SOCIALLY RELEVANT SCIENCE:
REFLECTIONS ON SOME STUDIES OF INTERPERSONAL CONFLICT

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FROM the onset of my career in social psychology, I have been continuously concerned with the interrelations among experimental research, theory, and social policy. I started my graduate study not long after Hiroshima and Nagasaki and my work in social psychology has been shadowed by the atomic cloud ever since. I have taken this occasion as an opportunity to force myself to reflect on several of my research studies and how they have been affected by images that have arisen out of my concern about the possibilities of nuclear war. In so doing, I seek to explore a few of the issues in the phrase "socially relevant science."

Before turning to a discussion of some recent research, let me consider two early studies of mine, "An Experimental Study of the Effects of Cooperation and Competition upon Group Process" (1949a) and Interracial Housing (Deutsch & Collins, 1951). The study of cooperation and competition was initiated under two major influences, one of which shaped its substantive focus and the other of which determined its form and its scientific goals. The substantive focus grew out of my concern about nuclear war. Like many others at the time, I thought that mankind would not long survive unless the nations of the world cooperated with one another. This thought got focused on the United Nations Security Council and was crystallized in two contrasting images: the members of the Council working together cooperatively with a problem-solving attitude or the members competing with one another to obtain a relative advantage for their own nations. I suspect that my initial concern crystallized this way be-

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because the United Nations Security Council was in the public spotlight and also because I was then a student at the Research Center for Group Dynamics at M.I.T. There it was natural to think of group process and group productivity and of factors influencing them.

As my attention shifted from the relations among nations to relations within a group, the problem took on a more generalized form. The problem was now transformed into an attempt to understand the fundamental features of cooperative and competitive relations and the consequences of these different types of interdependencies in a way that would be generally applicable to the relations between individuals, groups, or nations. The problem had become a theoretical one with the broad scientific goal of attempting to interrelate and give insight into a variety of phenomena through several fundamental concepts and several basic propositions. The intellectual atmosphere of Kurt Lewin’s Research Center for Group Dynamics was such as to push its students to theory building. The favorite slogan at the Center was "there is nothing so practical as a good theory."

Thus, I turned my social concern about the possibilities of nuclear war into a theoretically oriented investigation of cooperation and competition. In so doing, did I lose contact with my original concern? Is there any relevance, at all, of a theory of cooperation and competition and an experimental study of small groups to the prevention of a nuclear holocaust? Before answering this question, let me state that my tendencies to grandiosity, although not insignificant, are under control. I have never thought that any efforts of mine, whether as a scientist pursuing systematic knowledge or as a citizen engaging in political action, would be a crucial factor in influencing the likelihood of such large-scale events. Nevertheless, I have maintained the hope that the cumulative efforts of many individuals pushing in the same direction may have significant effects. In addition,
I have assumed that the acquisition and dissemination of systematic knowledge is inherently of social value: Misjudgment, evil, corruption, and the abuse of power are abetted by ignorance, but are reduced by the dissemination of knowledge.

Thus, I have hoped that my intellectual work on cooperation and competition combined with the work of other social scientists on related problems might significantly affect ways of thinking about these types of social relations and that, as a consequence, systematic, and possibly new, ideas about preventing destructive conflicts among nations might emerge. If anyone wishes to accuse me of being optimistic, of course, he would be right. After all, my initial theoretical and empirical work in the area of cooperation-competition centered on the differential effects of these types of relationships. Only later did I work on the factors influencing whether a cooperative or competitive relationship would develop. This later work (which has been described under such tags as "interpersonal conflict," "bargaining," "conflict resolution") is much more directly related to the question of preventing destructive conflicts. Yet, it turns out that one of the major simplifying ideas about factors affecting conflict resolution arising out of my more recent work complements my earlier theoretical analysis of the effects of cooperation and competition. Namely, the characteristic processes and effects elicited by a given type of social relationship (cooperative or competitive) tend also to elicit that type of social relationship. Thus, the strategy of power and the tactics of coercion, threat, and deception result from and also result in a competitive relationship. Similarly, the strategy of mutual problem solving and the tactics of persuasion, openness, and mutual enhancement elicit and also are elicited by a cooperative orientation.

Table 1 presents in condensed, outline form some of the basic ideas involved in my analysis of the effect of cooperation and competition. In essence, the theory states that the effects of one person's actions upon another will be a function of the nature of their interdependence and the nature of the action that takes place. Skillfully executed actions of an antagonist will elicit rather different responses than skillful actions from an ally, but a bumbling collaborator may evoke as much negative reaction as an adroit opponent. The theory links type of interdependence and type of action with three basic social-psychological processes—which I have labeled "substitutability," "cathexis," and "inducibility"—and it then proliferates a variety of social-psychological consequences from these processes as they are affected by the variables with which the theory is concerned. I shall not attempt here to spell out how this is done. The theory has been published (Deutsch, 1949b, 1962a), and my interest in this presentation is on the conditions determining the initiation of cooperation and competition rather than upon their effects.

The point I wish to make is that if you take a situation in which there is a mixture of cooperative and competitive elements (most bargaining, "conflict" situations are of this nature), you can move it in one direction or the other by creating as initial states the typical consequences of effective cooperation and competition. In such indeterminate situations, the tendency to relate cooperatively will be increased by anything that will "highlight mutual interests," "enhance mutual power," lead to "trusting, friendly attitudes, and a positive responsiveness to the other's needs," "minimize the salience of opposed interests," lead to "open, honest communication," etc. On the other hand, the likelihood of a competitive relation will be increased by attempts to "reduce the other's power," "suspicious, hostile, exploitative attitudes," "the magnification of the opposed interests," the use of tactics of "threat, intimidation, or coercion," "devious communication and espionage," etc.

I have attempted to express an idea that is still in a rudimentary stage of intellectual development. If it is nurtured carefully, it may have considerable sweep and may help us to deal with social conflict productively rather than destructively. However, the theoretical and empirical work being done on the resolution of conflict reflects the intellectual efforts of many social scientists from a variety of disciplines, and by my emphasis on my own work I do not wish to give a misleading picture of the unique significance of my contributions. My own work is only a small part of the total scientific activity in this area, and it is the cumulative results of these diverse efforts that are beginning to have social utility.

