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A CASE STUDY OF INTERGROUP COMMUNICATION

by
Eric Earl Matthiesen

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of the requirements for the degree of
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in The University of Michigan
1976

Doctoral Committee:

Assistant Professor John E. Baird, Chairman
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Assistant Professor Richard B. Haas
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CHAPTER I

INTRODUCTION

The root experience to which the origins of this study can be traced is the researcher's own struggle to transcend the more obvious first assessments of expressive behavior. It is generally accepted, for example, that "the group situation consists of a conversation; one comment followed by another in which a number of individuals participate. . . ."[1] Also, it is common knowledge that "there is usually a surface coherence to these successive comments, that is . . . [group members] can be described as having a conversation about some topic."[2]

But what are members seeking to accomplish when they speak? Exactly what do they hope to accomplish by their remarks? These were the questions asked by this researcher as he sat in the weekly meetings of Psychology 454, a classroom course in which the students were encouraged to participate in the dual process of creating and analyzing the

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[1]Dorothy Stock and H. Thelan, Emotional Dynamics and Group Culture (New York: National Training Laboratories, 1958), p. 8.

[2]Ibid.

data of human interaction.[1] That experience was three years ago; yet the events that led to these questions can clearly be recalled.

Shortly after the opening session and throughout the weeks that followed, the writer sat in Psychology 454 overwhelmed by what was going on around him. The essence of that experience is captured in a short narrative in which Henri Tajfel tells of a scorpion who, "wishing to cross a swollen river, asked a turtle to carry it [to the other side]. The turtle at first refused, but finally agreed. Once they were in the middle of the river, [however], the scorpion stung the turtle who said, while beginning to drown: 'You idiot, now we are both going to die.'"[2] The scorpion had betrayed his own best interest; and, in what appeared to be an irrational act, had sent them both to the bottom of the river. To the turtle the scorpion's behavior was inexplicable.

The turtle is not alone in its inability to explain the behavior of the scorpion. The premature deaths of the scorpion and the turtle raise a number of difficult questions--questions that traditional socio-psychological theory

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[1]Richard D. Mann, Graham S. Gibbard, and John J. Hartman, Interpersonal Style and Group Development (New York: John Wiley & Sons, 1967), p. 1.

[2]Henri Tajfel, "Intergroup Behavior, Social Comparison and Social Change," 1974 Katz-Newcomb Lectures in Social Psychology delivered in Ann Arbor, Michigan, 30 March 1974, p. 62.

cannot answer. The answers to these questions are, however, implicit in the scorpion's reply to the turtle: "I know," said the scorpion in response to the turtle's observation that both were doomed to die, "but this is the Middle East."[1]

The scorpion's answer implies a social psychological theory quite different from the now prominent theories of inter-individual psychology--theories that explain the various forms of interaction between individuals in terms of the individuals themselves. The theoretical corollary implied by Tajfel's short narrative is one that explains an individual's interaction with others in terms of his and their membership in separate groups which stand in various kinds of social relations to one another.

Tajfel's story of the scorpion and turtle characterizes much of the interaction that took place in Psychology 454, applying particularly well to the distinctly different subgroups which emerged during the course of the development of this classroom group. Evidence of these subgroups is provided by Richard D. Mann in his 1967 study, Interpersonal Styles and Group Development.[2]

Mann documented the simultaneous activities of multiple subgroups that emerge during the development of self-analytical groups. These subgroups were observed to

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[1]Ibid.

[2]Mann, Gibbard, and Hartman.

form around the issue of how work should be defined. The term "work" as used by, Mann referred to anything that needed to be done. More specifically, it included the task and affective issues which faced the group. The definition of work, then, depended on the group's answer to two questions: how shall things get accomplished and how shall the emotional needs of members be met.

Because the needs, expectations, and styles of members of self-analytical groups varied widely, the capacity and willingness of members to do work also tended to vary. These differences did not go unnoticed. As a result, subgroups composed of individuals who responded in similar manners to the work situation were formed. It should also be noted that these subgroups were not mutually exclusive. If a member was ambivalent about conflicting strategies, that member might have associated himself with more than one subgroup.

When the writer applied Mann's findings in an informal analysis of the discussion that was taking place in Psychology 454, the simultaneous expression of varied feelings directed toward each subgroup could be seen in many of the comments. The discussion no longer seemed to be just a conversation about some topic, but, instead, seemed to reflect an ever changing array of alliances--an ongoing struggle in which individuals were acting collectively to alter the manner in which others approached the task and affective issues facing the group.

