Cooperation, Conflict, and Justice: In Theory and Practice* 1
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Let me start with an anecdote about George Bernard Shaw. After not having written a play in many years, it was rumored in London that he had just finished a new one. Hearing this rumor, an enterprising young reporter decided to visit Shaw to see whether it was true or not. He traveled to Shaw's home and, after introducing himself, he got right to the point by stating that he had heard that Shaw had written a new play and wanted to know if this was true and, if so, what it was about. Shaw, amused by the brashness of the young reporter said: "Yes, I have written a new play and you can get an idea about the play if I tell you how each act ends. The first act ends with the man embracing a woman." He paused and then continued, "The second act ends with the man embracing a woman." And then he said, "The third act also ends with the man embracing a woman." The young reporter looked puzzled and asked hesitantly: "But what is the play's theme?" Shaw replied, "The theme is change." The reporter was still puzzled and even more hesitantly said: "I do not understand." Shaw answered with a smile, "It's not the same woman."

My story is also in three parts but it has an epilogue. And, like Shaw's play, it is about interpersonal relations. However, my theme is continuity: my work deals with the same intellectual cast of characters, but the setting changes from part to part. The first part deals with my work on cooperation and competition, the second with my work on conflict resolution, and the third part with my work on distributive justice. The three parts are, in a sense, an introduction to the epilogue, which presents the practical implications of these parts and describes what I am now doing.

I. Cooperation and Competition

The first part starts when I was a graduate student at Kurt Lewin's Research Center for Group Dynamics at M.I.T. After serving in the Air Force during World War II, I resumed my graduate study not long after Hiroshima and Nagasaki, and my work in social psychology has been shadowed by the atomic cloud ever since. As my dissertation research, I undertook a theoretical analysis and experimental study of the effects of cooperation and competition upon group process (Deutsch, 1949a, 1949b). This study 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 newly formed 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 relative advantage for their own nations.

I suspect that my initial concern crystallized this way 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. It 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.”

My initial theorizing on cooperation-competition was influenced by the Lewinian thinking and research on tension systems; but, even more, it was indebted to the ideas which were “in the air” at the M.I.T. Research Center for Group Dynamics. Ways of characterizing and explaining group processes and group functioning, employing the language of Lewinian theorizing, were under constant discussion among the students and faculty at the M.I.T. Center. The preoccupation with understanding group processes at the Center pressed me to formulate my ideas about cooperation and competition so that they would be relevant to the psychological and interpersonal processes occurring within and between groups. This pressure forced my theory and research (Deutsch, 1949a, 1949b) to go considerably beyond the then-existing social psychological work on cooperation-competition. My theorizing and research were concerned not only with the individual and group outcomes of cooperation and competition but also with the social psychological processes which would give rise to these outcomes.

Thus, I turned my social concern about the possibilities of nuclear war into a theoretically oriented investigation of cooperation and competition. My research employed an experimental format that incidentally involved a
systematic comparison of two types of classroom grading systems: cooperative and competitive. The research employed this educationally related format because, to tell the truth, it was a very convenient way for me to get subjects for my experiment. I was teaching a large introductory psychology course at M.I.T.; and, by breaking it down into many small groups of five students each, I could randomly assign groups to either a cooperative or a competitive grading system, so as to test the implications of my theory of cooperation and competition. The research format had no direct relevance to the prevention of a nuclear holocaust, but I believe the theoretical ideas have. Elsewhere, I have given addresses on a psychological perspective in regard to preventing World War III, and I have written a number of related papers on the psychological issues related to war and peace, which draw upon the ideas contained in my theoretical work on cooperation and competition and related subsequent work on conflict by myself and other social scientists.