Initially, the major utility of these cumulative efforts has been in the emergence of a mode of thinking with an array of concepts that highlight some of the central processes involved in conflicts.
TABLE 1

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<tr>
<th>Type of perceived interdependence between P and O</th>
<th>Type of action by O</th>
<th>Effects of O’s actions on P</th>
<th>Some theoretically expected consequences of an exchange of efforts actions between P and O in cooperative and competitive relationships</th>
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<tr>
<td>Cooperative: P’s and O’s goals are linked in such a way that their probabilities of goal attainment are positively correlated; as one’s chances increase or decrease so does the other’s chances.</td>
<td>Effective: (O’s action increases O’s chances of goal attainment and, thus, also P’s.)</td>
<td>Positive substitutability: P will not need to act to accomplish what O has accomplished. Positive cathexis: P will value O’s actions and will be attracted to O in similar, future situations (i.e., as a fellow competitor). Positive inducibility: P will facilitate O’s actions and be open to positive influence from O.</td>
<td>Task orientation: Highlighting of mutual interests; coordinated effort with division of labor and specialization of function; substitutability of effort rather than duplication; the enhancement of mutual power becomes an objective. Attitudes: trusting, friendly attitudes with a positive interest in the other’s welfare and a readiness to respond helpfully to the other’s needs and requests. Perception: increased sensitivity to common interests while minimizing the salience of opposed interests; a sense of convergence of beliefs and values. Communication: open, honest communication of relevant information; each is interested in accurately informing as well as being informed; communication is persuasive rather than coercive in intent.</td>
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<td>Ineffective: (O’s action decreases O’s chances of goal attainment and, thus, also P’s.)</td>
<td>Negative substitutability: P will need to act to accomplish what O has failed to accomplish. Negative cathexis: P will reject O’s actions and will reject O in similar, future situations (i.e., as a fellow competitor). Negative inducibility: P will hinder O’s actions and be negatively influenced by O.</td>
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<td>Competitive: P’s and O’s goals are linked in such a way that their probabilities of goal attainment are negatively correlated; as one’s chances increase, the other’s chances decreases.</td>
<td>Effective: (O’s action increases O’s chances of goal attainment and, thus, decreases P’s chances.)</td>
<td>Negative substitutability: P will need to act to accomplish what O has accomplished. Negative cathexis: P will dislike the occurrence of O’s successes and will reject O as a future competitor. Negative inducibility: P will hinder or block O’s actions and react negatively to O’s influence attempts.</td>
<td>Task orientation: emphasis on antagonistic interests; the minimization of the other’s power becomes an objective. Attitudes: suspicious, hostile attitudes with a readiness to exploit the other’s needs and weakness and a negative responsiveness to the other’s requests. Perception: increases sensitivity to opposed interests, to threats, and to power differences while minimizing the awareness of similarities. Communication: little communication or misleading communication; espionage or other techniques to obtain information about the other unwilling to give; each seeks to obtain accurate information about the other to mislead, discourage, or intimidate the other; coercive tactics are employed.</td>
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<td></td>
<td>Ineffective: (O’s action decreases O’s chances of goal attainment and, thus, increases P’s chances.)</td>
<td>Positive substitutability: P will not need to repeat O’s mistakes. Positive cathexis: P will value the occurrence of O’s failures and will prefer O as a future competitor. Positive inducibility: P will facilitate O’s blunders and be ready to help O make mistakes.</td>
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and that provide a coherent basis of organizing the details of such processes. This has served to reduce the mystical aura of the inevitability of destructiveness often associated with conflict, it has provided new insights to many people engaged in the handling of conflict, and it has occasionally been reflected in important public statements. Thus, the historically significant speech of President Kennedy at American University on June 10, 1963, in which he outlined “A Strategy of Peace,” and which signaled the start of a thaw in American-Soviet relations, was clearly very much influenced by the newly emerging social science mode of thinking about resolving conflict. More recently, the
Kerner Commission Report on riots also was enlightened by this new perspective. Under the leadership of such applied behavioral science groups as the National Training Laboratory Institute for Applied Behavioral Science, there has been a widespread application of social-psychological approaches to conflict resolution in industrial and school settings.

Let me now turn to a rather different type of study, our study of interracial housing. Like the work on cooperation-competition, it was stimulated by the belief that "the social scientist has a responsibility, not merely to further his own esthetic and intellectual pleasures in the course of research but also to contribute to the solution of important social problems [Deutsch & Collins, 1951, xi]."

However, the interracial housing study, unlike the earlier one, was guided throughout by a continuous concern with social usefulness. We selected interracial relations in housing for investigation because we felt that residential segregation was of central importance to intergroup relations in general. Residential segregation by its very nature leads to a de facto segregation in many other areas such as schools, churches, banks, playgrounds, and shopping and community centers. It also usually leads to major economic disadvantages for the ghetto resident. Another reason for the focus on housing, with a particular emphasis on a comparison of integrated and segregated occupancy patterns, was the realization that the Federal Housing Act of 1949 would soon give rise to many public housing developments. Public officials in localities throughout the country would be making decisions in the near future about whether these developments would be racially integrated or segregated. (The usual practice in the past had been some form of segregation.) It was our hope that our research might have some influence on these decisions.

Our study compared integrated interracial housing developments in New York City with segregated biracial developments in Newark in an ex post facto experimental design. The developments were selected to be as comparable as possible except for their occupancy patterns. We studied behavior and attitudes of blacks as well as whites, of adults as well as children. As in all such ex post facto field studies the design was not as tight as one would like, but we did a reasonably careful job of seeking a variety of evidence to test the various alternative explanations for our findings. Our findings, from many different angles, supported the conclusion that "from the point of view of reducing prejudice and of creating harmonious intergroup relations, the net gain resulting from the integrated projects is considerable; from the same point of view, the gain created by the segregated bi-racial projects is slight [Deutsch & Collins, 1951, p. 124]."

The study and its findings were widely discussed by public housing officials and by community groups and helped a number of housing authorities to adopt a policy of nonsegregation. The Executive Director of the Housing Authority of the City of Newark, for example, wrote in a postscript to the study:

In supplying us with an objective picture of race relations in our projects, a picture which is faithful to our own impressions, their study dramatically focused our attention and that of the community at large on matters which, under the press of other business, we had tended to ignore. The study did more than help to focus attention on the basic question of segregation in housing. Perhaps its most important consequence was its usefulness to those community groups concerned with intergroup relations and civil rights. . . . To such groups the study was an invaluable tool in creating the atmosphere which made it possible for the housing authority to adopt and execute a policy of nonsegregation. I don't know how many meetings of such groups I attended, but invariably the Deutsch-Collins study was referred to and quoted [Deutsch & Collins, 1951, p. 130].