Two questions thus arose: How were these sequences of collective action patterned? How did each element of the struggle between subgroups lead to the next element? In short, what was the process by which these subgroups were operating?

Ivan Steiner explained the importance of these questions in his presentation of the first annual Katz-Newcomb lecture.[1] In his presentation, Steiner developed two contrasting pictures of social psychology similar to those suggested by Tajfel's short narrative. Listeners were first asked to consider what Steiner calls the "'individualistic' orientation which holds that the organism is a relatively self-contained unit, any action of which reflects the internal states or processes of that unit. This is the approach that has dominated most of traditional psychology."[2]

In addition to the individualistic approach, the "group" approach, which presumes that "the individual is an element in a larger system--a group, organization, or society" was outlined by Steiner.[3] The group approach directs the researcher to:

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[1]Ivan D. Steiner, "Whatever Happened to the Group in Social Psychology?" 1973 Katz-Newcomb Lectures in Social Psychology delivered in Ann Arbor, Michigan, 20 April 1973.

[2]Ibid., p. 4.

[3]Ibid.

> . . . look for causes that are located outside the individual himself, in the collective actions of others, or in the constraints imposed by the larger system . . . [while the individualistic view, instead, focuses the researcher's attention on] . . . proximal causes that are very close in a causal chain to the behavior that is to be explained.[1]

Having made these initial observations, Steiner then offers the following analysis of why researchers have tended to reject the group approach in favor of the "individualistic" orientation: ". . . in the late 40's, social psychology seemed to be emerging as a discipline that . . . would connect the proximal with the distal, [and] the internal with the external. . . . [However] . . . "it didn't happen."[2] According to Steiner, by the late 50's social psychology had instead:

> . . . largely renounced or postponed its concern for larger social systems and had centered its attention on internal states and processes--dissonance, attitudes, attributions . . . Studies conducted previous to World War II had . . . a lot to say about the quality of the decisions or products generated by ad hoc groups. But they had little to say about what actually happens within a group. Instead of observing process . . . the usual procedure was to vary the size or composition of the group and see what happens to the group product.
>
> If the prewar period emphasized outcomes and neglected process, the postwar epoch reversed that trend. Bales launched a program of research designed to reveal who does what when, and Festinger explored communication processes in small groups.[3]

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[1]Ibid.

[2]Ibid., p. 7.

[3]Ibid., pp. 7-9.

These and later investigators, however, elected to study process under only the most rigorously controlled conditions. Steiner explains the problem:

> Instead of dealing with long sequences of collective action that move in whatever direction nature may dictate, [researcher's elected instead to create their] own short sequences that [wouldn't] get out of hand. . . . A single naive subject [was put] in the midst of three or four accomplices . . . [to] see how he [reacted] to this prefabricated environment. [Did] he conform, engage in helping behavior, choose the cooperative alternative, become aggressive, or end up using a lot of plural nouns. The conclusions [reached by these researchers were thought] to be reliable because [they] had after all, carefully controlled the events to which [their subjects were] responding; half or maybe seven-eights of the ongoing process [being] preprogrammed to run exactly as [they wished] it to. [The] subject [had] only to fill in the blanks [these researchers had] left for him. [The subject told] us how a tree will behave in the forest we [had] contrived. But it is a one-way process; we [didn't] learn how the forest reacts to the tree, or whether forests ever behave the way our programmed subjects [had].[1]

Yet as Tajfel explains: "Groups, like individuals, adapt to their environment, social and physical. In adapting, groups, like individuals, create new environments, and in doing so they change themselves. The social environment of a group is composed of other groups in a continually changing kaleidoscope of intergroup relations."[2]

The purpose of this study is to learn more about this aspect of a group's environment--to peer into the

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[1]Ibid., pp. 10-11.

[2]Tajfel, p. 60.

kaleidoscope and observe the relationship between the behavior enacted by one group and the subsequent behavior enacted by other groups. Specifically, the research strategy adopted to accomplish this purpose is the investigation of two questions:

1. How are lengthy sequences of subgroup behavior patterned?
2. On what variables do the formation of these patterns depend?

