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RESEARCH IN THE SOCIAL SCIENCES

Dr. Samuel A. Stouffer

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Reviewed by: Colonel Thomas C. Keach, USAF

Date: 5 November 1959

INDUSTRIAL COLLEGE OF THE ARMED FORCES
WASHINGTON, D. C.

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23 October 1959

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Reporter: Ralph W. Bennett

Publication No. L60-57

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COLONEL BATTE: General Mundy, General Houseman, Admiral Patrick, Gentlemen: During recent weeks we have heard some interesting discussions concerning the implications of this era of nuclear warfare and space exploration in which we live. Some of these implications have dealt with the impact upon our educational system; for example, the need for increased endeavor in funds in the physical science field; or with the great consequences beyond the battlefield, such as political, diplomatic, or economic considerations; or even with how inadequate or fouled up is our budgetary and decision-making process.

Yet I submit that transcending all of these discussions is a realization that perhaps the time has now come when the real problem and object of man is to learn how to live with man; that is, how to get things done with and through people.

Now, let's bring the importance of this closer to home. All of us have been commanders; and I dare say that as commanders we were dismayed to learn that what started off as an operational problem or a supply problem all too often winds up in a problem in human relations. And then, to our further dismay, we do not possess the capability or the know-how to solve such a problem.

In the interest of developing this know-how, we turn to the social

sciences and achieve therefrom a know-how as to why man behaves and acts as he does. This field of social sciences, when compared with the physical sciences, I think you will agree, has been very much on the short end fund-wise.

For our lecture today we are fortunate to have a man who is generally conceded by his colleagues to be one of the foremost social scientists in the world. He spends most of his time and that of his laboratory at Harvard in the field of basic research in the social sciences.

Dr. Stauffer, it is indeed a pleasure to welcome you again to the Industrial College.

Gentlemen, Dr. Stauffer.

DR. STAUFFER: General Mundy, Gentlemen: It's a real pleasure to come back here. I have enjoyed the opportunity to speak before this group and say a few things about the social sciences. There's not much you can say in 45 minutes, but possibly I can suggest at least some directions in which work in this field is going, which holds promise for the future and possibly some implications for the present.

I am going to limit my discussion to certain fields of the social sciences. I'm not going to talk about economics or government, but I want to talk a little bit about some of the kinds of things that are going on in what sometimes are called the behavioral sciences--psychology, sociology, anthropology--and give you some illustrations at least that might be of interest and importance.

The first thing I'd like to say is that I find that many people have kind of a misconception of what the behavioral sciences are trying to do, because they say: "Well, after all, it's just common sense, with good practical horse sense, and that's what it is." Well, I'm certain that if it isn't some common sense and horse sense, it isn't going to be much good. But I would like also to point out that there is something more than common sense involved in it, just as there is in the natural sciences. The sun, of course, doesn't rise in the east. And neither are some of the things so obvious that once were thought to be obvious. To take just a fairly simple example, I think our founding fathers gloried in the thought that man was a reasoning animal, which I'm sure he is, and that in general decisions were reached as the end of a chain of rational thought.

Well, I suppose everyone in this room has seen some time or other a hypnotist at work, maybe at a party somewhere, and seen demonstrated this phenomenon called post-hypnotic suggestion. What happens? The hypnotist tells you that when you get out of this trance, you're going to do some foolish thing. Maybe in the parlor here you're going to take your shoes off and put your feet up on the piano. You're going to do this, and you're going to have a very good reason for doing it, a good, plausible reason.

Well, what happens is--and you probably have seen this done--that, sure enough, at the appropriate time, fifteen minutes later or twenty minutes, whenever the hypnotist had indicated, you take your

shoes off. You put your feet up on the piano. Then you explain how it is; that your feet hurt, that you needed to rest them, and you kind of apologize for the bizarre behavior here, but this is a very reasonable thing to do under the circumstances; and you are simply not aware--this is important--you are not aware of why it was that you put your feet up on the piano.

Now, this silly little experiment is really of almost devastating significance. Long before Freud we became aware of the fact that many of the things we do, we do because of the gut, as it were, and then use our divine powers of reason to rationalize it and find a good explanation for doing that which we were really motivated to do by circumstances that we might even be quite unaware of. And this business of trying to examine motivation in these terms represents a real departure from common sense.

Now, a great deal of this, of course, certainly has not been verified experimentally. Some of it has and some of it hasn't. But I think all of the research that has been going on now in the last twenty-five or thirty years has tended to point up the utmost significance of trying to understand more about how these unconscious motivations, of one type or another, come to play a role in a particular decision. And this becomes extremely important, because it means that we recognize the importance of reason, but we also have to recognize in any given action that reason may be rationalization rather than itself the motivating element.

Now, I'm going to go on with this and indicate some of the further

things that we think we've found out that might be helpful in looking at what happens in certain kinds of situations.

One of the concepts that has come more and more to the forefront in sociology and social psychology is the concept of reference groups or reference systems. That is, we are all members of many groups, to some of which we are very much beholden. And much of the time our actions are as representatives of such groups or sub-groups, and sometimes they come into conflict.

Actually, when a person has a problem, one of the simplest ways of beginning to look at this problem is to ask something about the various groups that he's a member of. Or put it in these terms: With whom is he comparing himself?

During World War II I happened to be working in the Pentagon building directing a good deal of research that was done in the Army and Air Force on attitudes of soldiers; and we were asked particularly to look into attitudes toward promotions in the military police. The feeling here was that the military police were getting the short end of the stick; that the TO's weren't enough to permit a person to look forward to promotion; and that the rather low morale, as it was believed, of the military police might be attributable to this. We were asked to make this study to demonstrate that this attitude toward promotion was pretty basic in this situation.

So we did. We studied the military police and asked questions about what they felt about promotion, promotion policy, the fairness

of promotions, and so on. We didn't just study the military police. We wanted to get a kind of contrasting example. So we took an outfit where promotions were very rapid, namely, what was then called the Air Corps.

Now, anybody knows that when promotion possibilities are very great, people are going to be happier than when they are frozen. But what about it? The common sense expectation was not verified.

What we found out was this: that a man in the Air Force, let's say he was a high school graduate, who had been in the service 18 months and was not a sergeant, felt that he personally had been discriminated against, that he had been the victim of chicanery, of double dealing; and he had all sorts of anger and resentment against people, against his superiors and against the Air Force, because he hadn't got ahead.