Clearly, then, our study of interracial housing had some immediately useful and significant social consequences. In addition, it served to challenge a widely held opinion that "stateways cannot change folkways," which, not surprisingly, was usually interpreted so as to support the status quo rather than a change in "stateways." Thus, it helped, along with much other research, to provide a supporting rationale for judicial decisions and legislation to bar segregation.

However, I must admit that this research did not contribute significantly to the ideas of social psychology. Intellectually, its merit did not reside in its theoretical innovativeness but rather in its systematic application of existing social-psychological concepts to the important social issues of residential segregation. This is not to say that there is not a need for new ideas and theoretical advances to clarify and develop systematic understanding of intergroup relations. Indeed, some
of our current experimental research has this as an objective. But I must confess that as we begin to explore some of the conceptual underpinnings in this area we are pulled in the direction of considering such questions as the relationship between social categories and social coordination. It takes us away from the immediate social urgencies.

Our housing study was not formulated with a theoretical objective and, unfortunately, we were not alert enough to appreciate fully the wider theoretical significance of some of our findings. These findings suggested that behavior change preceded attitudinal change: The white women in the integrated projects often behaved in an unprejudiced manner toward their Negro neighbors before they felt this way. Had we been clever enough to realize the general implications of this finding we might have anticipated the major idea underlying Festinger’s theory of cognitive dissonance, which is in essence the converse of the old truism that people tend to act in accord with their beliefs. Namely, people tend to make their beliefs and attitudes accord with their actions. This is a very important idea that has major implications for theoretical and practical work in the area of attitude change. This idea could have emerged from our field study of interracial relations in housing but, alas, it did not.

If now, many years after the completion of each of the two studies (Interracial Housing and “An Experimental Study of the Effects of Cooperation and Competition upon Group Process”), I try to assess their social utilities relative to one another, what conclusion seems warranted? Both studies have received considerable recognition within social psychology and both have been honored by being selected for inclusion in Basic Studies in Social Psychology (Proshansky & Seidenberg, 1965). However, I clearly have a personal preference that I should confess before attempting to answer the question. My work on cooperation-competition gives me more satisfaction and I have more pride in being its author. The ideas in it are more original and more fundamental to understanding social life irrespective of time or place than the ideas in Interracial Housing. Nevertheless, I cannot point to any specific desirable social change that has resulted from my work on cooperation-competition. Whatever social benefits have derived from it have come indirectly through its contribution to the stream of ideas being developed cumulatively by the social sciences that are leading to new perspectives on conflict.

Interracial Housing, on the other hand, has made little new contribution to the ideas of social science, but it has clearly contributed to desirable social change in several instances. However, let me note the obvious. Despite our study and the work of many other social scientists that have demonstrated the social and personal value of racial integration, there is little racial integration in the United States. The available statistics indicate that there is more de facto residential segregation in the United States now than there was 20 years ago. Similarly, as Pettigrew (1969) pointed out: “There is more racial segregation of schools today in the entire United States than there was in 1954 at the time of the Supreme Court decision [p. 4].” With the repeated and continuing frustration of attempts to break down the walls of custom, belief, and institutionalized practice that keep blacks and whites segregated, it is no wonder that the achievement of racial integration is now of less relevance than the enhancement of black power. As far as one can tell, there will be no meaningful racial integration until the economic and political power of the black people, and their white allies, is strong enough to shatter the walls of institutionalized indifference and discrimination that perpetuate their isolation and disadvantage. Black pride, cohesive black organization, and effective political alliances are keys to the enhancement of black power; chauvinism and separatism, on the other hand, provide a fragile, illusory, and inherently self-defeating basis for group- or self-esteem. Thus, although in my opinion the findings and recommendations of our study of integrated housing are still valid—integration is still preferable to segregation, history has turned a study that once seemed highly relevant into one that now appears to be somewhat beside the point.

Whatever its changing relevance for immediate social concerns, it was not inevitable that the housing study be lacking in theoretical significance; as I suggested earlier, had I been more keen-witted I might have anticipated the key notion of dissonance theory. Similarly, the study of cooperation-competition need not have been without immediate social consequence. It was conducted in an experimental format that incidentally involved a systematic comparison of two types of classroom grading systems: cooperative and competitive. The
results clearly demonstrated some harmful consequences of the competitive grading system and they could have been employed in a campaign to reexamine the prevailing system of grading. Such a campaign was not in existence nor did the thought of fostering one occur to me.

Thus, the potential usefulness of each study was unduly limited by "blinders" I had donned unwittingly. In thinking of the cooperation-competition study as a theoretical inquiry into fundamental issues, I overlooked its immediate social significance. And in conceiving of the interracial housing study in terms of its immediate social relevance, I was insensitive to its broader implications. I am inclined to believe that the "blindness" reflected in both instances is not unique to me but is commonplace in psychology. Psychologists doing research on how to improve the learning of a particular subject matter in the classroom rarely make significant contributions to learning theory, and those seeking to test theoretical notions rarely conduct their research in such a way as to suggest immediate consequences for learning in the school.

Obviously, "blinders" have functions: They reduce distractions and facilitate focused attention. Yet, if worn too long, they limit the scope of vision; a broad perspective is necessary to a socially relevant science. A focus on "science" that excludes "social relevance" as a distraction or on "social relevance" that excludes "science" as irrelevant will in the long run be destructive to both. A society will not long nurture a science that does not nurture society. Nor will there be much to nourish society with unless there is a proliferation of systematic knowledge that is rich and diverse enough to initiate and reliably sustain complex activities in many different settings.

Let me now return to the question of the comparative social utilities of the two studies I have discussed. It should be obvious that there is no simple answer. Both types of studies are needed for a socially relevant science. Moreover, a rigid characterization of the kinds of studies into sharply different categories may be dysfunctional to both. This is not to deny that the primary social value of a theoretical study such as that of cooperation-competition may be manifest only in the long run while the primary utility of an applied study may be in its immediate social consequences. It is evident that in considering what psychologists can contribute to society, we must be concerned with both the future and the present. In many areas of urgent social concern, we do not have enough reliable, systematic psychological knowledge to make any valid social contribution at present. Some of this knowledge can only be acquired by freely ranging investigations that seek to define and formulate the fundamental questions that must be answered before one can identify what knowledge is really relevant to a solution of a problem.