These questions are a departure from the tradition that has sought to determine how people are likely to react in situations they might encounter in a group, e.g. do subjects conform, help one another, become aggressive, or finish the session using a lot of plural nouns?[1] The questions asked in this study are intended to determine how groups create situations for one another and how each act of collective behavior leads to the next. The answers to these questions will be informative because they will reveal much about the process by which groups operate. It is for this reason that they were chosen for study.

Summary

The content of this dissertation was introduced to the reader in two divergent ways. One way directly traced the roots of this study to the "group" approach to social

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[1]Steiner, p. 10.

psychological theory--an approach which sought to explain an individual's interaction in terms of his group membership. The second method related this study to the researcher's own struggle to work within and learn from a specific group, Psychology 454, a classroom course in which students were encouraged to participate in the dual process of creating and analyzing the data of human interaction. The purpose of this introduction was to recreate for the reader the context out of which the two questions of the study arose. This was accomplished by interweaving the professional literature with the time spent by the author functioning as a group participant.

CHAPTER II

ISSUES AND THEORIES IN INTERGROUP COMMUNICATION: A SELECTIVE REVIEW

The introduction to this dissertation stressed that intergroup behavior has not been a prominent topic of social-psychological theorizing. Rather, the important and influential theoretical research has advanced an "individualistic view" which locates the varied causes of behavior inside the individual himself. There has been some work, however, in the area of intergroup relations, some of it worth the reader's attention. This chapter will review this "ingroup-outgroup" literature. The overview is divided into two major topics: The determinants and the effects of ingroup differentiation.

Determinants of Intergroup Differentiation

The division of people into "us" and "them," "we" and "they" is a process that researchers have named "intergroup differentiation." The process of intergroup differentiation explains how groups come to identify themselves as a group and distinguish themselves from other groups. This process has been studied as a function of conflict, competition, perceived inter-individual

similarity, perceived dissimilarity with outgroups, and more recently, mere categorization.

The Convergence or Conflict of Interest Approach

Experimental research into the conditions under which groups differentiate themselves from other groups has been conducted for about two decades. Two well-defined trends can be identified within these studies: the work of Muzafer Sherif and the work of Henri Tajfel.

Muzafer and Carolyn Sherif and their co-workers conducted three experiments: one in Connecticut in 1949; another in upstate New York in 1953; and the third in Oklahoma in 1954.[1] These experiments demonstrate how conflicts develop and how they are resolved. Essentially the same procedure was followed in each experiment; however, because variations based upon earlier findings were introduced into the third and final study, this last study has been chosen for review.

Preadolescent boys who believed they were attending camps established to study camping methods served as subjects. These boys arrived on two separate buses and settled into cabins that were separated by considerable distance. Contact between the two groups was not permitted during this stage of the experiment.

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[1]Muzafer Sherif et al., Intergroup Conflict and Cooperation: The Robber's Cave Experiment (Norman, Oklahoma: University Book Exchange, 1961); Muzafer Sherif, Group Conflict and Cooperation: Their Social Psychology (London: Routledge and Kegan Paul, 1966).

The first week's activities were planned to develop cohesiveness and solidarity within these groups. The boys participated in enjoyable events such as camping out, cooking meals, improving a swimming hole, boating, clearing athletic fields, and various games. The hypothesis tested during this phase of the experiment was: "When a number of individuals without previously established relationships interact in conditions that embody goals with common appeal value and that require their interdependent activity for attainment, over time, a group will form."[1]

Eventually, each group did achieve its own identity. Both groups manifested signs of "we" feeling and pride in joint accomplishments that identify a group. Tough fighting names--Eagles and Rattlers--were selected, and flags were created by each group despite the fact that there was no contact between the two groups. This phase of the experiment demonstrated that intergroup contacts were not essential to the formation of ingroups. Common goals and shared activity were judged to be the essential variables needed for ingroup formation.

The second week's activities were planned to determine the conditions sufficient for the production of intergroup differentiation. The dependent measure of intergroup differentiation was the expression of hostile

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[1]Muzafer Sherif and Carolyn W. Sherif, Social Psychology (New York: Harper and Row, 1969), p. 232.

feelings toward the other group. The more intense the expression of negative feelings toward the other group the greater the level of differentiation taking place between groups. As soon as the Rattlers and Eagles discovered each other's presence, they issued challenges to each other to compete in baseball, touch football, and various other forms of competitive activities.