If a man, however, a high school graduate, in the military police had got to be a corporal, he was doing darn well relative to others in the military police. And, consequently, he felt pretty good about it. Now, sure; he would have been glad to have been in an outfit like the Air Force--he told us this--where he would have a better chance for promotion; but he felt this was fair. If he got ahead relative to others, he had done pretty well.

And we found even that PFC's in the military police had more favorable attitudes toward the promotion policy, and toward the fairness of promotion, and toward the fairness of their own status in the military police than did, let's say, corporals in the Air Force.

As a matter of fact, we extended the study and took in a lot of branches of the Army. On one axis here we plotted the rate of promotion in these different branches. On the other axis we plotted the attitude toward promotion policy. And we found a pretty definite sort of relationship. The slower the rate of promotion, the more favorable the attitude toward promotion policy.

Now, I 'm not going to follow this up by arguing that what the Air Force should have done was to reduce the promotion rates. No; not at all. But I'm simply pointing out here that, contrary to common sense, something was happening.

Now, we have a word or phrase, kind of one of these long words, to describe what was going on. We use the concept "relative deprivation." You don't need to worry too exactly about this word, except that it does sort of sum up here something that is pretty important and something that you are probably all familiar with. That is that a person's attitude of well being, his sense of justice, and so on in a given situation, has nothing particular to do with the absolute state of affairs. It has to do with some relative state of affairs. That is, relative to other people in the same boat with him, how is he doing?

If you're in a lifeboat, let's say, and the ocean liner has been sunk and all you have to eat is hardtack, you're not going to complain about the food. On the other hand, if you're in first class and ~~get~~ ~~some~~ have paid a lot of money for a ride in first class and you get pretty terrible food, you gripe all over the place. It's a relative

matter.

Now, this concept in itself is fairly obvious; but it becomes difficult to apply it in many cases. However, if we think about this, it often unlocks a lot of things that otherwise we wouldn't see at all.

Let me give you another illustration. There was a lot of pressure by some Congressmen and others during the early or middle stages of World War II. to train more of our Negro troops in the North. This came from liberals, who felt that it wasn't fair to our northern Negro soldiers, who hadn't experienced certain of the southern ways of life, to be exposed to segregation in the busses, to the alleged treatment by the white police in this town, and perhaps by the military police also in this town; and that it would be better to train more of them in the North. So we were ordered to make a study of the morale of Negro soldiers stationed in northern camps and compare this with the morale of Negro soldiers stationed in southern camps. And we did this. And we were particularly interested in the morale on the northern Negro soldier.

Now, what did we find? We found, as predicted, that the northern Negro soldiers who were stationed, let's say, at Fort Benning, didn't like some of the treatment they got in Columbus a bit. They resented it and they were even noisy about it in some cases. They didn't like it.

But we found something else. On a series of questions that we asked, that we felt were fairly good measurement of personal commitment, or morale, if you wish, we found, to the shocked surprise of even the liberals in the Pentagon, that the northern Negros stationed in southern

camps gave evidence of actually higher personal commitment and higher morale than those stationed in northern camps. Now, what was going on? This doesn't make sense. It's not common sense.

Well, let's examine it a little more, and ask this question: With whom were these Negro soldiers comparing themselves when they said, "I'm getting good treatment" or when they said, "This kind of treatment."? One of our little trick questions was: "On the whole do you think you could do more for your country as a soldier than as a civilian working in a war industry?" This was a nice question. We found that those stationed up in Fort Devens or near Detroit or out near Portland, Oregon, tended to say, "I could do more for my country as a war worker." And in general, on a whole series of such questions, they indicated here more resentment about being in the Army and being in uniform, and more of a feeling that it was wrong for them to be committed to this; whereas these men stationed in the South had from the Army's point of view, a considerably more wholesome attitude of commitment to the enterprise.

As a matter of fact, when we got this finding first, in my own outfit I had several liberals--and I think of myself as one--who couldn't believe the result and insisted there must be some mistake in it. And it took me nearly three weeks to get that report released from my own technical staff, because they just didn't want this said.

Well, what was it? We looked at the question, With whom were they comparing themselves? and we found this sort of thing: This

Negro soldier stationed at Fort Benning who was going into Columbus looked around and saw the Negro civilians in Columbus; and compared with those Negro civilians in Columbus, he was cock of the walk. Wearing his uniform, having the income that he had, he had access to all the liquor he wanted, to the best women in the Negro community. He could strut his stuff through the town. He was relatively an advantage person and could see it and feel it, even though he got this other discriminatory treatment.

Whereas the fellow stationed at Fort Devens, when he'd go into Boston, would meet people working out at the Fore River Shipyards, who were making twenty dollars a day--Negros who were really doing well and who probably should have been drafted just as much as this other fellow. And the comparison here, relatively with these civilians who were getting a good thing out of it, was one which made this person feel relatively deprived. And this concept of relative deprivation just kind of turned things around on end.

We found the same thing in Camp Custis. They would go into Detroit and meet other Negroes here who were working for Kaiser or General Motors or Ford. And the same would be true out in Portland. You would have this relative situation.

Now, I could go on. I could give you half a dozen illustrations of this problem as we saw it in the Army. And it was very important, for example, in connection with certain attitudes toward officers.

Now, what's going on here? Well, we take this concept and

we ask the question, With whom are people comparing themselves in a given situation? Another way of phrasing this is, What is this person's reference system? He has many groups with whom he might compare himself; and so oftentimes it's a research problem to find out what groups are the most relevant.

There are two kinds of reference groups, as we see it now. They might be called comparison groups; that is, the kind I am talking about--groups with whom we compare ourselves. My classmates when I graduated from college--how am I doing relative to them? The people in my own business of about my own age--how am I doing relative to them? The people in my community--how am I doing relative to them? It makes a lot of difference what the standards of comparison are.

Soldiers in rear areas overseas thought they were having an awful time as long as they were comparing themselves with the soldiers back home; but as soon as they compared themselves with combat troops, they thought they were lucky. So one of the problems here is trying to know what kind of comparisons are being involved in any given situation.

