

A Personal History of Social Interdependence:
Theory, Research, and Practice*

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Let me begin by stating that my aims in this paper are much more modest than the title in the Program would suggest. I shall give a personal history of my work on social interdependence rather than attempt to survey the enormous amount of work that has been done, over the years, in this area.

I started my studies of psychology in the latter part of the 1930's at the City College of New York. The major intellectual influences in the CCNY psychology department then came from Gestalt psychology, psychoanalysis, and Marxism. Each of these intellectual traditions, in their own distinctive ways, stressed interdependence as a key theme. Gestalt psychology's central idea is interdependence. As Solomon Asch (1952, p.60) has stated:

"If actions and experiences are in relations of interdependence, it follows that we must study them in terms of the units of which they are a part. To understand an action, or statement, or motive, we must not look at the separate, isolated facts only, nor upon the isolated relations; we must look instead at the facts as they interpenetrate, as they complete or fit each other, or as they clash and move away from each other... To understand a person we must see him in his setting, in the context of his situation and the problems he is facing... When the phenomena being observed have order and structure, it is dangerous to concentrate on the parts and to lose sight of their relations.

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At City College, I became acquainted with Lewin's theorizing and research and the pioneering experiments that he stimulated on democratic, autocratic, and laissez-faire groups. I was drawn to Lewin's work because it seemed to have the potential of integrating the key ideas in the Gestalt, psychoanalytic, and Marxist approaches to understanding human behavior. And, at the end of World War II, when I had the opportunity to study with Lewin at his newly created Research Center for Group Dynamics at M.I.T., I jumped at the chance.

Cooperation and Competition

As my dissertation research at the Center, I undertook a theoretical analysis and experimental study of the effects of cooperation and competition upon group processes. The 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 a 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.

My initial theorizing 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. 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

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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.

Let me briefly summarize the main ideas of the theory. To oversimplify somewhat, it 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; and *contrient interdependence*, where the goals are negatively linked. To put it 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. 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, the 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 the bungling will be cathected negatively. In fact, when your net-playing tennis partner in a doubles game allows an easy shot to get past him, you will have to extend 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 yours 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).

The theory then goes on to make further predictions about different aspects of intrapersonal, interpersonal, intragroup, and intergroup processes from the predictions about "substitutability," "cathexis," and "inducibility." The predictions have been supported by ^{Deutsch's} my own research as well as by the studies of many other investigators. David and Roger Johnson in their recent book, Cooperation and Competition: Theory and Research, provide a comprehensive review of the relevant research. (~~Parentetically, I note that their book does more than this: it adds to, develops further, and extends the implications of my work in important and original ways.~~)

Conflict Resolution

After satisfying myself that I had given a good, even if not complete, answer to the question, "What are the effects of cooperation and competition?", I turned to the complementary question: "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. Since our research focused on conflict, I reworded my query so that it was expressed as: "What are the conditions which give rise to a constructive or destructive process of conflict resolution?"

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.

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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.

The results of these studies fell into a pattern which I slowly began to grasp. All 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, 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.

Distributive Justice

Conflict and justice are intimately intertwined. So it was natural for me to turn to doing work on the social psychology of justice after providing a tentative answer to: "What determines whether

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a conflict will take a constructive or destructive course?" My early work on the effects of cooperation-competition were, without my awareness at the time, studies of the effects of two different principles of distributive justice: A cooperative-egalitarian and a competitive-meritocratic principle. Similarly, much of my work on conflict resolution could be reconceptualized as concerned with identifying the conditions under which people who are in conflict with one another can find a just resolution to their conflict which is mutually satisfactory.

I do not have the time here to describe our work on distributive justice. However, let me sum it up by stating that our studies provide support for the applicability of our crude hypothesis of social relations to the 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; also, one's psychological orientation will lead him to prefer and to choose to function under one rather than another system of distributive justice.

About the same time that I began my work on distributive justice, I was doing research with Mike Wish on the basic dimensions of interpersonal relations. From this research, as well as from thought about some of the issues relating to distributive justice, it became evident that while "cooperation-competition" was a key dimension of social interdependence, there were others that were also important. In a paper, "Interdependence and Psychological Orientation," I considered five basic dimensions of social interdependence: cooperation-competition, the distribution of power, task-oriented vs. social-emotional oriented, formal-informal, and intensity. For each dimension, solely and in combination with other dimensions, I attempted to characterize the psychological orientation (the cognitive, motivational, and moral orientation) that would be consistent with the type of social interdependence. Here, too, there is a two-way causal relation between type of social interdependence and psychological orientation that one would expect from my crude law of social relations. A given type of social interdependence will induce and be induced by a given type of psychological orientation. There is not only a marked tendency for consistency between type of social interdependence and type of psychological orientation, there is also a tendency for consistency among the cognitive, motivational, and moral orientations which compose a given psychological orientation.

Recent Work on the Effects of Training in Cooperative Learning
and Constructive Conflict Resolution

Until 1986, when I established the International Center for Cooperation and Conflict Resolution at Teachers College, I had not been very much involved in developing the educational implications of my theoretical and empirical research. I had, of course, followed the very productive work being done by David and Roger Johnson on cooperative learning and on the constructive use of controversy. I wanted to borrow from their work to see if we could help to improve the situation of students in an alternative high school in New York City. (An alternative high school is a school for students who have previously dropped out of school and are trying again.) The students, who are mostly African-American and Hispanic, are often living in difficult circumstances with little social support.