The experimenters intervened at this point to introduce the independent variable of their study. This variable consisted of a variety of activities embodying goals in which success by one group led to frustration in the other group. Large drawings of two thermometers were used to dramatize the cumulative score of each group. Prizes were awarded to tournament winners as a group. The tournament started with a spirit of good sportsmanship; however, as the tournament progressed from event to event the feeling of good sportsmanship began to fade. The experiments showed that the sustained conflict over mutually sought goals--goals that only one group could attain--is a sufficient condition for the expression of hostile feelings toward and derogatory images of the rival group. Studies by Blake and Mouton and Bass and Duntemann support the results of these studies.[1]

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[1]Robert Blake and Jane Mouton, "Comprehension of Points of Communality in Competing Solutions," Sociometry 25 (October 1962): 56-63; B. M. Bass and George Dunteman, "Biases in the Evaluation of One's Own Group, Its Allies, and Opponents," Journal of Conflict Resolution 7 (March 1963): 16-20.

The Categorization Approach

The series of field-experiments conducted by Sherif and his co-workers showed the process of intergroup differentiation to be a function of two variables: (1) cohesiveness and solidarity within groups, and (2) competition for goals that only one group can achieve. A second group of researchers have sought to determine the minimal conditions necessary for the arousal of intergroup differentiation. Their research indicates that the independent variable in the Sherif studies, competition, is not a necessary condition for creating intergroup discrimination.

In a 1972 paper, Tajfel described a phenomenon that he termed the "deductive categorization error."[1] This phenomenon occurs when it is known that stimuli belong to different categories. Stimuli are judged to be more different under these conditions than when it is not known that the stimuli belong to different categories.[2] Evidence for the existence of this phenomenon was provided by a 1963 study conducted by Tajfel and Wilkes.[3] Using eight lines of different length, these researchers

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[1]Henri Tajfel, "La Categorisation Sociale," in Introduction a la Psychologie Sociale, ed. S. Moscovici (Paris: Larousse, 1972), pp. 272-302.

[2]Ibid.

[3]Henri Tajfel and A. L. Wilkes, "Classification and Quantitative Judgement," British Journal of Psychology 54 (December 1963): 101-104.

demonstrated that subjects see a greater difference between the length of the lines when the letter A is systematically assigned the four shorter lines and B the four longer lines than when no labels are assigned. In other words, stimuli labeled alike are perceived differently than unlabeled stimuli. This difference has been more recently termed the categorization effect. The categorization effect has been confirmed by a number of other experimenters.[1] Non-social stimuli such as lines and squares have been used in some of these experiments, while others have used social stimuli such as attitude statements.

Tajfel's discovery of the categorization effect lead him to hypothesize that conflict was not needed to create intergroup differentiation. Ferguson and Kelley confirmed that intergroup differentiation could occur in the absence of conflict.[2] In their experiment, subjects were randomly divided into two groups and asked to complete assigned tasks. The goals of the two groups did not conflict, yet both groups rated their own group's performance above the other group's performance. Each

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[1]W. Lilli, "Das Zustandekommen von Stereotypen Uber Einfache und Complexe Sachverhalte, Experimente Zum Klassifizierenden Urteil," Zeitschrift fur Sozialpsychologie 1 (1970): 57-79; B. Marchand, "Auswirkung Einer Emotional Wertvollen und Einer Emotional Neutralen Klassifikation auf die Schatzung Einer Stimulusserie," Zeitschrift fur Sozialpsychologie 1 (1970): 264-274.

[2]C. K. Ferguson and H. H. Kelley, "Significant Factors in Over-evaluation of Own Group's Product," Journal of Abnormal Social Psychology 69 (August 1966): 233-228.

group's preference for their own product was accepted by Ferguson and Kelley as evidence of intergroup differentiation occurring in the absence of conflict.

Two subsequent studies were conducted to test the hypothesis that, in addition to social categorization, the anticipation of future interaction between and within the groups was necessary for intergroup differentiation to occur.[1] To test this hypothesis a control condition was included in each of the studies. After initial interaction, subjects in these control groups were led to believe that there would be no future interaction during the course of the experiment. Subjects in the experimental condition were given to understand that they would undertake, as a group, a common task later in the experiment. The results of these studies showed that "group classification *per se* was insufficient to produce discriminatory evaluations."[2]

Tajfel, Billig, Bundy, and Flament disagreed with Rabbie's conclusion that group classification alone was insufficient to produce discriminatory evaluations.[3]

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[1]J. M. Rabbie and M. Horowitz, "The Arousal of Ingroup-Outgroup Bias by a Chance Win or Loss," Journal of Personality and Social Psychology 13 (March 1969): 269-277; J. M. Rabbie and G. Wilkens, "Intergroup Competition and Its Effects on Intragroup and Intergroup Relations," European Journal of Social Psychology 1 (1971): 215-234.