It is a truism that a demand for relevance makes no sense until one can identify what is relevant. History and everyday experience alike testify that the appearance of relevance, the pseudo-relevance of surface similarities, can be grossly misleading. It is hard and demanding intellectual work to get beyond the clichés and slogans of the "establishment" or the "antiestablishment" to a fundamental and usable understanding of the important social problems confronting us. It requires the freedom to be irreverent and irrelevant to the current idols and the passing fashions. Nevertheless, a salutary concern for social relevance may be a healthy component in the motivation of the work of all psychologists whether they be functioning as researchers, teachers, or practitioners. There may be no long-run future for any of us or for psychology unless some of the urgent social crises facing us are dealt with intelligently. Moreover, whatever little help psychology has to offer now to such situations will be made available largely by the actions of psychologists in attempting to formulate what is relevant in psychology to social action and in psychologists' taking some initiative in helping to get psychological viewpoints implemented in action. Thus, in my view, psychology needs groups like the Society for the Psychological Study of Social Issues and the Psychologists for Social Action in order to make whatever we know as psychologists play an active educational and political role in relation to present social concerns. We also need psychologists who will make the future contributions of psychology to society more valuable by their willingness to investigate unexplored territory with unorthodox methods even as they lack any assurance that their explorations will have any useful results.

I have gone into this long digression (and it has been longer than I anticipated) as an introduction to some of my experiments on interpersonal conflict because I sense a need to defend the fact that
in these experiments the subjects play games. In none do I simulate any particular external reality and, thus, the experiments are not relevant to any given social reality. Yet, I would contend that the unique situations in the laboratory are meaningful, and they permit an economical inquiry into ideas that may be of relevance to many situations in life even though the ideas do not characterize adequately any actual situation of the nonlaboratory world.

**Experimental Studies**

I now turn to a consideration of three experimental studies, one of which is published and two of which are not as yet. I have selected these three studies from many that have been conducted in our laboratory because they all employ the same experimental format and because each started with a concern about ideas relating to foreign policy. All three experiments employ the Acme-Bolt bargaining game, which was demonstrated in one of the APA TV film series, “The Social Animal.”

The bargaining game involves two players, each of whom operates a trucking firm (“Acme” or “Bolt”); each gets paid a constant sum of money minus a variable cost for carrying a load of merchandise from his starting point to his destination. The cost is a function of how much time the trip takes. Each player has two routes to his destination: a short main route and a long alternate route (the routes are displayed in Figure 1). Let me note several characteristics of the routes: If a player takes his alternate route, he will lose at least 10¢ on the trip; if both players take the main route they will meet on the one-lane section of this route and will be deadlocked unless one of them backs down. The players are presented with a very simple conflict. It is to each player’s interest to go through the one-lane section first, in doing so he earns more; if he backs down or waits, he earns less. It is also to their mutual interest to work out some agreement for using the main route since otherwise they may both end up with a loss.

The game, like most bargaining and conflict
situations, contains a mixture of cooperative and competitive features. On the face of it, the bargaining problem is a reasonably simple one. An obvious solution is for the players to agree to "take turns" in going through the one-lane segment of the main route "first." The game took the simple form it did because of the research question I was posing: "What are the factors which affect the ease or difficulty with which bargainers conclude an agreement, when an obviously fair agreement is available?" This question is part of my broader interest in what determines whether a conflict will be resolved cooperatively or competitively.

The Effect of Threat

Our first bargaining study was concerned with the effect of threat (Deutsch & Krauss, 1960, 1962). The study grew out of my concern with some of the psychological assumptions underlying the concept of "stable deterrence," a notion that was quite fashionable among political scientists and economists connected with the Defense Department in the late 1950s and early 1960s. There are two components to this notion: "stability" and "deterrence." "Stability" is obviously preferable to "instability" in weapon systems. Clearly, it is better not to tempt a surprise attack by possessing arms that are vulnerable to attack nor it is safe to have weapons that can be readily fired as a result of accident, misunderstanding, or insanity. Unfortunately, any critical examination of the arms race or of the systems for controlling weapons and making decisions about their use will reveal that there is considerably less stability in the "stable deterrent" than one needs for reassurance.

While the desirability of "stability" is evident, the merit of an emphasis on "deterrence" as an approach to preventing war did not seem so apparent to me. The reliance on the threat of a severe and inescapable retaliation to deter a potential aggressor seemed less preferable to me, for reasons that I have elaborated elsewhere (Deutsch, 1960, 1962b), than the attempt to establish the kinds of cooperative bonds that might reduce the motivation to aggress. In any case, the reliance on threat seemed dangerous to me, under a number of circumstances, a threat may provoke the events that it is trying to deter. One such circumstance is when the threatened party sees the threat as an illegitimate attempt to inti-
legitimate, a negative response to it would be less likely.

From these assumptions, given the conditions of our experiment, we expected that the subjects would use the gates and, in doing so, would strengthen the competitive interests of the bargainers in relationship to one another by introducing or enhancing the competitive struggle for self-esteem. Strengthening the competitive interests would make it more difficult for the players to come to a cooperative agreement about use of the main route, and the consequence would be that they would have lower joint payoffs. We expected that agreement would be most difficult to arrive at in the "two-gate" situation and least difficult in the "no-gate" situation. The results of the experiment clearly support our assumptions (see Figure 2); the joint outcomes were best in the no-gate and worst in the two-gate condition.

A comparison of the outcomes of the two players in the "one-gate" condition indicated that the player with the gate did better than the one without it in the early periods but that he gradually relinquished his advantage so that at the end both players were cooperating optimally (see Figure 3). Comparisons of the two players with and without a weapon in the one-gate and no-gate conditions, respectively, each of whom faced someone with a weapon, indicated that the player with a weapon in the one-gate situation had poorer outcomes than the player without the weapon in the no-gate condition. Similarly, comparisons of the two players with and without weapons, in the two-gate and one-gate situations, respectively, each of whom faced someone with a weapon, indicated that the player in the two-gate condition had poorer outcomes than the player without a weapon in the one-gate condition. In other words, if one member of a bargaining pair has a weapon, you are better off if you are the one who has it; but you may be even better off if neither of you has a weapon.