Now, the other type of group--first I mentioned comparison groups--the other type, which I would like to say a word about, are what we call sanctioning groups. A comparison group may or may not be a sanctioning group. By sanctioning group I simply mean this--that some of the groups that we are members of have in themselves the power of either rewarding us or punishing us for actions that we may take. "Sanctions" is just a general word here. It means either reward or

punishment.

Now, many times we find ourselves in very important what we call role conflicts; that is, we have a role in one group, we have a role in another group, and sometimes those two roles are incompatible. When they are incompatible, there is tension. Then what happens depends a good deal upon the relative pressure that these two or more sanctioning groups involved in the situation can bring to bear. And sometimes, going back to this earlier thing I said, the actions which we take, which we reason out so well, are really nothing more than a reflection of the relative impact of this kind of conflict.

I ~~tryx~~ try a silly little experiment at Harvard just to illustrate this role conflict business. I ask the students to imagine that they are proctoring an examination, and you discover ~~unmistakably~~ unmistakably that a man in the class is cheating. Not only is this man in the class cheating, but this man is a good friend of yours. He admits it himself. You can see that he's copying stuff there. He says, "I'm sorry I'm doing it." And now the problem that I put to the students was, "If you were a proctor, what would you do under such circumstances?"

Now, I don't know what they would really do. I only know what they say they will do under such circumstances. And let's examine what the problem is now from the standpoint of this reference system concept.

There are actually two groups involved here, two reference groups. One of them is your own fellow students. If your fellow

students found out that you turned this fellow in and he was a friend of yours, there's a possibility that you would be held guilty of violating one of the oldest and most sacred principles in all of our life, one that we are taught at our mother's knee--"Don't rat on a friend." This is a principle, a principle of conduct. On the other hand, there is a moral obligation, if you have taken this job of policeman, to behave impartially and carry out the orders of the institution.

Well, I make that experiment, and practically all of our young fellows in our institution--this may reflect something on the kind of people we get--I don't know--but practically all said they would not turn him in.

Now, let's examine this a little further. They were in conflict, yes; but they resolved the conflict by taking an action here which they thought would be compatible with what their friends would expect them to do.

But there's a little more involved in it than that. There are really two things involved in such actions. One is the relative sanctions that might be introduced. In this case, you see, if they didn't turn him in, there's not very much chance that the university would find out about it; and therefore there's really no penalty involved there. There's not much likelihood he would be penalized except in his own conscience if he didn't turn him in. Whereas, if he did turn him in, the sanctions of the student body certainly would come down; whereas the sanctions that the university might be prepared to give--and they

would be serious too. I asked a dean if a man were caught proctoring and did such a thing as this and didn't turn him in, what the penalty would be, and he said "expulsion"--but the proctor could figure, you see, that nobody is really going to find this out. So the sanctions really aren't strong here, because the probability of their being exercised is small.

So we have two things that are really involved in a decision like this. One is the relative sanctions, and the other is the legitimacy. There are some things where there is oftentimes no problem. Here are two actions that we might take--action A or action B. If the sanctions are about the same in each case and the legitimacy is different, if one is more legitimate than the other, then we will normally do the legitimate thing. Similarly, if here are two acts that are equally legitimate, then we will probably do the one which has the strongest sanctions behind it.

But what do you do in a situation where there is high legitimacy and low sanctions on one side, and high sanctions and low legitimacy on the other? This is a real problem. This is the kind of problem that we find ourselves in frequently. Interesting studies have been made of school superintendents who often find themselves in this kind of conflict. For instance, a member of your school board says, "Appoint this teacher, please. She's a niece of mine, and she's pretty good. Please appoint her as a teacher."

Now, you need to have that school board going along with you.

in terms of your interest in getting the school run well. There's no doubt about this. Not only that, but you also know that this guy is a little bit vindictive; and if you don't appoint that niece, there's a chance that it's going to hurt you, hurt you seriously. You won't necessarily lose your job, but it's going to hurt you in getting this building program along that you need to do. So, after all, why not?

On the other hand, as a professional person, a professional educator, you certainly have almost a Hippocratic oath to use as your criterion in the appointment of teachers--professional competence--and if there are other people more competent than this niece who are applying, it is your moral duty as a professional person to appoint the most competent person.

Now, this kind of conflict--and this is not infrequent in the very detailed study made of about fifty superintendents. They found that this sort of thing comes up in one form or another very, very frequently indeed--here's a situation where the sanctions are pretty strong. The tendency would be to go along and appoint the niece. On the other hand, one has some sanctions on the other side, because one doesn't want to lose faith in the eyes of his fellow schoolteachers. If you say yes, you did this, they're not going to respect you for your integrity quite as much. So there is a little problem there.

On the other hand, the sanctions are so much stronger from the school board that what happens, then, is that all the rationalizing machinery of the superintendent comes into play. He has to figure here

that this may be a compromise that is necessary to make in the interest of the longer-run goal that he's got, and that his teachers will understand him. So he may make that kind of compromise in a given situation.

In fact, we found that people differ in their predispositions for making compromises in such issues of moral conflict. It's very interesting. I would suggest that in the studies we have been making on this, those who are really successful operators are at neither extreme of such a disposition. The person who is so rigid that he's always standing on principle and failing to bend and compromise at times when the success of the mission depends on it is not very likely to be a very successful executive in whatever capacity he's going to be. And, of course, the person at the other end, who has no principles and who is willing to respond to whatever pressures there are at the moment, is not likely in the long run to be a success either. There is some kind of a curve here or an optimum point. Just where that optimum point comes I don't know. But we have some reason to think that this kind of curve exists. And studies have been made in which people have been measured on this, and they have been given a score, let's say, of where they stand somewhere along this continuum from being an extreme man of principle to an extreme opportunist. And then we have tried to prove, have asked him then, how he has operated in a whole series of actual situations which he has been in. And it comes out that we can predict pretty well what his answer is going to be in these situations.

Well, much more is being done in the study of these reference groups, from the standpoint both of the comparison groups and the sanctioning groups; and this way of looking at motivation is proving very helpful in helping analyze quite a variety of situations. We wonder why a person did what he did, or how he's going to operate when we have to make a prediction in the future. By thinking in terms of some kind of equation here, involving sanctions, involving legitimacy, and involving a general predisposition to choose one or the other, we find ourselves able to advance quite a bit in our thinking on this.