[2]Rabbie and Horwitz, p. 272.

[3]Henri Tajfel et al., "Social Categorization and Intergroup Behavior," European Journal of Social Psychology 1 (March 1971): 149-178.

Specifically, Tajfel argued that the control condition used by Rabbie did not provide an adequate test of the categorization effect because ". . . the quality of 'groupness' [was not made] relevant to the situation."[1] Without a quality of "groupness," the effects of social categorization were not, and could not, have been observed by Rabbie and his co-workers because, according to Tajfel, the variable itself was not operational.

In order to provide a more appropriate test of the effects of group classification, Tajfel et al. conducted a series of experiments designed to assure that the quality of "groupness" would be relevant to the situation.[2] The quality of "groupness" was provided by creating the impression among subjects that their division into two groups was based on actual differences between subjects. When tested under these conditions, a clear preference from one's own group emerged, confirming the hypothesis that social categorization alone is sufficient to produce discriminatory evaluations.

Unfortunately, Tajfel's demonstration of we-they bias is weak and unsatisfactory due to a methodological flaw. Participating in groups of three, subjects in Tajfel's 1971 experiments first performed a relatively trivial task (guessing numbers of dots). They then worked

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[1]Ibid., p. 152.

[2]Ibid.

separately to decide how points which were worth money would be divided between the two other subjects. Subjects knew their own group membership (under-or-over-estimation of dots) and they knew the group membership of those among whom they were dividing the points. Subjects were, therefore, faced with a forced-choice situation--favor one or the other of two groups. With nothing to base their decisions on but the group categories, it is not surprising that the subjects distributed outcomes with regard to group distinction. The demand characteristics of the situation virtually assured the observed bias the favoring of each subject's own group.[1]

Gerard and Hoyt conducted an experiment designed to assure that the quality of "groupness" was relevant to the situation and to eliminate the demand characteristics of the Tajfel experiments.[2] Participating in groups of ten, subjects in the Gerard study guessed numbers of dots and wrote a short description of a scene in a painting. Subjects were then told they were either an overestimator or an underestimator of the number of dots shown. Next, subjects were asked to evaluate the essays of two fellow subjects, one an overestimator and the other an

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[1]Ibid., H. B. Gerard and M. F. Hoyt, "Distinctiveness of Social Categorization and Attitude Toward Ingroup Members," Journal of Personality and Social Psychology 29 (June 1974): 836-842.

[2]Gerard and Hoyt.

underestimator. Unlike the Tajfel studies, the evaluation of essays did not require (or demand) that one group be favored over another. The essay of each group could receive the same score. The results of this experiment supported the hypothesis that social categorization alone is sufficient to produce discriminatory evaluations.

Although much remains to be done in testing the link between intergroup differentiation and conflict of interest versus the link between intergroup differentiation and social categorization, two tentative conclusions can be drawn. First, the attachment of intergroup differentiation to a conflict of interest between group goals is too restrictive. It has been demonstrated that even in conditions where there is no actual conflict of interest, intergroup differentiation occurs.[1] Second, the explanation afforded by the categorization approach has been the more extensively tested theory. It appears, therefore, that the development of group affiliations, rather than the phenomenon of hostility toward groups, is the more probable determinant of intergroup differentiation.

Effects of Intergroup Differentiation

The research reviewed clearly reveals the existence of two effects that can be linked to the adoption of a

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[1]Rabbie and Horwitz; Rabbie and Wilkens; Tajfel, et al., "Social Categorization."

we-they orientation toward a social environment. The mere act of differentiating between one's own group and other groups clearly alters the various relationships that had existed between individuals prior to the division of the social environment. Accompanying the act of intergroup differentiation is the advent of "ingroup relations" (the manner in which individuals relate to members of their own group) and the advent of "outgroup relations" (the manner in which individuals relate to the members of other groups). The simultaneous advent of both ingroup and outgroup relations are two direct effects of intergroup differentiation.