The results of this experiment have been replicated many times. It also gave rise to a rash of related experiments. Some were attempts to extend the ideas and methods of the first experiment (Brown, 1968; Gumpert, 1967; Hornstein, 1965; Keiffer, 1968; Krauss, 1966; Krauss & Deutsch, 1966; Nardin, 1967; Smith & Emmons, 1969). Some were based on criticisms of it (Borah, 1953; Gallo, 1966; Kelley, 1965; Shomer, Davis, & Kelley, 1966; Shure, Meeker, & Moore, 1963). Elsewhere (Deutsch, 1966), I have detailed my response to some of the criticisms. Let me recapitulate this briefly by listing the criticism and my response:

1. The opportunity to threaten is not always used; moreover, threatening devices are sometimes employed for purposes of coordination rather than threat. These statements are true, but they are not valid criticisms since results such as these would be completely consistent with the theoretical assumptions advanced in the original article, as a careful reading would have revealed. As I have stated earlier, the use of a threat capability is not
inevitable and the likelihood of its use for threatening purposes is decreased as the cooperative elements in the situation are increased. Krauss (1969) obtained this result when he varied the degree of cooperativeness in the Acme-Bolt game. Also, a careful examination of Shure's (1963) research strongly suggests that the use of threats as a coordination device occurred in a markedly more cooperative context than was true of our initial experiment. We also have obtained results, in an experiment to be reported later, that suggest that potential weapons can be used for purposes of cooperative coordination if the context is a relatively cooperative one. However, as results by Nardin (1967) demonstrate: When there is no other way of communicating, "threats" may be viewed as coordination devices, but when it is possible to communicate in some other way threats are likely to be viewed as having a hostile intent and to evoke conflict spirals rather than facilitate cooperation. I believe it is reasonable to assert that although weapons can be used as signaling and coordinating devices under amiable circumstances for cooperative purposes, it is generally safer for bargainers to have signaling devices that cannot be employed as weapons.

2. The obtained differences result from the fact that the gates force the players to take the alternate route if they are competitive, while if the players are competitive in the no-gate situation they are forced to confront one another and work out an agreement. This is an interesting criticism, but it is not consistent with the data. It implies that the subjects in the no-gate condition would spend more time in confrontation on the main route than those in the two-gate condition, especially in the early trials. This does not happen. It also would suggest that if the alternate path were eliminated, there would be no initial differences between the two-gate and no-gate conditions. The results of an experiment by Shomer, Davis, and Kelley (1966) show markedly better outcomes in the no-gate condition in initial trials. As one would expect, these differences are eliminated as the game progresses. The existence of the alternate paths permits the continuation of competition without withdrawal from the experiment as the subjects compete to lose least by withdrawing onto their alternate paths; the elimination of the alternate paths means that essentially they are faced with the choice of cooperating or suffering unlimited losses (which is equivalent to withdrawing from the experiment).
3. The experiment employed trivial incentives, "imaginary money," and the readiness to cooperate would be increased if more important incentives were employed. Gallo (1966) reports an experiment with a matrix game based on features of the trucking game but differing from it in major respects. Subjects played for real or imaginary money of substantial amounts. His results, under real money incentives, indicated that although the gates reduced the outcomes, the subjects learned to cooperate and achieve positive outcomes despite the gates. Under imaginary incentives, the gates produced a sharp deterioration in outcomes. Gallo's results are not consistent with our results in experiments where we have employed sizable real money incentives. Subjects do end up losing real money in the Acme-Bolt game even when they could each earn up to $6 by cooperating. Moreover, in a recent experiment employing the Prisoner's Dilemma (Gumpert, Deutsch, & Epstein, 1969), we found that subjects were more competitive in their play when they were playing for large amounts of real money than for imaginary money. A careful examination of Gallo's procedures suggests that, unwittingly, in the real money condition he may have led the subjects to believe that the experimenter's criterion for good performance might be earning a sizable amount of money but that this was not the case in the "imaginary money" condition. Rosenthal (1966) has demonstrated how easily this type of experimenter effect can occur.

The Rosenthal effect, more generally, suggests that the notion that points and imaginary money are trivial incentives is much too naïve a conception of what motivates a subject in a typical experiment. It is precisely because "doing well" and "being approved and well regarded" by the experimenter may be quite important to the subject that the incentive of earning points is usually not an insignificant one for most subjects. For a similar reason, not allowing oneself to be intimidated in front of the experimenter by illegitimate means (the gate) may also be a strong motivation in the experiment. That is, the insignificant trappings of most laboratory experiments often tap deeply significant motivations because of the symbolic meanings of the behavior in the larger social context within which the behavior occurs. (Parenthetically, let me note that in some research we have used the Acme-Bolt game with married couples who were seen by a psychiatrist after they played the game. It was evident from their discussion in the psychiatric interview that their behavior in the game was seen and experienced in terms of its symbolic significance: What happens in the game is deeply significant and of considerable emotional import to them.)

4. The experiment did not clearly distinguish between the threatening and harmful behavior since the gate could be used for both. This is a valid point but it is equally valid to say the form of threat made possible by the gate—a behavioral equivalent of "I will interfere with you unless you do what I want"—is not an uncommon type of threat. However, I agree that it is useful to distinguish operationally between "threat" and "punishment" as Hornstein (1965), Gumpert (1967), and Keiffer (1968) have done in our laboratory. There are, of course, many other types of threat than the one we employed. Also, there are many other characteristics of threat that were not, and could not, be investigated in one experiment. I list a few: the magnitude of the threat, its cost to employ, its credibility, its precision, its stability, its clarity, the nature of the values being threatened, the relative threat capabilities of the bargainers, the modes of communication available for expressing the threat, etc. These are worthwhile variables to investigate and some are now being investigated.

Though I do not have space here to summarize the results of these experiments, let me indicate the present status of the ideas that gave rise to this research. At the conclusion of our initial study (Deutsch & Krauss, 1960) we wrote:

It is, of course, hazardous to generalize from a laboratory experiment to the complex problems of the real world. But our experiment and the theoretical ideas underlying it can perhaps serve to emphasize some notions which, otherwise, have an intrinsic plausibility. In brief, these are that there is more safety in cooperative than in competitive coexistence, that it is dangerous for bargainers to have weapons, and that it is possibly even more dangerous for a bargainer to have the capacity to retaliate and kind than not to have this capacity when the other bargainer has a weapon (p. 189).