Let me briefly summarize the main ideas of the theory. To oversimplify it somewhat, my theory has two basic notions: one relates to types of interdependence among goals of the people involved in a given situation and the other to types of actions by the people involved. I identify two basic types of goal interdependence: promotive interdependence, where the goals are positively linked in such a way that the amount of his goal that a person obtains or the probability of obtaining his goal is positively correlated with the amount of their goals that others obtain or to the probability of their obtaining their goals; contrient interdependence, where the goals are negatively linked in such a way that the amount or probability of goal attainment is negatively correlated with the amount or probability of the other's goal attainments. To put it more colloquially, when you are promotively linked with another you "sink or swim together"—when you are contriently linked, if the other "sinks" you "swim" and if the other "swims" you "sink."

I also characterize two basic types of actions by an individual: effective actions, which improve the actor's chances of obtaining his goal, and bungling actions, which worsen the actor's chances of obtaining his goal. (For purposes of simplicity, I use dichotomies for my basic concepts; the dichotomous types of interdependence and the dichotomous types of actions are, I assume, polar ends of continua.) I then combine types of interdependence and types of action to posit how they jointly will affect three basic social psychological processes: "substitutability" (how one person's actions can satisfy another person's intentions), "cathexis" (or "attitudes"), and "inducibility" (or "influence").

Thus, my theory predicts that, when you are in a promotively interdependent relationship with someone who bungles, his bungling will not be a substitute for effective actions you had intended and bungling will be
yourself to prevent yourself from being harmed by the error. On the other hand, if your relationship is one of contrient interdependence and the other bungles (as when your tennis opponent double-faults), your opponent's bungle will substitute for an effective action on your part and will be cathected positively or valued. The reverse is true for effective actions: an opponent's effective actions are not substitutable for your and are negatively cathected or valued; a teammate can induce you to help him make an effective action, but you are likely to try to prevent or obstruct a bungling action by your teammate. In contrast, you will be willing to help an opponent bungle, but your opponent is not likely to induce you to help him make an effective action (which, in effect, would harm your chances of obtaining your goal.)

My theory of cooperation and competition then goes on to make further predictions about different aspects of intrapersonal, interpersonal, intragroup, and intergroup processes from the predictions about "substitutability," "cathectic," and "inducibility."

There are many more specific predictions, which are described in my article, "A Theory of Cooperation and Competition" and in my books. They have been supported by my own research as well as by the studies of many other investigators. More recently, research done in classrooms by Johnson and his co-workers, by Slavin and his associates, and by Aronson and his students has provided further support for the theory.

My own early work on cooperation and competition in the classroom, combined with the more systematic research of recent investigators, has considerable implications for educational practice. More about this in the Epilogue.

II. The Resolution of Conflict

The second part starts with a question which is a complement to the question motivating the work described earlier. Instead of asking "What are the effects of cooperation and competition?" it asks, "What are the conditions under which a cooperative or competitive relationship will evolve?" I found it convenient to address this latter question by studying conflicts; these are typically situations which contain a mixture of cooperative and competitive elements. In studying conflict, my students and I, along with a number of other social psychologists, pioneered in developing a methodology of experimental games and simulations, which has become widely used in the social sciences for both research and training. Our research has studied not only laboratory-created conflicts but also marital conflicts, divorce negotiations, and labor-management mediation.

Since our research focused on conflict, I reworded my query so that it was expressed as, "What are the condition which give rise to a constructive
or destructive process of conflict resolution?" This question has been at the center of the research conducted by my students and myself for many years.

Our research started off with the assumption that, if the parties involved in a conflict situation have a cooperative rather than competitive orientation toward one another, they will be more likely to engage in a constructive process of conflict resolution. In my earlier research on the effects of cooperation and competition upon group process, I had demonstrated that a cooperative process is more productive in dealing with a problem that a group faces than a competitive process. I reasoned that the same would be true in a mixed-motive situation of conflict: a conflict could be viewed as a mutual problem facing the conflicting parties. Our initial research on trust and suspicion employing the Prisoners Dilemma game strongly supported my reasoning, as did subsequent research employing other experimental formats. I believe that this is a very important result, with considerable theoretical and practical significance.