Now, I have said something about reference systems. I want to say something on the subject of leadership. I feel very diffident talking before a distinguished group such as this on the subject; and I'm not sure I've got too much to say, except I'd like to point that there's been a great deal of work done in the last ten or fifteen years trying to study certain aspects of leadership in a rather fresh way.

One way of studying this has been to study the leadership of small discussion groups, very small groups. I am thinking now--and I want to limit this carefully--of small problem-solving groups, like a committee which has to reach a decision on something, a unanimous decision if possible, and come up with a report. And I am also for the moment going to think now only of a committee of equals, not a committee in which an admiral sits at the head as chairman and captains constitute the other members of the committee. I am, rather, thinking now of a committee of equals, all essentially of the same rank or social status or power position.

This committee has to solve some kind of problem in a series of meetings and reach a conclusion about it.

Now, the question that has been asked about such committees is: What kind of person makes a good leader of such of committee? There has been quite a lot of work done psychologically trying to figure out, What are the traits of a man who would make a good leader of such a committee? We like to pick good leaders. Well, it turned out that the question wasn't much good, for this reason:

The reason is that there are two--at least two--different kinds of leaders which have to appear in that committee. They have different functions to perform. And a very curious thing is--and this is something that was quite unexpected--that the same person cannot perform those two functions at the same meeting. He's got to take one role or the other, and they've got to be separated or there'll be real tension.

Now, what are those two roles? Well, one of them we might call the innovator role, the idea men. This is leadership, that is, sparking the idea, that is, pushing and pressing for the idea that "This is the solution that we ought to have." He's a very necessary part of a committee. But the other role is that of what we call the moderator. We are talking only of a little group here--four or five people.

Now, that moderator role is absolutely essential. The man who is pressing to get something done cannot occupy the moderator role at the same time unless he's endowed with special rank. If he is not endowed with special rank, then he gets in trouble. There really has

to be these two roles.

We have done this experimentally a number of times. There have been many experiments done on this. This was written up in the Scientific American not too long ago. You can just see the tensions build up if a person really has something that he's pressing for and at the same time he tries to put himself in the role of chairman of the meeting. It just can't work.

Now, another interesting thing that happens is that it hasn't too much to do with the personality traits of individuals. You might function very well in the role of moderator in one group, whereas in another group you would function very well in the role of idea man, or a gadfly, or innovator, depending upon what you were interested in at the time. There are some people who prefer to be gadflies, who are temperamentally inclined more frequently to be that kind of person. There are other people who prefer to be the strong, silent man, who carefully avoids expressing an idea until he's pretty sure that everybody else would agree with it, and then he serves the judicial role of getting the decision made.

The role of the moderator must not be underestimated, because one of the things that the moderator does--he doesn't officially call himself the moderator; I'm just giving this name here to this function--the moderator particularly brings in the other members of the group, into the game. There is almost inevitably in all of these groups hostility that develops against the man with ideas. We don't know quite why

that is. But the man who has ideas and has a solution generates a certain jealousy perhaps on the part of others that didn't have the ideas; and in any case a great deal of tension develops between him and other members of the group.

Now, the moderator's job is to kind of knock him on the head with a rubber hammer and say: "Well, now, that may not be such a good idea. Joe, what you said impressed me very much" and to bring out Joe's idea, so that things are kept in balance, in sort of harmony, as it were, while the discussion proceeds.

It follows from this that there is a technique that seems to work pretty darned well in getting something through a small group like this, and that is if the two people will agree in advance that "I will take the moderator role and you will take the idea man role; and I will appropriately knock you on the head with this rubber hammer several times," there's a good chance that the two of us, in cahoots, can get a thing done and the rest of the members of the group will hardly know what hit them. We have actually tried this experimentally, and this is one possibility.

Now, I mention this innovator-moderator distinction because it probably is the kind of distinction that is in a very primitive way analogous to a distinction that cuts all the way through social organization. Fortune Magazine ran a survey of executives and asked the question: "Which kind of person makes the better president of a company--a person who is a man of ideas, who is a risk taker, or a man who is

primarily a judicial type?" They went further. Really what they asked was this: "Is the combination of a president who is full of ideas and an executive vice president who is a good, solid administrator a better combination in a business than to have as president the good, solid executive type and under him a real gadfly who is pressing for all kinds of actions?" This was given to the presidents, the officials, of Amerca's largest corporations. They got several hundred replies, and tabulated them, and they found that it was almost 50-50 the way they voted for. What we'd like to know was who voted for which and probably each person voted for the kind of situation that he himself represented.

Nevertheless, now, there is something necessary in the social situation, and if an organization is going to be viable, it's certainly necessary that these two roles be represented in positions of power; and the problem is the reconciliation of the two roles. That is, an organization which consists of gadflies only would be horrible. An organization which consists of moderators only would be dead. The problem is rather one of some kind of balance. And I think it is only fair to say that the more we look into this, the less we are convinced that this is a matter simply of personality traits and preferences of individuals; that one finds a role in a given situation which may be quite different. That is, in one of your tours of duty you may turn out to play a role very different from the kind of role that you played in another tour of duty, because of the fact that you see an opportunity or need for this kind of action here,

whereas in the other tour of duty, because of the people around you, you were put in quite a different position.

There have been further studies made trying to find out something about how innovations get accepted. This is something that is very important and something that we know relatively little about. And on this I'd like to come back here ten years from now and talk more about it, because a great deal of research is now going on. There should be some research in the Armed Forces on this. I don't know that there is. But let me give you an example or two of the kind of information that we are beginning to get.

There was a study made back in Iowa, my home State, of the introduction of hybrid corn into a farm county in Iowa. The question was, Who were the people, who were the innovators? What kind of people first used this hybrid corn?

Well, what they found was this: They were able to get the date when each farmer planted hybrid corn; and they also got information about it so they could classify them somewhat. They found that the innovators, the first people to plant the hybrid corn, were rather unrespectable people. They were young boys out of Ames who had a reputation for recklessness. They would buy too expensive machinery. They would do various fool things. Some of them had too much money. But they were not regarded as role models for the rest of the community to follow.