These conclusions still seem valid. Now I would add that, in a cooperative context, weapons can be used to facilitate coordination; but, of course, they are rarely used this way except to start horse races. To avoid misinterpretation, I would stress that a credible, appropriate threat can induce com-
pliancethan to counterthreat and open resistance if the threatened party perceives itself to have considerably weaker punitive power and/or if the threat is perceived to be a legitimate response to one's own inappropriate behavior. (Again, let me note that I would not be "caught dead" in the noncontingent statement that threat is never useful; it should, however, be used with full awareness of its dangers.)

The Effect of Commitment

Such terms as "brinksmanship," "the rationality of irrationality," and "the doctrine of the last clear chance" have been much in vogue among intellectuals who are concerned with formulating a rationale to guide strategic choices in a situation of international conflict. The basic notion underlying these different terms is that a bargainer will gain an advantage if he can commit himself irrevocably so that the last clear chance of avoiding mutual disaster rests with his opponent. A child who works himself up to the point that he will have a temper tantrum if his parents refuse to let him sit where he wants in the restaurant is using this bargaining tactic, as is a driver who cuts in front of you on a highway and appears to be deaf to the insistent blasts of your horn. And so is a nation that says to another nation, as former President Johnson, in effect, told North Vietnam, that our honor as a nation and the sacrifices of our soldiers would not permit a communist take-over in South Vietnam.

It is evident that this type of bargaining maneuver can sometimes be very effective. Yet I wonder, had we not blundered into the atrocities and stupidities of the war in Vietnam partially under the influence of such thinking? Would one expect this type of bargaining tactic to be effective when both sides could resort to it? I also wondered whether it is a ploy that is as suitable for a continuing relationship as it might be for a single, unrepeatable encounter? To investigate these questions, Lewicki and I employed a modified version of the Acme-Bolt bargaining game.

Two basic modifications were made. The game was altered so as to resemble more closely the adolescent game of "chicken" by instructing the subjects that if their two trucks met at any point along the one-way section of the main path, the encounter would be defined as a "collision." If there were a collision, the trial would be terminated; both subjects would then be penalized the amount of time taken from the start of the trial to the time of the collision at the cost of 1¢ per second. (A collision would cost each player at least 20¢.) The second modification entailed introducing a commitment device as a replacement for the gates. The commitment device (called "the lock") enabled the subject to lock his truck into forward gear so that his truck had to move forward. Once locked, the position of the gear could not be altered during the trial, and, hence, the truck was committed irreversibly to moving forward. When a subject used the lock, the other player was informed of this action by a clear, unambiguous signal.

The subjects in all of the experiments described below were adolescent males attending high schools in New York City. They were recruited by advertisements offering them the opportunity to earn up to $4 per hour. Ten pairs of subjects were used in each of the experimental conditions in each of the experiments.

One-Trial game. In this experiment the subjects were led to believe it was a one-trial game; however, following completion of the initial trial, they played an additional trial. In the second trial, the "no lock" pairs became the "bilateral lock" pairs and the bilateral lock became the no lock pairs; "Bolt" got the lock from "Acme" in the second "unilateral lock" condition. They played under instructions to make as much money as they could for themselves regardless of how the other player did. The subjects played in one of three experimental conditions: bilateral lock, both possessed locks; unilateral lock, only Acme possessed the lock; and no lock, neither player possessed the lock.

The results (see Table 2) indicated no statistically significant differences among the three experimental conditions on the first trial although there was a tendency for a lower level of joint outcomes as one moved from the no lock to the unilateral lock to the bilateral lock conditions. In the unilateral lock condition, Acme, who possessed the commitment device, had significantly better payoffs than did Bolt, who possessed no such device.

In the second One-Trial game, there was a significant improvement in the joint outcomes of the pairs in the unilateral lock condition with a reduction in the relative advantage for the player possessing the commitment device. The pairs who were in the bilateral lock condition during the first One-Trial game and in the no lock condition
TABLE 2

MEAN PAYOFFS IN CENTS AND MEAN NUMBER OF COLLISIONS IN THE ONE-TRIAL GAMES AND THE FIRST-TRIAL OF THE TWENTY-TRIAL GAME

<table>
<thead>
<tr>
<th>Condition</th>
<th>No lock</th>
<th>Unilateral lock</th>
<th>Bilateral lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>First One-Trial game</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acme payoff</td>
<td>-9.0</td>
<td>-5.5</td>
<td>-3.8</td>
</tr>
<tr>
<td>Bolt payoff</td>
<td>5.5</td>
<td>-12.1</td>
<td>-12.5</td>
</tr>
<tr>
<td>Acme + Bolt</td>
<td>-3.3</td>
<td>-12.6</td>
<td>-16.3</td>
</tr>
<tr>
<td>Acme ∆ Bolt</td>
<td>-14.5</td>
<td>11.6</td>
<td>8.7</td>
</tr>
<tr>
<td>No. collisions</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Second One-Trial game</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acme payoff</td>
<td>-7.0</td>
<td>2.7</td>
<td>-7.5</td>
</tr>
<tr>
<td>Bolt payoff</td>
<td>4.6</td>
<td>8.1</td>
<td>-8.8</td>
</tr>
<tr>
<td>Acme + Bolt</td>
<td>-2.4</td>
<td>10.8</td>
<td>-16.3</td>
</tr>
<tr>
<td>Acme - Bolt</td>
<td>-11.6</td>
<td>-5.4</td>
<td>-1.3</td>
</tr>
<tr>
<td>No. collisions</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>First trial of Twenty-Trial game</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acme payoff</td>
<td>6.6</td>
<td>4.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Bolt payoff</td>
<td>-1.6</td>
<td>-2.9</td>
<td>9.8</td>
</tr>
<tr>
<td>Acme + Bolt</td>
<td>5.0</td>
<td>1.9</td>
<td>11.8</td>
</tr>
<tr>
<td>Acme - Bolt</td>
<td>8.2</td>
<td>7.7</td>
<td>-7.8</td>
</tr>
<tr>
<td>No. collisions</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Note.—N = 10 pairs of subjects on each condition in each game.

If we compare the results for the first trial (see Table 2) of the Twenty-Trial game with those of the first One-Trial game, it is evident that the bargaining pairs did better when they were anticipating a longer game, the difference being most marked for the bilateral lock condition. Again, there was no advantage for Acme, who possessed the lock, in the unilateral lock condition as compared to Acme in the no lock condition; however, he did better than Bolt with whom he was paired in the one-sided condition.