At a theoretical level, it enabled me to link my prior characterization of cooperative and competitive social processes to the nature of the processes of conflict resolution which would typically give rise to constructive or destructive outcomes. That is, I had found a way to characterize the central features of constructive and destructive processes of conflict resolution; doing so represented a major advance beyond the characterization of outcomes as constructive or destructive. This was not only important in itself, but it also opened up a new possibility. At both the theoretical and practical levels, the characterization of constructive and destructive processes of conflict created the very significant possibility that we would be able to develop insight into the conditions which initiate or stimulate the development of cooperative-constructive as opposed to competitive-destructive processes of conflict. Much of the research of my students and myself has been addressed to developing this insight.

A good deal of our early research on the conditions affecting the course of conflict was done on an ad hoc basis. We selected independent variables to manipulate based on our intuitive sense of what would give rise to a cooperative or competitive process. We did experiments with quite a number of variables: motivational orientation, communication facilities, perceived similarity of opinions and beliefs, size of conflict, availability of threats and weapons, power differences, third-party interventions, strategies and tactics of game-playing by experimental stooges, payoff structures of the game, personality characteristics, and so on. The results of all these studies fell into a pattern which I slowly began to grasp.

All these studies seemed explainable by the assumption, which I have immodestly labeled "Deutsch's Crude Law of Social Relations," that the characteristic processes and effects elicited by a given type of social relationship also tend to elicit that the type of social relationship. Thus,
characteristic processes and effects elicited by a given type of social relationship also tend to elicit that the type of social relationship. Thus, cooperation induces and is induced by a perceived similarity in beliefs and attitudes; a readiness to be helpful; openness in communication; trusting and friendly attitudes; sensitivity to common interests and de-emphasis of opposed interests; an orientation toward enhancing mutual power rather than power differences; and so on. Similarly, competition induces and is induced by the use of tactics of coercion, threat, or deception; attempts to enhance the power differences between oneself and the other; poor communication, minimization of the awareness of similarities in values and increased sensitivity to opposed interests; suspicious and hostile attitudes; the importance, rigidity, and size of the issues in conflict; and so on.

In other words, if one has systematic knowledge of the effects of cooperative and competitive processes, one will have systematic knowledge of the conditions which typically give rise to such processes and, by extension, to the conditions which affect whether a conflict will take a constructive or destructive course. My early theory of cooperation and competition is a theory of the effects of cooperation and competition processes. Hence, from the crude law of social relations stated earlier, it follows that this theory provides insight into the conditions which give rise to cooperative and competitive processes.

The crude law is crude. It expresses surface similarities between "effects" and "causes"; the basic relationships are genotypical rather than phenotypical. The surface effects of cooperation and competition are due to the underlying type of interdependence ("promotive" or "contrient") and type of action ("effective" or "bungling"), the basic social psychological processes involved in the theory ("substitutability," "cathexis," and "inducibility"), and the social medium and social context through which these processes are expressed. Thus, how "positive cathexis" is expressed in an effective, promotively interdependent relationship will depend upon what is appropriate to the social medium and social context, that is, presumably one would not seek to express it in a way which is humiliating or embarrassing or likely to be experienced negatively by one's partner. Similarly, the effectiveness of any typical "effect" of cooperation or competition as an initiating or inducing condition of a cooperative or competitive process is due not to its phenotype but rather to the inferred genotype of type of interdependence and type of action. Thus, in most social media and social contexts, "perceived similarity in basic values" is highly suggestive of the possibility of a promotive linkage between oneself and the other. However, we are likely to see ourselves as contriently linked in a context which leads each of us to recognize that similarities in values lead us to seek something which is in scarce supply and available for only one of us. Also, it is evident that, while threats are mostly perceived in a way which suggests a contrient
that is good for you or that you feel you should do is apt to be suggestive of a promotive linkage.