Evidence for the advent of ingroup relations (subsequent to intergroup differentiation) is provided by the Sherif experiments which demonstrated that the manner in which individuals relate to other individuals is altered by the division of the social environment into "we and they."[1] In two of the three experiments using summer campers as subjects, the participants were housed in one big bunkhouse. When friendships were observed to form, each boy was asked who his best friends were in the camp. Subjects were then divided so that about two-thirds of the best friends were housed in separate cabins. Following a period of group formation, the boys were again asked to

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[1]Sherif and Sherif, Social Psychology.

name their best friends. More than half of the choices shifted toward friendships within the newly-formed groups.

The formation of ingroups, however, necessarily produces outgroups. With the formation of ingroups there is a division of the social environment, and hence an alternative group emerges with which to interact. The formation of ingroups then, by necessity, gives rise to outgroups. The differentiation process also indirectly affects the type of relations that occur between groups by deterring cooperation.

Ingroup bias has been repeatedly used to measure the degree to which subjects differentiate between their own and other groups.[1] These investigations have studied ingroup bias as a dependent variable.

Tajfel, Tajfel et al., and Doise et al. have documented the relationship between intergroup differentiation and ingroup preference or bias.[2] These experiments

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[1]Sherif et al., Conflict and Cooperation; R. Blake and J. Mouton, "Over-evaluation of Own Group's Product in Intergroup Competition," Journal of Abnormal Social Psychology 64 (March 1962): 237-238; Bass and Dunteman; Tajfel et al., "Social Categorization"; Rabbie and Horwitz, Rabbie and Wilkens, W. Doise and A. Sinclair, "The Categorisation Process in Intergroup Relations," European Journal of Social Psychology 3 (1973): 145-157.

[2]Henri Tajfel, "Experiments in Intergroup Discrimination," Scientific American 223 (November 1970): 96-102; Tajfel et al., "Social Categorization and Intergroup Behavior"; W. Doise et al., "An Experimental Investigation into the Formation of Intergroup Representations," European Journal of Social Psychology 2 (November 1972): 202-204.

followed the same basic design used in Tajfel's 1971 experiment, previously reviewed. Subjects first were divided into groups on the basis of some trivial task. They were then instructed to award money to other subjects by making choices according to specially prepared payment matrices. The results of these experiments consistently demonstrated that subjects use their minimal group classifications to show strong ingroup preferences in their payments, even though their choices have no utilitarian value for these subjects themselves.

Sherif et al. reported a similar finding.[1] Two groups of boys competed in picking up beans that had been scattered on the ground. After the competition, an image of what was alleged to be the collection of each boy was shown to the entire group and subjects estimated the number of beans shown in the picture. The estimates of the subjects showed a strong tendency toward overestimation of the productivity of the members of their own group.

Other studies have investigated ingroup bias as an independent variable, testing the effects of ingroup bias on intergroup cooperation.[2] These studies consistently demonstrated ingroup bias to be detrimental to intergroup cooperation. The experiments conducted by Sherif, for example, demonstrated that ingroup preference was at its

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[1]Sherif et al., Intergroup Conflict.

[2]Ibid.; Blake and Mouton.

height when intergroup conflict was most severe.[1] Blake and Mouton observed an ingroup bias displayed by subjects who were given the opportunity to interact on a mutual task after they had been divided into two groups.[2] Their measure of ingroup bias was the tendency for ingroup members to rate their own product higher than the product of an outgroup. Each group then chose members to represent them in negotiating a common solution to the problem that each group had sought to solve. During the negotiations, each group was allowed to send notes to instruct their representative. Content analysis of these notes revealed that the majority of the messages were aimed at the destruction of the rival's proposals, with very little content urging the negotiators to explore similarities. The content of these notes was accepted as evidence that ingroup bias is detrimental to intergroup cooperation.

Sherif's 1954 study also documented the effect of intergroup differentiation on the permeability of group boundaries.[3] Near the end of the experiment the two groups were taken to a nearby lake for an outing. Despite the fact that the beach was crowded, each group stuck together and consciously avoided members of the other group. The

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[1]Sherif and Sherif, Social Psychology, p. 261.

[2]Blake and Mouton.