The overall results were not surprising since the One-Trial game is clearly more competitive in structure than the longer game, which permits an equitable solution of alternation. Although the differences among conditions in the first trial of the Twenty-Trial game were not statistically significant, I was surprised by the relatively favorable outcomes in the bilateral lock condition.

If we examine the overall results for the 20 trials, we find much the same findings as for the first trial: No significant differences in mean joint payoffs among the conditions, but the bilateral lock condition tended to do best; the possessor of the commitment device did relatively better than the other player with whom he was paired in the one-sided condition, but had no advantage over the players in the other conditions; there was some improvement in outcomes from the initial to the final block of trials for all conditions, but it was most marked in the no lock condition. A dominance-submission pattern occurred in only 4 of the 10 pairs in the unilateral lock condition (rarely in the other conditions), the other 6 pairs were characterized by frequent collisions before settling down to an alternation pattern that gave them low but essentially equal outcomes.

It was evident that many of the pairs in the bilateral lock condition used their locks as a device for coordination rather than as a means of committing themselves to obtaining a favored outcome. To test our hunch that the use of the locks as coordination devices occurred because of the relatively cooperative context of the experiment, we checked the postexperiment questionnaire data and also ran a further experiment. (Let me note that I believed the context was more cooperative than in our previous experiments with threat because, in our present experiment, the subjects saw each other and waited together in the same room before they took part in the experiment and they

during the second game improved their joint outcomes considerably while the pairs who shifted to the bilateral lock from the no lock condition worsened their joint outcomes; there was no effect due to sequence.

These results indicated that a one-sided possession of a commitment device provided a relative advantage to the player, comparing him with the one with whom he was paired. There was no evidence that he had any advantage compared with players in the no lock condition, in which neither player had such a device. There was, however, evidence to indicate that when both players were able to publicly commit themselves irresponsibly to "going through first," they did worse than when neither could do so. These were the results for the single encounter for a one-trial game.

Twenty-Trial game. What would happen if the players expect the encounters to be repeated? To investigate this question, we conducted another experiment that completely paralleled the one just described except that the pairs played the game for 20 trials. At the outset they knew that there would be more than 1 trial but they did not know how many until they finished.
could expect that they would leave together after the experiment. In our earlier experiments we had been able to eliminate any prior social contact before the bargaining game.) The questionnaire data indicated that the subjects felt about as much desire to “cooperate with the other player” as to “maximize their own outcome” and very much less desire to “do better than the other person.”

“Chicken” versus “problem-solving” instructions. The further experiment involved two additional bilateral lock conditions: a cooperative and a competitive one. Our assumption was that the results for the cooperative condition would parallel our prior results with the bilateral lock (i.e., the use of the lock for coordination purposes), but this would not be so for the competitive condition. We created the cooperative condition by using “social problem-solving” instructions and the competitive condition by using “chicken” instructions. The instructions were as follows:

“Chicken” instructions. There are two of you who are going to play a game of “chicken.” This experiment has been designed to separate people into two groups: those who give in under pressure, and those who do not. We are interested in observing, when two people are under pressure, who will “chicken out” or back down first. In this game it is possible to win or lose money. It is possible for each of you to profit, or for both of you to lose, or for one of you to profit and the other to lose; this all depends on how you play the game. I want you to feel that it is important for you to earn as much money as you can or lose as little as possible in this game.

“Social problem-solving” instructions. There are two of you who are going to engage in a social problem-solving game. This experiment has been designed to separate people into two groups: those who can arrive at a solution to a problem which will bring maximum benefits to both of the players, and those who cannot work out this solution. We are interested in observing what types of people can arrive at this solution. In this game it is possible to win or lose money. It is possible for both of you to profit, or for both of you to lose, or for one of you to profit and the other to lose; this all depends on how you play the game. I want you to feel that it is important for you to earn as much money as you can or lose as little as possible in this game.

Table 3 presents the major results. It is obvious that the original bilateral lock condition had effects that were rather similar to the cooperative bilateral lock condition. Our explanation of the findings for the bilateral condition seems reasonably well supported.

Let me summarize the conclusions I have drawn from our initial work on the effect of commitment on bargaining. First, there are many interesting questions that warrant further research in this area; our study is a first step rather than a concluding or conclusive one. Second, adolescent boys may be more sensible than they are given credit for and possibly less collision prone than American statesmen and some of their social science advisers. They are sufficiently prudent to resist the temptation to “lock themselves in” to positions from which they cannot reverse if they know they are going to have repeated encounters with someone who has a similar capacity. However, when they are prompted to be competitive by the game of chicken or by a single encounter, some of their prudence and also their money are lost. Third, having a commitment device gives the player a relative advantage over the person with whom he is bargaining, but, at least as often, it leads to a preliminary hassle over the attempt to dominate, with neither player ending up in a superior position. In any case, there is no evidence to suggest that the bargainer with a commitment device does better than the bargainer without such a device when each is facing a player who does not have one. Perhaps all of this can be summed up by saying that “locking oneself in” to an irreversible position in order to gain an advantage is rarely more beneficial than cooperating with the other for mutual gain, and it has the prospect of leading to a mutually destructive contest of willpower.

The Effect of Size of Conflict

Roger Fisher, a professor of international law, in a brilliant paper entitled “Fractionating Conflict” (1964), pointed out that the issues over
which nations go to war are big issues that rarely can be adjudicated, whereas little issues can be. In the Cuban missile crisis, neither the United States nor the Soviet Union would have been willing to negotiate about an issue such as “freedom” or “communism” in the Western hemisphere, although they were able to negotiate about the much smaller issue of the location of 72 weapon systems. Fisher’s thesis is the familiar one that small conflicts are easier to resolve than large ones. However, he also points out that the participants may have a choice in defining the conflict as a large or small one. Conflict is enlarged by dealing with it as a conflict between large rather than small units (as a conflict between two individuals of different races or as a racial conflict), as a conflict over a large substantive issue rather than a small one (over “being treated fairly” or “being treated unfairly at a particular occasion”), as a conflict over a principle rather than the application of a principle, as a conflict whose solution establishes large rather than small substantive or procedural precedents. Many other determinants of conflict size could be listed. For example, an issue that bears upon self-esteem or change in power or status is likely to be more important than an issue that does not. Illegitimate threat or attempts to coerce are likely to increase the size of the conflict and thus increase the likelihood of a competitive process.