Although the crude law is crude, it is my impression that it is reasonably accurate; phenotypes are often indicative of the underlying genotypes. Moreover, it is a synthesizing principle which integrates and summarizes a wide range of social psychological phenomena. Not only do the typical effects of a given relationship tend to induce that relationship; it also seems that any of the typical effects of a given relationship tends to induce the other typical effects. For example, among the typical effects of a cooperative relationship are positive attitudes, perception of similarities, open communication, and an orientation toward mutual enhancement. One can integrate much of the literature on the determinants of positive and negative attitudes in terms of the other associated effects of cooperation or competition. Thus, positive attitudes result from perceptions of similarity, open communication, and so on. Similarly, for "effectiveness of communications," many of its determinants can be linked to the other typical effects of cooperation or competition.

The research and theorizing that my students and I have done on conflict resolution, combined with the work of many other social scientists in this area, have cumulatively contributed to the emergence of a new mode of thinking about conflict, with an array of concepts that highlight some of the central processes and 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, and it has provided new insights about how to manage conflicts more productively at the interpersonal, intergroup, and international levels. I also believe that there is emerging from this work significant knowledge on how to educate people to handle the inevitable conflicts of everyday life more productively. More about this in the Epilogue.

III. Distributive Justice

The third part of my lecture deals with my work on the social psychology of distributive justice. I was invited into this area by a former student, Melvin Lerner, who asked me in 1972 to prepare a paper for a conference on injustice in North America. In response, I wrote one entitled "Awakening the Sense of Injustice" (Deutsch, 1974), which characterized the conditions under which those who are advantaged as well as those who are disadvantaged by an injustice would experience the injustice and actively seek to remedy it. The paper, one of my personal favorites, won the Allport prize; but it was unfortunately buried in an obscure publication based upon the conference (Lerner and Ross, 1974), and it has probably been read by only a few of my most dedicated students. Nevertheless, in preparing it I
only a few of my most dedicated students. Nevertheless, in preparing it I
familiarized myself with the then dominant approach to the social
psychology of distributive justice "equity theory," and was so appalled by its
narrowness and unwitting ethnocentrism that I was drawn into this area.

Like the bourgeois gentleman of Moliere's play, who was delighted to
learn that he had been speaking prose all the time, I have been surprised
and delighted to recognize that the research I had been doing on
"cooperation and competition" and "conflict resolution" could be quite
properly labeled "justice" research. The work on "cooperation-competition"
could be thought of as throwing light on the social and psychological effects
of two different principles of distributive justice: an "egalitarian" and a
"competitive, meritocratic" one. The work on "conflict resolution" could be
viewed as providing insight into the conditions under which people with
conflicting interests are able to work out an agreement (i.e., a system of
justice defining what each shall give and receive in the transaction between
them) that is stable and mutually satisfying.

Our theorizing and research on distributive justice has focused on the
social and psychological effects of distributing rewards according to different
principles and values. It has also centered on understanding the personal
and social conditions which give rise to the preference for one or another
principle of distributive justice. Within this context, we have been
particularly interested in looking at the canon of justice which equity theory
had posited to underlie the sense of justice universally, namely, the principle
that people should be rewarded in proportion to the value of their individual
contributions. Equity theory, in harmony with the Protestant ethic and
American ideology, assumes that this principle is the one that gives rise to
the greatest social welfare and social productivity. Some of our research has
been directed at systematically comparing this principle with such other
canons of distributive justice as "equality" (equal sharing by all participants
regardless of their relative contributions), "need" (distribution on the basis of
need for the reward), and "winner-takes-all (the one who contributes the
most get is all).

The social psychological effects of different systems of distributive justice

My early research on cooperation-competition was relevant to and
disconfirming of equity theory's assumption about the superior, beneficial
consequences of the proportionality canon of distributive justice, "to each
according to his contributions." Yet, this early research was not the fairest
test of this distributive principle. "Proportionality" is not necessarily
competitive: it is so only when the amount of reward to be distributed is
fixed or scarce or is determined by the relative rather than the absolute
contribution of the individual. Otherwise, it is individualistic. Moreover, the
tasks and social context of our early study were not such as to favor the proportionality principle.

