. If someone has done what he is supposed to do and survives, why should he feel guilty? Isn't there enough of the idea of fatalism for him to think it is just his good luck?

DR. MICHAEL: There is plenty of evidence on this point. You don't need a psychiatrist's couch to verify this. You can find it in any disaster that occurs. It's just in the nature of the beast, if you will, that most of us grow up with an awful lot of guilt feelings. By and large we go through life and they don't bother us too much. But situations do arise, such as those involved in disasters, where it becomes necessary for a number of reasons, for persons to somehow relate themselves to the event, to feel responsible in some way. It just turns out that way. There is no time for going into the theory and into case histories. The fact is that in peacetime and wartime disasters you find that it is true. People who have survived, partly because they have survived and others haven't, feel guilty.

That's about all that I can say without going into detail which is not especially appropriate here. But it is a problem and it is and would be a real condition in world war III.

QUESTION: You spoke about studies of the psychological factors involved here. Who is doing that? Is it the National Research Council?

DR. MICHAEL: FCDA is interested. It has some studies under way. There is the Committee on Disaster Studies of the National Research Council, which regularly does human behavior studies as its title implies. There are a number of more or less free-lance people, such as myself, who undertake such studies from time to time. There is the Survey Research Center which I mentioned earlier. It has been doing some work on public attitudes related to disaster.

QUESTION: Any disaster, of course, is a potential source of exploitation for the benefit of the enemy. Do we have any indication

that there is a school of thought on how best to apply these factors that you brought out in further aggravating the situation which an enemy might put into effect?

DR. MICHAEL: There are lots of things you can say about that. I would suspect the enemy is about as familiar with them as we are, unfortunately. He could aggravate the situation very much. For exmaple, I think that with Americans one approach that would be particularly fruitful is anything the enemy can imply about the presence of disease. Again I don't want to go into the technical reasons, the psychiatric reasons, for stating this. But when it comes to health, disease, or cleanliness, Americans are particularly, shall we say, delicate. Anything that the enemy could do to imply that people are sick or that they can spread something or give you something could be very aggravating--very demoralizing.

QUESTION: Everything you have said shows a real need for mass evacuation of American cities. On the other hand, the history of the American people does not indicate that their national characteristic is to run in the face of danger. I wonder what evidence you have had that this principle has been accepted by the American people even though it makes sense.

DR. MICHAEL: I don't quite know how to go about answering that. Perhaps "running in the face of danger" is not an appropriate expression. It is not an emotional response; it is an eminently practical one. There is no point in staying in a city if your chance to live depends on getting out of it. Whether or not it is our history to run in the face of danger, or any other people's history to run, I don't think is the problem here. It is simply that you have a much better chance of living if you get out of the city.

Let me add this: Those who have examined us closely have concluded that Americans do have somewhat of a strong tendency to conform to what we think is the norm. Thus if an American looks around and sees some people heading out of town, he is fairly likely to follow along--not that people from other nations wouldn't! Remember the proportion of people in the Oakland incident who decided to do what other people did.

QUESTION: I have two questions really. Is there a background of experience showing that people whose jobs are essential, for example, telephone operators, will be heroic and stay on the job in case of a fire or flood? And what is the possibility of conditioning the American

public in general to believe that they can get along with less than they have? I think we are conditioned to luxuries now. Most people would probably believe that they couldn't get along without a television set.

DR. MICHAEL: All right. Question one, there is no clear-cut systematic evidence on what it is that makes emergent leaders or heroes or the relation of job importance to such behavior. Part of it is certainly the situation itself. This is a question that many military psychological organizations are working on. We don't know as yet what makes emergent leaders or heroes.

On the second question, I think first you have to convince American advertisers that this is the thing to do.

QUESTION: FCDA is a civilian agency of the Government. We have had some recent indication, and I think you did too, judging from your remarks, that during an emergency probably the one kind of authority that would be immediately recognized is the military. How do you feel about placing civil defense as a responsibility of the Department of Defense now?

DR. MICHAEL: That question has so many ramifications which I am not qualified to speak on that I would rather not even attempt to answer it in a broad sense. Let me say this, though, to be more explicit on what I said:

I think it is imperative that some sort of arrangement be made to use more military personnel during the immediate postattack period for the purposes which we have discussed. One way to do this would be to put civil defense under the Department of Defense. There are other ways too, perhaps. But certainly, to my mind--if we are going to have a man out directing traffic, telling people to go this way rather than that--and getting them to obey--he will need to have a uniform on, so that he will be recognized as a military man. I see no alternative. It will have more pacifying potential than anything I can think of.