We conducted training in conflict resolution at one of the sites of this school, cooperative learning at a second site, and both cooperative learning and conflict resolution at a third site. Due to lack of funding, the training and data collection lasted only two years rather than the three that we initially planned. There were also some unexpected problems in the training as well as in the collection of the data. Nevertheless, much to my surprise, important and interesting findings are emerging from the extensive quantitative and qualitative data collected in our study.

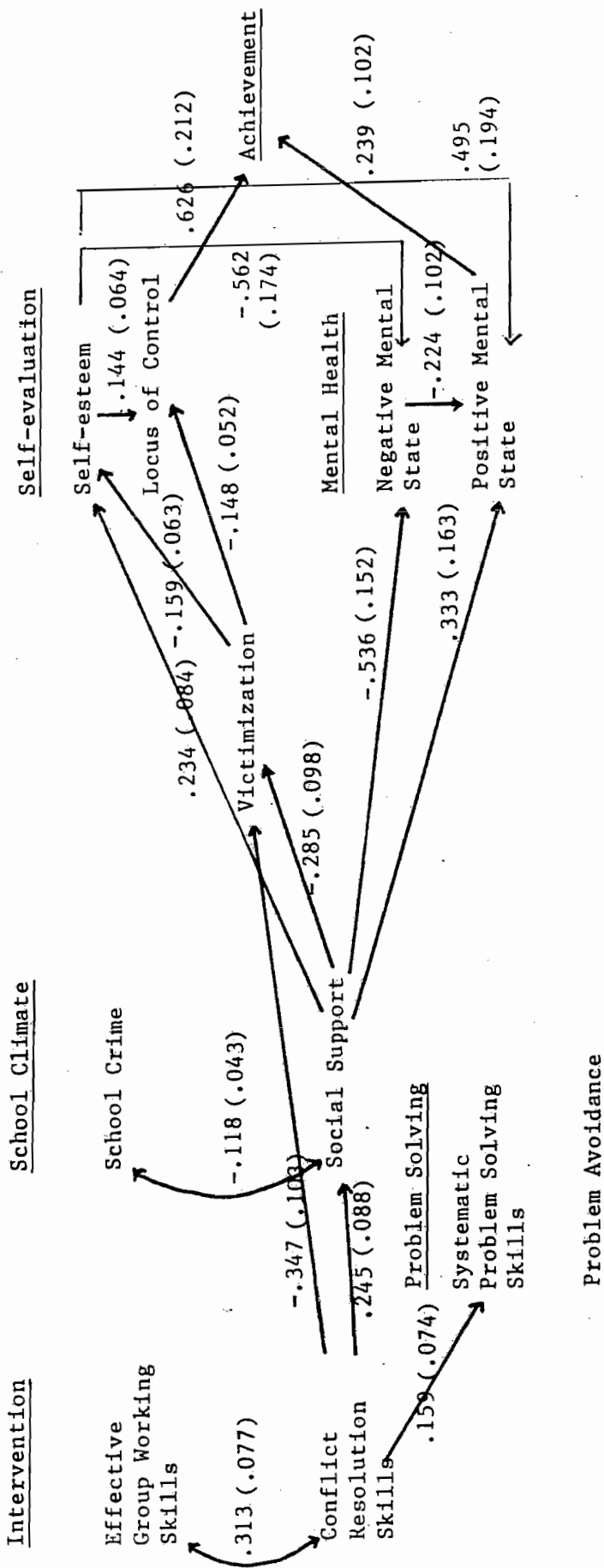
Some of our preliminary findings are presented in Figure 1 that is being handed out. Figure 1 portrays the causal structure among some of the key variables in our study. It is derived from several Lisrel analyses conducted by Quanwu Zhang. In words, the Figure indicates that improvement in managing one's conflicts (at home, in school, and with friends) is reciprocally related to improvement in the way one works in groups. Improvement in these social skills leads to increase social support (at home, in school, and with friends) and decreased victimization as well as a more systematic orientation to problem-solving. An increase in one's social support reduces anxiety and depression (negative mental states) and increases one's positive mental state as well as one's self-esteem. Victimization is increased as school crime increases but it, as well as school crime, is decreased by increased social support. Victimization leads to less self-esteem and less sense of control over one's fate. Academic achievement (as measured by scores on Regents' RTC tests) increases as one's positive mental state increases; the latter is directly affected by one's social support and self-esteem and indirectly influenced by one's social skills. Academic achievement is also positively affected by a greater sense of control over one's own fate which, in turn, is positively affected by one's self-esteem, by one's social support, and by a lessening in victimization. Other data, not presented in Figure 1, indicates that work performance (as rated by

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the student's work supervisor) is also positively influenced by the student's experiences in cooperative learning and/or conflict resolution training.

To sum up, I started my career in psychology under intellectual influences which stressed the central role of "interdependence" in understanding psychological and social processes. After many years of theorizing, research, and practical work relating to social interdependence, I still believe that deeper knowledge of social interdependence and of how to manage our interdependencies, at all levels of social life, is the key to human survival with peace, joy, and justice.

Figure 1
THE INTEGRATED RESULTS OF LISREL ANALYSIS
 (Relationships between the latent variables)



* All the above coefficients are at least at the significance level of .05; this model does not depict the relations between problem-solving and the other variables to the right.

** Standard errors for each coefficient are in parentheses.

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