We have conducted a series of experiments that were designed to meet the conditions necessary to demonstrate the effectiveness of rewarding people in proportion to their performance. The subjects in our studies strongly preferred the proportionality principle over the other principles that were also being used ("equality," "need," and "winner-takes-all"); they thought that they would work harder and earn more under this principle; they very much wanted the reward that was being distributed (money); money was their primary reason for participating in our studies; the tasks they worked on had little intrinsic interest; task performance was responsive to effort and was reliably and validly measured; and performance was determined solely by the individual and was not at all dependent upon effective social cooperation. The subjects were men and women, undergraduate and graduate students; they were run in experiments as individuals, as members of nominal groups without any face-to-face contact, and also in face-to-face groups.

The results of our research are striking—and negative. There is clear, consistent evidence in all the relevant experiments that there are no significant effects of the distribution system on individual or group productivity when neither individual nor group task performance depends upon effective social cooperation. This result is obtained when the individual is working in a group context and also when he or she is working alone. That is, there is no evidence to indicate that people work more productively when they are expecting to be individually rewarded in proportion to their own individual performance than when they are expecting to be rewarded "equally" or on the basis of "need." However, when task performance is aided by effective social cooperation or can be hindered by the obstructive actions of others, there is clear evidence that the highly competitive "winner-takes-all" distributive system leads to relatively poor performance compared to that elicited by other distributive systems, and that the "equality" system leads to relatively high performance.

Our results provide little support for the assumption of "equity theory" and of much current ideology that productivity is higher when individual earnings are closely tied to individual performance.

These results are not surprising if one takes into account that the subjects were college students who were not alienated from themselves, their colleagues, or the experimenters. They had no reason not to do as well as they could, whether or not they would earn more money by so doing. I speculate that distributing rewards according to relative individual contributions is likely to be socially advantageous only when people are alienated from their work and when the reward to be distributed is in very short supply and is intensely desired.
Our results also indicate that the distributive system under which a group works can significantly affect the social attitudes and social relations that develop within the group. In general, the results here parallel the findings of my early study of cooperation-competition: the more "egalitarian" the reward structure, the friendlier the attitudes toward one's fellow group members and the more one enjoys working on the task; the reverse is true as the reward structure becomes more differentiating among the group member.

The social psychological determinants of the preferences for different systems of distributive justice

Our theorizing and research on the social psychological determinants of the preference for and choice of different systems of distributive justice have been guided by my crude hypothesis of social relations, developed during my study of conflict resolution (the typical consequences of a given type of relation tend to elicit that relation).

Elsewhere, I (Deutsch, 1975) have developed rationales as to why the tendency for economically oriented groups will be to use the principle of equity, for solidarity-oriented groups to use the principle of equality, and for caring-oriented groups to use the principle of need. I have then characterized typical affects of economically oriented relations, solidarity-oriented relations, and caring-oriented relations and have hypothesized that these different kinds of typical effects will elicit different principles of distributive justice.

Thus, among the typical consequences of an economic orientation (Diesing, 1962) are: (1) the development of a set of values which includes maximization, a means-end schema, neutrality or impartiality with regard to means, and competition; (2) the turning of man and everything associated with him into commodities, including labor, time, land, capital, personality, social relations, ideas, art, and enjoyment; (3) the development of measurement procedures which enable the value of different amounts and types of commodities to be compared; (4) the tendency for economic activities to expand in scope and size. The crude hypothesis advanced above would imply that, if a social situation is characterized by impersonality, competition, maximization, an emphasis on comparability rather than uniqueness, largeness in size or scope, etc., then an economic orientation and the principle of equity are likely to be dominant in the group or social system.

A number of our studies bear upon the foregoing ideas. They are described in my book, *Distributive Justice*. To sum up, these and other studies are providing support for the applicability of our crude hypothesis of social relations to area of distributive justice as well as to that of conflict.
resolution. More generally, they suggest that social and psychological realities are connected to one another by two-directional causal arrows: a given system of distributive justice will tend to induce psychological orientations which are consistent with and supportive of it; moreover, one's psychological orientation will lead him to prefer and to choose to function under one rather than another system of distributive justice.