But when they planted this hybrid corn, the stuffed shirts of the

Farm Bureau came over and looked over the fence and saw here this corn growing and saw what the yield was; that it was 50 or 100 percent higher than they had gotten before. So the next year the really big shots in this farming community in Iowa planted hybrid seed corn. Now, we call those the influentials, because the next year the followers came in and the great mass of farmers within three years had followed the example of the influentials and were planting hybrid corn. There was a small group which didn't, and we call them the die-hards.

Now, this set of categories--innovators, influentials, followers, die-hards--is a rather interesting set of categories, because we are beginning to find that this is found in other situations. For example, a study was made of the introduction of a new drug among doctors. This was a study made at Columbia University. They studied all the doctors in two communities of 30,000 population. They did this for a drug house because the drug house was interested in the very practical problem: "Since we can't visit all the doctors, we want to find out who are the real innovators. We want to get at who are the innovators, so we can concentrate on those."

What they found out was quite analogous to what they found out about the hybrid corn--that the innovators, that is, the first doctors to use this new drug, were not too highly respected in the community. They tended to be one of two types--either young fellows relatively newly out of medical school, or older doctors without a terribly good practice who did not have a very good reputation for conservatism about possible side

effects. But these were the first people to adopt it.

Now, in this case they had no influence directly on the rest of the people. In the seed corn case the innovators did, because they grew the corn and we could see it. But in this case it was different. It was some time later before the really influential doctors adopted this drug, and they adopted it primarily by the detail men getting to them and explaining to them and also having read in the medical journals more and more articles about the efficacy of the drug and the absence of side effects.

As soon as the influentials adopted it, then the followers swung in, and within the next year it was being used by most of the doctors in the community. The followers did not adopt it because of what they had read in the journals, but they adopted it primarily because Dr. Jones, whom they respected, said it was a good thing to use. And then there were the die-hards, who are always with us.

Well, now, we don't know yet how general this pattern is. It is possible that the first pioneer becomes so battered in the process of being a pioneer that he loses his usefulness, as I think Lincoln once said. But it is apparently fairly clear that the first to try something is a person who may not have too great prestige. And if he does have it, he runs a good chance of losing it, that the influential is in sort of a second flight in timing.

Now, I don't know how general this is going to be, but it would be very interesting to take a look at the rocket story in the Armed Forces

or its various stories and try to see to what extent some of these things can be traced. It you think back in your own experience, it's quite possible that you may have seen this process operate.

Now, I'm not suggesting that ~~there exis~~ we can generalize these things; but for whatever they are worth, I think it's well to point out that to talk about leadership as leadership isn't too useful a thing;that the subject of leadership has to be broken down into what kinds of leadership, under what conditions. And, as soon as you do that, you are talking about very different kinds of behavior, very different indeed, involving quite different psychological and sociological ~~problems~~ progress.

I did want in conclusion to bring out one thing. I said something about reference groups. I said something about research in leadership. I'd like to say just a word about communication and persuasion.

Here there has been since the war a good deal of actual experimentation, trying to test hypotheses about what are the most effective ways to conduct a communication. We did such a study, for example, in the War Department toward the end of the war. I remember, there was in the Information and Education Division a tremendous argument as to whether or not, in trying to sell our soldiers on the idea that the war with Japan was still going to be a long one, just about the time that Germany was capitulating, whether it was better to present the notion, since we knew that the boys all wanted to come home and their biases were in favor of thinking that it was going to be a short war, should we start with that, give the arguments for a short war, and then refute them?

Or should we just give the arguments for a long war, tell why it was that this was was going to last two years, which was the policy that the I. and E. Division was supposed to enunciate at this point, quite properly too, because the story of the bomb was not yet in.

Well, the argument went on and on and on and got nowhere, as such arguments usually do. I heard about this. There were people in there from advertising agencies who stood for each point of view. So an experiment was conducted in which a very fine broadcaster presented this, a good commentator whom we got to present this and record it, giving all the arguments as to why this was going to be a long war. It was very cleverly done. He presented such things as this: how long it took our bombers to go from England to Germany, how long it would take our bombers to go to Japan from the nearest base, and so on, making this kind of argument, and also appealing to reason and so on.

All right. Now, what did they do with the other argument? What they did was to take the argument that they thought the men had and say: "All right. Sure, Japanese cities are made of paper, and so forth, and they will burn, but-- Sure, the Japanese have refused to surrender so far, but--" And they went on, taking all these up.

The same commentator made both speeches, separately, and they were recorded. Two groups of soldiers were exposed to this propaganda at a regular I. and E. session. They were all given some kind of attitude test, about their attitude toward officers and what-not,

and then among that they were asked, "How long do you think the war is going to last with Japan?" And then a couple of weeks later they were given another attitude test--they were used to this stuff--and it was stuck in there again, "How long do you think the war is going to last?" In between, you see, they had gotten this recording.

What happened was this: It turned out that the proponents of both points of view were right. With the better-educated soldiers, the two-sided argument was much the more effective, for those who were high school graduates, that is, taking your position that it was going to be a short war and showing that it was wrong. I mean, more people changed their point of view, lengthened their estimates of the war as a result of listening to this with the two-sided argument.

With the lesser-educated people, unhappily, it was the reverse. What some of the advertising experts feared apparently did happen. Some of them were taught. This put ideas into their heads that they hadn't thought of before, such as the paper cities of Japan; and with them it was possibly less effective than with the better educated.

Well, now, a whole series of such studies have been done since, mainly at an institution that I mention rather reluctantly--Yale. There were some beautiful studies, in which they have done follow-ups of various kinds. And, again, they get the same type of effects that I described, but they also find this: that it makes a lot of difference whether the effect is going to be a short-run effect or a long-run effect. If it is going to be a long-run effect, it is probably better to present

both sides, even though there is some risk of a boomerang. If it's only a short-run effect, it's just to get somebody to do something now, it's probably better not to present both sides, and especially in certain cases.

Well, this is an example, only one of numerous illustrations that one might give, of the kind of actual experimental research which is beginning to teach us something about communication. Oh, how I wish we knew more about it. How I wish I could learn, for instance, to communicate better with my own teen-age daughter. We need to know much more.