QUESTION: I would like to say one thing about the military. We have moved in and put our air bases next to towns and cities. Therefore the town or city is going to become a target, where it wasn't a target until we got there. This is quite a serious thing to this little town. I don't know what to do about it. We have to have bases for the security of the country. We have about 30 million dollars invested in them. We are in there with a pretty big investment. We can't just abandon them and move out into the desert somewhere. Or can we? I don't know. Have you any suggestions?

DR. MICHAEL: As soon as I think of one, I will let you know.

QUESTION: We are told that our present warning system may give us a warning time of one or two hours. I can visualize somebody who has to make the decision on whether or not an attack is imminent using up some of that time in making his decision. Maybe the Russians will take advantage of the opportunity to run some practice missions and thereby make it harder for that somebody to make up his mind whether to blow the whistle or not. How many times will he blow that whistle before he will use up most of the warning time in making up his mind?

DR. MICHAEL: I am glad you asked that question. We talk about two to four hours warning time. One point that I made earlier--and I would like to mention it again now--is the difference between military command and civilian control. You don't have any civilian command as such. You can't give or receive orders in civilian organization as you can in the military. I would say by and large that, things being what they are, when a warning is given, half of that warning time is going to be used up by the civilian organization trying to figure out whether to blow the whistle or not.

This is not meant as a nasty remark. I think it is a simple statement of an unpalatable fact. Remember that these civilian officials take on an awful lot of responsibility in blowing that whistle. If it turns out to be a false alarm and five hundred people have their property or bodies damaged in the rush, they are responsible for it. They or the city they represent can be sued as things now stand.

What about the industries that are shut down, the cost of the municipal equipment that is turned out for use? Who pays for all of that? Once you have made a decision like that, as you well know, you can set a tremendous operation under way; and, since it is a civilian one, by its very nature there is no unequivical assignment of authority to say or do what and when for sure. You can't give commands in a civilian operation. This fact is crucial.

So if the enemy flies by a couple of times--and in some ways I would like to see it happen, just between you and me, to see what would happen; it would be a very useful object lesson in one sense--if that happened, it would take that official a good bit longer to make up his mind the next time whether to blow the whistle or not. He might not blow it at all!

I really don't know the answer to this one. I do know that you must not think in terms of expecting the efficiency of command in civilian organizations which is characteristic of military organizations. It just does not exist. They are not made up of people who are used to making quick decisions under stress and in a democracy in peacetime they are not likely ever to be.

QUESTION: Has anybody ever gone back to survivors of the San Francisco earthquake or the sinking of the Titanic or the Tokyo earthquake of 1921 and tried to pick up any major reactions of the people?

DR. MICHAEL: This is why the Committee on Disaster Studies was initiated about four or five years ago. Up until that time we had no systematic way of doing that. There was no organization set up to do it.

The trouble with this kind of material is that in retrospect it becomes distorted very quickly. You can't depend on what would come out of it if you get to people years or even months after the event. I don't know whether anyone has ever tried to locate any survivors of the San Francisco earthquake. I would like to check on that. I think that is an interesting idea. But even if they did exist, by now certainly, and very often within a week after the disaster, most people have incorporated their own unique disaster experiences into a picture which makes sense to them in terms of their normal state of mind.

You see, it is very important to understand what happens to people in a disaster and what you get when you go and talk to them later. A disaster is a terribly upsetting thing. In retrospect much of what happened to you doesn't make any sense at all to you and this in itself is upsetting to you. By the nature of the beast we tend to reorganize these things so they do make sense. So the victim tries to figure out something that will explain in everyday terms what he did in an extraordinary circumstance. This rationalization is by and large useless for understanding disaster behavior. Thus there isn't much that you can get by going back to the survivors after they've had a chance to reorganize their experiences. But since we developed this committee, we have been able to get to the disaster soon enough to get firsthand information immediately after the event.

QUESTION: Doctor, someplace or other I read that during World War II, when things went awfully bad in some of the German cities, they sort of blamed their plight somewhat on the military and were very resentful toward them; perhaps would have fought with the military

if they had been capable of doing so. Do you believe that if some of our cities were bombed, this same kind of thing might happen and that there might be a reaction of the public against the military?

DR. MICHAEL: Yes. This is an important point. There is a great deal of evidence from both peacetime disasters and wartime sources that civilians vent their anger, their aggression, not specifically on the military, but on their own authorities in general, and that very little of it goes out to the enemy. The Germans, the British, the Japanese all went after their own administrative people, civilian and military. And this is one reason why it is so important to teach people in advance to understand their own emotions, because we all have aggressions and we don't want them to go in the wrong direction in wartime.

COLONEL BARRETT: Dr. Michael, on behalf of the College, I thank you for your presentation this morning.

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