Epilogue

In this section, I wish to discuss some of the practical implications of the theorizing and research I have described in the main body of the paper. I have indicated earlier that I subscribe to Lewin's dictum that there is nothing so practical as a good theory. I still believe this. The major social value of intellectual work in the behavioral sciences consists in its providing organizing frameworks, clarifying ideas, and systematic concepts for helping those who are engaged in practical work to think about what they do more comprehensively, more analytically, and with more concern for the empirical soundness of their working assumptions. My own intellectual work as it bears upon practice has been mainly of this theoretical nature, with occasional policy-oriented papers in the areas of education, war and peace, and distributive justice. A number of my students have been much more active in developing systematically the implications of social psychological theory and research for the education and training of professional practitioners, including educators, managers, negotiators, and diplomats.

I single out David Johnson, who along with his brother Roger at the University of Minnesota's Center For Cooperative Learning, have made major contributions to education through their extensive research and training in cooperative learnings. My early work on cooperation-competition provided the initial stimulus and the intellectual framework for these efforts. However, the Johnsons have gone considerably beyond this early work of mine at both the theoretical and practical level. And by now, over 40,000 teachers have been trained to employ cooperative learning procedures in their classrooms by the Johnsons and their associates. Many others--Slavin, Sharan, Ted and Nancy Graves, Aronson, Kagan, Cohen (to name several)--have also done extensive trainings and research on cooperative learning. The various studies of cooperative learning are quite consistent with one another, and with my theory and early research, in indicating very favorable effects upon students: they develop more positive attitudes toward learning and toward school, they develop greater self-esteem and a greater sense of being valued by their classmates, they become more accepting of students from different racial/ethnic backgrounds, and often they learn more. These results are truly impressive. Nevertheless, I must utter some words of caution. The research results have almost all been from studies of
experimental classrooms which have rarely lasted more than three to six weeks. For obvious reasons, such research has many limitations. To overcome these limits, we have begun a program of long-term, longitudinal research which I shall briefly describe in a moment.

In addition to the work being done on cooperative learning, a number of my former students have been doing work on bargaining, negotiations, mediation, and conflict resolution in communities, industry, schools, international relations, and families. Here I refer to David Johnson, Jeffrey Rubin, Kenneth Kressel, Kenneth Sole, Barbara Bunker and others. There are, of course, many other scholars and practitioners contributing to the rapidly developing field of conflict resolution. During the past half-dozen years, conflict resolution workshops and courses have spread like wild fire. Every day, I seem to get an announcement of a new workshop or a new manual for training people in the skills of constructive conflict resolutions. In the schools in many different areas of the country, children are being trained not only to manage their own conflicts more constructively, but also how to serve as mediators in the conflicts of others. Thus, in San Francisco, ten year-old kids are given twenty hours of training in mediation and given a T-shirt with "conflict manager" printed boldly on it. In pairs, on the playgrounds, etc-- whenever they see a heated dispute--they offer their help to the disputants. The anecdotal evidence is that such programs benefit the students who are trained to be mediators and also help to reduce violence in the schools.

As one of the people who is, in a marginal way, partly responsible for the development of the field of conflict resolution, I feel appalled by the paucity of research on the effects of such training programs. In part to remedy this lack, we have established a new Center at Teachers College which will conduct systematic research and training on such topics as cooperative learning, conflict resolution, mediation, and the use of constructive controversy in teaching. It is called the International Center For Cooperation and Conflict Resolution.