But I want to say to you gentleman that social science hasn't been operating in the laboratory, with really good, controlled experiments, for many years. It has been operating for only a relatively few years. But gradually we are building up bodies of knowledge, some of which it is too early to apply, and some of which possibly can be applied. And I think that in the next few years, if we are blessed with peace, we are going to learn much more than we ever knew before about some of the things that make us tick as people and make us operate effectively in groups.

COL. BATTE: Dr. Stouffer is ready for your questions.

QUESTION: My question may not be germane to your address, but within the last few days we have heard a number of speakers from the Office of Civil and Defense Mobilization and we have discussed their programs in our seminars. We have had this question about civil

defense, morale, and shelters. A number of the students have expressed themselves quite vocally as to whether, if there were a massive thermonuclear attack on the United States, there might not be a devastating effect on the morale of the people, and this might break down completely. Can you tell us, sir, whether any studies have been made which can accurately predict what the effect would be on the civilian population under such circumstances?

DR. STOUFFER: I am pretty sure that there are no studies that could accurately predict what would be the effect of a thermonuclear blast that destroyed a third of America. That I am sure is too much extrapolation. There have been some very good studies made on the reaction to disaster. The first studies that come to mind were the bombing surveys that the Air Force made after World War II, both in Germany and Japan, based upon careful interviews with many thousands of people who experienced some of those raids. There were similar studies made in England at the time of the bombings of London.

Since then there has been a serious effort. The National Academy of Sciences has commissioned a study in which teams of social scientists have been sent out to disaster points. For example, up in my country there was a tornado at Worcester; and within a very short time a couple of social scientists and psychologists showed up there at Worcester and began interviewing people according to a plan to try to find out something about reactions. And there have been about twenty disasters in the United States since the war.

This is being written up now. It has been written up in terms of individual accounts of reactions to it. I don't think we are at a very good stage yet in trying to generalize this. I don't know of any better way of approaching it, though, than to approach it from a study of conditions under which panic seems to appear even in these small catastrophes.

Now, the trouble is in extrapolating from this to such an unthinkable event as would be involved in a massive thermonuclear attack. Of course I don't think anybody can really answer that question.

QUESTION: Sir, in connection with your examples of the hybrid corn and the doctors you mentioned four groups--the initiators, the influentials, the followers, and the die-hards. And you gave us some criteria so that you could identify the initiators in this sort of thing. In your studies did you find out any pertinent criteria regarding the influentials? It seems to me that this would be the most important element of this quartette. I think most of us would like to be influentials if we could.

DR. STOUFFER: We find something about the role of the influential--that it's perfectly clear that he is following to some extent Polonius's advice, "Be not the first by whom the new is tried, not yet the last to put the old aside." I don't know which way it goes, but something like that.

Yes. I don't think there are enough studies to generalize too far on this. But the thing is that we are inclined to think here that in many roles a person will be an influential and in other roles he won't. He's going to choose those. We find those in a community.

Now, I have been making myself some studies of local community leadership, where I am interested in how local communities reach a decision on some kinds of public issue. We seem to find there the same kind of pattern--of the agitator, as it were, the person who gets hot and bothered and really works like the dickens to stir up sentiment in favor of a new school, in favor of the fluoridation of water, or something like this. And this person usually is not necessarily a person with a great deal of influence. It may be some woman who is in the Parent Teachers Association and maybe is going through the menopause and at this particular moment gets all agitated about something. But, whatever the case, I want to say, you can't say that woman or that person isn't important. This role has to be played.

Now, the influential is a little more likely to be a person who has a limited amount of capital of influence to expend and is very much concerned to expend his capital of influence wisely. I think the model that we are using here is very much like the one of finance. And in a particular post you, as an influential, have to decide how you are going to spend it. You are not necessarily going to husband that so you don't spend anything. That might be a terribly poor way of investing your money. You would be a miser. But you want to invest it at the right time, so that you have a sense of timing. You are going to have some sense here of when it's most likely that, if you do take a stand on this, it will count.

Now, another thing is that because of this principle of not wasting

resources, you don't take a stand on a lot of issues that you might personally be in favor of. But you wait your turn, as it were, to fight for the big things. We see this again and again in local community leadership.

For example, on the issue of the study of the fluoridation of water, we find that most intelligent people are in favor it it. But it's a hot subject, because there are quite a number of fanatics and some very sincere people, like Christian Scientists, who are opposed to it. There are also a lot of wild and uneducated people. It's just so hot a subject that we find that the influentials in many of these communities take a very noble stand. They say, "This should be decided democratically. Let the people decide here in referendum, and whatever the people decide I will go along with." And they won't communicate their position.

Now, that's all right, because this way they are not jeopardizing their prestige on an unimportant issue; and they can save their influence in order to work on an issue that really is important to them, such, perhaps, as changing the method of assessment in the community or the tax rate or something of that kind.

QUESTION: Have you observed or is there any evidence to support this claim that leaders are born and not made?

DR. STOUFFER: I don't know how one could ever study that, because all leaders start out as helpless infants and are subjected to such a vast amount of training that it is impossible, of course, for any person to say that there is not a fantastic amount of influence in terms of sheer

training. There is.

On the other hand, there is also no doubt that some people, even as boys, let's say, in a playground, seem to develop certain habits which they get rewarded for and which enable them to be more skilful in getting other people to do things than some other boys do. Now, where they get this, it's impossible in any given case to say, because of the many, many different kinds of influences that play on them. Most psychologists and sociologists are probably biased in thinking that much of it is learned, but where it's learned they don't know.

On the other hand, there is no doubt that some people do start with advantages of intelligence which probably are traceable to various combinations of genes. And in that sense, insofar as this intelligence becomes important, one can say that they are born.

I think the nurture problem is of less concern today to most people than it was twenty or thirty years ago. That is, the human organism is so helpless and so plastic and so pliable, so much can be done to it, that we don't have to worry too much about the variation here in inherited skill, particularly when we are talking about a subject like leadership. Now, if we are talking about musical genius or something like that, we are on more difficult ground.

QUESTION: Dr. Stouffer, the cold war has frequently been referred to as a battle for men's minds. What can the social scientists do and what have they done to help us win this cold war?

DR. STOUFFER: I am not privy to some of the files of the

Defense Department on this subject. I have for a number of years, of course, been interested in this field. I don't know that I really can answer your question as to what they have done. They have done an awfully lot less, probably, than they should have done.