In the Acme-Bolt trucking game there was a very simple method for varying the size of conflict; therefore we decided to conduct an experiment on the effect of size using this game. Conflict size was manipulated experimentally by varying the length of the one-lane-wide section of road on the main route. In low-conflict conditions this one-lane section was only 4 units in length, while in middle- and high-conflict conditions it was 10 and 18 units long, respectively. The total length of the main route was held constant at 20 units in all conditions. Thus, while in low-conflict conditions only 20% of the main route was one lane wide, in high-conflict conditions it was one lane wide for 90% of the total distance. In order to hold constant the maximum amount of money that subjects in different conflict-size conditions could make, the subjects started with different amounts of money in the three conflict conditions. Thus, if players chose the optimally cooperative solution to the bargaining problem and coordinated, they could make the same amount of money in all conflict-size conditions. Four-unit pairs began each trip with 48¢ each—so that on any optimally coordinated trip the pair member go through the one-lane section first (P₁) could make a maximum of 23¢, while the player to go through second (P₂) could make a maximum of 18¢. Similarly, 10-unit pairs began each trip with 52¢ each, such that P₁ and P₂ could make a maximum of 27¢ and 14¢, respectively. Finally, 18-unit pairs began each trip with 57¢ each—with P₁ and P₂ making a maximum of 32¢ and 9¢, respectively. Thus, in all three conflict conditions maximum joint pay on a trip equaled 41¢.

Because we were also interested in studying the effects of the sex of the experimenter, half of the subjects (all of whom were male undergraduates) in each of the size conditions were run by a female experimenter, the other half being run by a male experimenter. All subjects heard the same taped instructions, the voice being that of a male, clearly different from the male experimenter. Both the male and female experimenters employed identical experimental procedures (including the phrasesology used in greeting subjects, in leading them through the practice trials, and in reporting scores after each trial of the actual game). Face-to-face contact between experimenter and subjects was brief—involving the greeting and direction of subjects to the experimental room and the administration of two written questionnaires. Subjects knew they were being observed by the experimenter from behind a one-way vision screen, and they knew each other’s sex.

Table 4 presents some of the game-playing data. These results can be summarized briefly as follows: As the size of conflict increased, the bargainers experienced significantly greater difficulty in reaching a cooperative agreement about how to use the one-lane path. This increased difficulty was exemplified by a significant deterioration in cooperative behavior (i.e., fewer “cooperative trials,” fewer alternations, greater number of −75¢ losses), resulting in significantly poorer bargaining outcomes (lower joint pay).

Male subjects run by a female rather than a male experimenter experienced significantly greater difficulty in reaching a cooperative agreement about
the use of the one-lane path. The primary behavioral indicator of this difficulty was the significantly greater number of times that the subjects closed their gates and took the alternate route to their destination—resulting in significantly poorer bargaining outcomes.

These results suggest that male subjects may experience the situation as a more competitive one when the experimenter is an attractive young woman rather than a member of the same sex. They also support the idea that decreasing the size of the conflict makes it easier for bargainers to come to an agreement that is mutually rewarding. I shall not attempt to spell out the implications of this latter finding beyond what I have stated in my introduction to this experiment. Let me note again that I have described a first experiment dealing with this variable. Clearly, there are many interesting and important steps to be taken beyond this initial experiment if we are to learn how to control the size of the issues in a conflict. It may well be, as Fisher has suggested, that “issue control” is as crucial as “arms control” to the peace of the world.

CONCLUSION

I have been harsh enough to claim that the games people play as subjects in laboratory experiments may have some relevance to war and peace. I have implied that the study of interpersonal conflict can provide some insights into international conflict and, let me add, that I believe the reverse is also true: The study of international conflict can give new understanding of interpersonal conflict. It is not only that such terms as “aggression,” “deterrence,” “threat,” “cooperation,” “competition,” “credibility,” and the like seem appropriate in the interpersonal as well as the international context, but also there is, I believe, a real conceptual similarity between the processes at the two levels.

I hope it is clear that I am not saying that the mechanisms or capabilities of acquiring information, making decisions, and acting are similar in individuals, groups, and nations. Nor am I stating that the behavior of individuals and nations will parallel one another if there is no parallel in their relevant properties and external circumstances. Rather, I am asserting that nations as well as individuals acquire information, make decisions, and take actions, and that they will act in similar ways under similar conditions. Thus, each type of unit in a social interaction responds to the other in terms of its information and views of the other; these may or may not correspond to the other’s actualities. Moreover, characteristic distortions of the other tend to develop as a function of the type of social interaction, cooperative or competitive, that is occurring between them, whether the interacting units be nations, groups, or individuals.

Of course, it would be enormously convenient if my assumption of a correspondence in processes of social interaction across different types of social units is a valid one. We are in much the same position as the astronomers. It seems unlikely that we shall ever be able to conduct experiments with large-scale events. However, if we are able to identify the conceptual similarities between the large scale and the small, as the astronomers have between the planets and Newton’s apple, we may be able to understand, predict, and ultimately control what happens between nations by investigating what happens in interpersonal and intergroup situations with which we can experiment.

My assumption of a correspondence may be wrong. Nature may be more perverse than I believe it to be. The ideas behind the experiments that I and others have been conducting may not have any relevance to conflicts outside the laboratory. Of course, I do not know in advance whether any of this research will have any social usefulness. And, at times, the uncertainty about the significance of the intellectual enterprise that I and my colleagues are engaged in becomes enormously frustrating. It would be reassuring to do something that is obviously useful.

No guarantees can be given to those—from either the right or the left—who are demanding that social science be relevant. We can only
guarantee that our efforts will be socially responsible, that our work will seek to be responsive to human concerns, and that we will be continuously concerned with fostering the application of psychological knowledge for the welfare of man. I hope you will agree with me that the phrase "welfare of man" is not limited to one nation, one class, one race, or one discipline.

I have deliberately borrowed the phrase "the welfare of man" from the ethical code of the American Psychological Association. In my view, it is the ethical responsibility of all psychologists—as individuals and as members of their scientific and professional associations—to see to it that psychology is used for peace rather than war, for reducing the arms race rather than intensifying it, for eliminating ethnocentrism and prejudice rather than fostering them, for removing social and economic injustices and inequalities rather than perpetuating them. Since Hiroshima we can no longer pretend that science or scientists can plead innocence with respect to the social consequences of their scientific activities.

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