We have been underway for about a year and are now, in the midst of conducting a longitudinal study of the effects of introducing cooperative learning and conflict resolution training in corporative learning and conflict resolution in an alternative high school in New York City. The students, who are primarily Blacks and Hispanics and often live in very difficult circumstances, frequently have serious psychological problems, and they have a sizeable drop-out rate. We selected this school for several reasons. First of all, we as well as the Foundation which is supporting our study are very much interested in the mental health of minority children; secondly, the head of the school was eager to have the training and was willing to have the research; and thirdly, it seemed possible that our training intervention would involve the majority of the teachers in the school.
Before actually beginning our study, the school principal and I both agreed that it would be desirable to meet with the management team of the school and the teacher at the four different campuses of the school to describe what we proposed to do in the way of training and research and to get their agreement to participate in the study. We did this and got the agreement of the management team and of the faculty at three of the four campuses. We had specified that we would not work in any campus unless a majority of the teachers agreed to: participate in the training, use the training in their classrooms, and permit research—including classroom observations and filling out questionnaires. Let me note that there are about fifteen teachers and two hundred students at each campus.

We collected "before" data from questionnaires filled out by the teachers and students at the three participating campuses from over ninety percent of the teachers and about two-thirds of the enrolled students, which represent more than eighty percent of students actually attending school. In the last week of August (just prior to the Fall term), we provided training to the teachers; the teachers from one campus were trained in both cooperative learning and conflict resolution procedures; in a second campus, they were trained only in cooperative learning; and in a third, only in conflict resolution. The fourth campus, which is not participating, was meant to serve as a "control." We are now in the process of negotiating with another alternative high school to have them serve as a substitute.

The training was enthusiastically received by the teachers; almost all of the teachers in the three participating campuses were at the training sessions. Training is continuing after school every other week for two hours and there is also inservice training. At this point, things appear to be going reasonably well. Yet there have been enormous difficulties and there are still critical problems. Let me discuss some of the:

1. First, this sort of study is expensive and to do the kind of research that is appropriate to the issues involved would require resources that are not currently available from foundations or from government. Although our research design has the appearance of a "before-after" design with a control group, it is really several case studies. To do a true controlled experiment would require many more schools, a consortium of cooperating research/training centers, and a level of expenditure not currently available for social science research.

2. Schools and teachers are typically suspicious of research and researchers. Partly this arises out of lack of knowledge and training in understanding research, partly it is because researchers have too often used the schools for their own purposes without giving something in return, partly it arises from a considerable anxiety about the possibility of being evaluated by outsiders and partly it comes from fear that the "radical right" will go on a crusade against the school administration if the school permits
this kind of social science research in the schools. To be accepted and to be effective, the researchers must be exquisitely sensitive to the school's culture, politics and anxieties. We trod very lightly on the egg shells of the school.

3. A project of this sort poses many intellectual as well as practical challenges. Intellectually, if you think seriously about the processes involved in creating the individual and social changes we are attempting, as well as how to measure these changes, you see how much more basic social psychological knowledge is needed. And, from a research perspective, the problems of implementation of the specific training interventions are quite serious. In a study such as ours, we are not working with "experimenter-teachers" who will implement the experimental intervention as prescribed by the research but with real teachers who will implement the cooperative learnings and conflict resolution procedures as these procedures fit their classrooms and their personal styles. Our training is necessarily responsive to the situations of the individual teachers and, hence, there is inevitably considerable individual teacher variation in the employment of cooperative learning and conflict resolution procedures in the classroom.

There are also a number of practical problems: teachers have to be paid for the training that they receive outside of their regular school hours. At $24 per hour per teacher, the costs of such training is very high: a cost that most research foundations are not willing to support. I shall not detail the difficulties we have experienced in getting the NYC Board of Education to provide the financial support for this teacher training. But enough has been obtained so far to cover the first year of training.

There are many practical problems and heartaches that I could discuss in connection with doing this sort of research. At times, I think that I must have been crazy to leave the relative comfort, security, and simplicity of the experimental laboratory. Yet, there is an excitement involved in facing and overcoming tough obstacles and there is a tremendous gratification in the sense that we may be making a real difference in the lives of teachers, students, and schools. If training in cooperative learning and conflict resolution has the favorable consequences that we can expect from theory and laboratory research, then it is possible that schools will become more cooperative in their functioning and teachers and students will be more prepared to engage in lively controversy rather than daily quarrel in their everyday life. This preparation may help us all to survive in the age of nuclear weapons.