One of the things, of course, that is important is the sheer collection of certain kinds of information about how people in different parts of the world react. This is a job that the anthropologist in particular is able to contribute to. The Army, to its great credit, it seems to me, spent several million dollars in--and again I mention this school, Yale--in subsidizing what is called the human relations area files at Yale, in which it made a serious effort here to collect, and not only collect, an enormous amount of information about the way people react, let's say, different kinds of people in Afghanistan or different kinds of people in Nepal, and so on, but also to organize it and index it in such a way that the information can be gotten very quickly. This was done, of course, during the war with respect to trying to get information about the Pacific Islands that were about to be invaded, and to get this information organized so you could pull it quickly, and know what snakes there are and this or that. So, similarly, there has been a great deal done by way of organizing and making available this kind of information.

Some of this has been written up for certain countries in two forms--in a form generally for the public, and then in classified form, in which some effort has been made to show the significance of some of these things from a possible military standpoint.

In the larger issue, which I am sure you are more interested in having me comment on, I don't think I've got much to say in any real expert capacity. My feeling is, and that of those people I am with, that there is kind of a mistaken notion, somehow or other, that propaganda in itself is a pretty effective thing. In general I think most of us are inclined to doubt that. Propaganda is very important, but it's only important if it's plausible. It's got to be plausible. The problem here is one of plausibility, and the important things that make propaganda plausible are deeds and actions which are visible and symbolic. And that's where the Russians have done an awfully good job on the one hand and a very poor job on the other.

I would say, for example--and I don't know whether this is a popular thing to say in a group of military people--but I would say that it is perhaps of real military importance that we do a better job in space than the Russians do, because of the psychological significance of Lunik and so on all over the world. That is, this becomes symbolic and then it makes it possible for their propaganda to be accepted because there is an element of plausibility here presented by successful efforts of this kind. And this can be of tremendous importance from a military standpoint.

I think there has possibly been some tendency, if what I read in the papers is correct, to feel that whether we hit the moon or don't hit the moon has no military significance at all. This may be a mere matter of definition, but I would say that it has tremendous significance from the

standpoint of its impact on the uncommitted world, primarily because in the uncommitted world the propaganda itself doesn't count, but it's the propaganda as it ties in here with visible, proved success. Similarly I would say that the Chinese couldn't have been stupider in their relations with India than in some of the things they are doing now. All the propaganda they want to put in aren't going to compensate for the facts in the situation.

So the only comment I would really make is that propaganda has to be related to facts; and one fact which to some of us is pretty important is the fact of having a powerful enough rocket to push our instruments around in outer space as a fact. You don't have to agree with me.

QUESTION: Doctor, we hear from time to time that the social scientists are being slighted from the standpoint of research funds support as compared with the physical and natural scientists. Assuming you agree, do you feel that it's the place of the military departments to increase their support to the social scientists even if it means a reduction in the support of the physical scientists or the natural scientists?

DR. STOUFFER: That's a loaded gun. I'm not going to turn it on myself and say I don't agree with it.

Let me make one point here--that there is a good deal of social science research going on which may not be called psychologicial research, or which may not be called social science research. Much of the work that is going on in the field of human engineering, in studying experimentally man's capacity to endure this or that, is

of the utmost importance; and the Armed Forces are doing a great deal about it. And this I cannot but help thinking is very important.

Now, the study of man's social organization is, I think, allied quite a little bit; and I don't think the Army or the Navy or the Air Force has begun to spend enough money on this sort of thing. Some of this could be very practical. I would mention to you the work of the human relations research outfit of the Army--Hum-rel--at American University. Hum-rel has developed training programs in several different areas. One, for instance, is for a tank crew, in which they were able to demonstrate that they could reduce the training time by 50 percent by applying some thoroughly reputable principles of learning to the training of the tank crew--could reduce the training time by 50 percent and get better demonstrated performances out of these crews in half the time than they got before.

Now, this sort of thing can be done all over the place, by taking apart the training process into components, trying to study each of the components in it, and then putting them back together again. This kind of thing has immediate pay-off value. This isn't blue sky stuff at all. In this area I just don't think there is any question that more money should be spent in all of the Armed Forces--on the training end.

I think also that there is room for continuing and increasing expenditures in trying to predict the performance of personnel in given kinds of situations, and to help in the appropriate allocation of people to the kinds of roles they can perform best. Actually, a great deal has

been done in all the Armed Forces on this, just as it has been in industry. But we've got a long way to go. And I think there isn't a question here of taking money away from the natural sciences and putting it into this. It is a question of spending some money to save some money--money which otherwise would be wasted, because of manpower which is being wasted or misused. But I am biased. You can find other people who will give you other answers.

QUESTION: It seems to me that the more you find out about these things, the more trouble you get into. For example, the next conference I go to, I want to find out who the moderator is, to see if he's gotten together with the initiator. It seems to me that when a person gets the feeling that he's being manipulated, he may take Kentucky windage on his behavior. How does this affect the value of your research?

DR. STOUFFER: That's a good question. I don't know what Kentucky windage is, but it's a very good question. There have been books written on this subject. Some of you have probably seen a book by Vance Packard called "The Hidden Persuader," in which he takes Madison Avenue apart for using often very good scientific procedures to find out about human wants so they can sell breakfast foods better.

Well, now, surely; there is a danger that any of the findings of

social science can be misused. And they certainly are often being misused by Madison Avenue. I think they are often wisely used by Madison Avenue in many cases. And our economy owes a great deal to the relatively efficient production and the mass production that advertising and so on makes possible. And much of this wouldn't be possible if it were not for the application of very good social science research. I wouldn't want to say this to you, but I would guess that there are many, many millions of dollars being spent in New York on direct sociological and psychological research. A lot of good research is being done.

But there is this basic problem, which can be best illustrated by the stock market--that if you had developed laws which enabled you to predict the stock market, the laws wouldn't be any good as soon as they were enunciated. That is, you would have to modify them right away. You can see why. So I think to some extent that is going to be true with the social sciences. I think we are too far away yet for anybody to worry about it, but I think that to some extent it is probable that if people become very sophisticated about what's going on in some cases, this will change some of the parameters in our study, and we will have to start in modifying this as time goes on. I am not worrying about that time arriving yet.

I am worried about the ethics of the use of social science; but, gentlemen, I think one has got to worry about the ethics of the use of science in any field. Science is not a moral matter. Science is an

amoral matter--not immoral but amoral; and the same poison that can be used to kill bugs can be used to murder one's wife.

QUESTION: In your study of the behavior of human beings, and related to the question on the reactions of the American public in the case of nuclear warfare, I have had the occasion at least two times in my life to observe in a group that was subject to disaster that the females in the group reacted calmer, with more objectivity, and better than the males in the face of this disaster. Have your studies shown that this is a fact, or was this just coincidence?

DR. STOUFFER: I haven't made any such studies. I don't know. I can't answer the question. In the case of a sinking ship I think the women ought to feel calmer, since they are going to get saved first.

QUESTION: On these four classes of people that you have identified, one of us said we all want to be in the influential class, and asked how we define or identify that particular class. Your answer was that you can't very well do it, because that particular class is selective; that sometimes they are influential on one subject, depending on what their particular interest or economic situation may be. Isn't it also true that that occurs in the other classes too? Isn't a man who is influential in one field apt to be a real die-hard in another depending upon his particular interest or the economic forces that are playing on him, or social forces, at the time this issue comes up? And should we really be interested in getting in the influential group, or should we--in line with the television play--be a thinking man and pick our groups depending

upon the subject?

DR. STOUFFER: I suppose that if one thinks in terms of one's occupation or one's career, one probably does feel that in that particular situation he wants to occupy a role which would be influential. I think it's perfectly true that you may decide as a citizen of your community that you are really not going to be particularly interested in whether or not you are active in community affairs, and you decide not to be. You may decide, however, that you are interested in your church and that you would like to help make that church stronger. So you become a senior warden or a member of the official board or something or other in the church.

Well, of course that's true. And I suppose there are some people--and let me make my point clear on this--what I've been trying to say is that I think we are more and more becoming interested in roles that people play rather than in the choice of those who play them, because of this interchangeability of parts and the fact that people are in different roles. And so the studies are turning more and more to a study of what are the requirements in a particular kind of role rather than asking, What are the psychological traits of a person who is in that role?

However, I think we can carry that a little too far. We've got to be careful. That is, there are some people who acquire prestige in one role such that in almost any role they are in they are deferred to and what-not. I can well imagine that a person, let's say, who has the rank of admiral is going to have some prestige that is going to rub off

on an awful lot of other things that he does as a citizen in a community. And that would make him, perhaps, whether he wanted to be or not, in some cases more of an influential than not. That's possible.

But I think the thing that is important here is to suggest that in this role behavior there is an awful lot more interchangeability than I think we used to think or say. You see, we used to talk about what kind of traits does a leader have that will make him most successful. That seems to me almost futile.

QUESTION: I have a question that pertains to the delicate art of compromise as you mentioned in your example of the school superintendent. It seems to me on the one hand that we have the disciplines of science --above all, be true to the facts. On the other hand, if we take the results of social science, it says that the person who is going to succeed is the person who is going to compromise. In other words, he's ready to give up these principles that he has been led to believe and have faith in. Is this sort of the rationale of perhaps never having a scientist as president, or is this sort of the rationale that those people who are going to be our leaders are in fact going to be our politicians because they more readily do that type of thing?

DR. STOUFFER: I think this is a very good question you are asking me, one that is profoundly important. The scientist as a scientist has no choice in his role as a scientist but to stand for whatever the truth is, however much it hurts other people and so on. That's the morality of the scientist.

And usually he isn't in too much of a conflict on that. Sometimes

the scientists do have conflicts. The people in Los Alamos were in a conflict. Should they make this bomb or not? And should it be dropped if they made it? And you know how the physicists protested about it. There come times when there is real conflict. But most of the time the scientist isn't in much of a conflict.

The person who is in conflict is the man whose primary work involves moderating in human relations, working with an organization. Let's say any executive. He is certain to be in a variety of conflict situations. Now, note this: These are not necessarily conflicts between right and wrong. It's more like the Greek tragedy, which is not a melodrama, but a conflict between two rights, neither of which can be satisfied. One of the officers up here mentioned "Advice and Consent," which I think is a wonderful book. It illustrates, of course, beautifully the kind of conflicts and compromise which are the very essence of the art of the possible.

Now, it's, of course, immoral, I suppose, to talk about giving up one's principles. But the thing one has to realize--and, I think, more and more in here, that we can see in this thing--is that it isn't really a question of right versus wrong. It's a question of two rights in so much of this.

Think in terms of interservice rivalry and the implications of this in the Defense Department. As I see it, it is perfectly possible for a person to be in a ghastly conflict, in which he feels an obligation to the service of which he is a member and in which he is going to receive

his future promotion, and in which he also feels an obligation to some kind of principle which may be enunciated by the Defense Department. In the course of this he can be in a very, very tough spot. And yet his decision here is a case of choosing between two moral decisions, and much of the time that's what our problem is. It makes life tough. But, gentlemen, you chose to be in a job that has its tough elements.

QUESTION: I have read that progressive education is allegedly an assembly line that produces well-adjusted robots. Would you care to comment on that?

DR. STOUFFER: I don't agree with whoever said that. I would think it would be quite the contrary, because progressive education at least seeks to encourage a person to pursue his own whim and says that you have a right to be different. Whereas the opposite of that is to force a person by the most rigorous drill into learning something because it's the right thing to learn, not because this person wants to learn it.

Now, I happen to be a ~~xxxxxx~~ teacher of statistics, among other things, and I wish we had a little less progressive education when it comes to teaching the multiplication table. But I think there is a need for real, solid drill even if people hate it. But at the same time I can't accept at all an aphorism like this one, because I do believe that in general it is true that you create more diversity and less uniformity if you enable children to follow, up to a certain point, the whims that they've got, at least to the extent of trying to get them interested and motivated in doing things, and doing things differently. And the better

of the progressive schools, I think, do that. I think there's a lot of myth on this subject that needs to be exploded.

COL. BATTE: Dr. Stouffer, your interesting lecture has given us much to think about. We are indeed appreciative of your taking time from a busy schedule to come down here and share your interesting experiences and thoughts with us. The past 90 minutes for us have passed all too rapidly. Thank you, sir.

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