[3]Muzafer Sherif and Carolyn W. Sherif, Groups in Harmony and Tension (New York: Harper & Row, 1955).

behavior of the boys indicated the degree to which the group boundaries, as a result of intergroup differentiation, had become impermeable. The same study by Sherif demonstrated that where impermeable boundaries existed cooperation did not take place even when there was contact between the two groups of boys as equals and when there was encouragement by the adult staff to act cooperatively.[1]

Two intervening variables, ingroup bias and permeability of group boundaries, link intergroup differentiation with an apparent inability of groups to cooperate. Unlike cooperation, intergroup confict is directly affected by the differentiation process. The strongest evidence for the existence of a direct link between the differentiation process and intergroup conflict is provided by researchers Ferguson and Kelley in their 1966 study.[2] The purpose of their study was to investigate the overevaluation effect. Of greater interest, however, is the attempt made by these researchers to minimize competition between groups. In order to accomplish the minimization of competition, minimal groups with very little prior history of interaction were used. In addition, all direct suggestions that the groups were in competition were eliminated. In the postexperimental

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[1] Ibid.

[2] Ferguson and Kelley, "Over-evaluation."

discussions, however, subjects repeatedly reported that they felt a strong tendency to compete--that they defined the situation as one in which they wanted to excel the other group in their productions. The conclusion drawn by these researchers was that "the sheer presence of another group working on the same task leads to a tendency to compare results. With this comparison, the seeds of competitive feelings and behavior are sown. It appears that the foundations of intergroup conflict are exceedingly easy to lay."[1]

Further support for the existence of a direct link between intergroup differentiation and intergroup conflict is provided by Rabbie and Horwitz in a pilot experiment for their 1969 study of ingroup-outgroup bias.[2] In the pilot experiment, these researchers found that "well-developed groups working face-to-face on a cooperative task . . . become antagonistic."[3] A direct link between intergroup differentiation and intergroup conflict has then been established by Ferguson and Kelley and Rabbie and Horwitz.

Ingroup-Outgroup Process

Studies by Sherif, Tajfel, Rabbie, Horwitz and others reviewed in this chapter have conveyed the major

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[1]Ibid. p. 227.

[2]Rabbie and Horwitz, "Ingroup-Outgroup Bias."

[3]Ibid., p. 269.

themes investigated in the area of intergroup relations. These studies have sought to determine how groups create situations for one another and how one situation leads to the next. The questions asked by these researchers are far from the mainstream of group research that has sought, instead, to determine how people are likely to react in situations they might encounter in a group (e.g., do subjects conform, help one another, become aggressive, or finish the session using more plural nouns than when they started).

The purpose of the present study is to conduct an investigation of the process by which groups relate to each other. In this regard, the present study is in the tradition of the studies reviewed in this chapter--studies that have sought to determine how groups create situations for one another and how one situation leads to the next.

Sherif, Tajfel, Rabbi, Horwitz and others have, however, elected to study intergroup relations under conditions in which there was experimental manipulation, either to introduce an independent variable or to implement an experimental control. To this point in time, there have been no studies that have sought to "investigate long sequences of collective action that move in whatever direction nature may dictate."[1] The present

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[1]Steiner, p. 9.

study has, therefore, been undertaken to investigate the process by which groups relate to one another in a natural setting. The artificiality of the experimental situation will be avoided in the hope of increasing the generalization of this study's conclusions.

Summary

This chapter has reviewed previous investigations into the determinants and effects of intergroup differentiation. This review was undertaken to establish for the reader those areas in which the bulk of the research on intergroup behavior has been conducted. This review also was undertaken to familiarize the reader with the terminology used in this study. Specifically, the concepts of ingroup and outgroup relations were defined in accordance with their current usage in the literature. Finally, attention was then given to the specific ambiguities which this dissertation will attempt to resolve.

CHAPTER III

METHODOLOGY: THE DATA AND THE MEMBER-SUBGROUP SCORING SYSTEM

The purpose of this chapter is to describe the data investigated and to present the scoring system developed for this study. The first topic of discussion will be the nature and composition of the group chosen for analysis. Most of the discussion, however, will be devoted to an explanation of the structure and application of the scoring system.

The Group

The group selected for study was conducted under the auspices of the Harvard Summer School and subsequently investigated by Mann.[1] In addition to several general descriptions which have appeared in the literature, the nature and composition of this type of group has been described in great detail by Mann.[2] A number of points

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[1] Mann.

[2] T. Mills, Group Transformation: An Analysis of a Learning Group (Englewood Cliffs, N. J.: Prentice-Hall, 1964); P. Slater, Microcosm: Structural, Psychological and Religious Evolution in Groups (New York: Wiley, 1966); Mann.

covered by Mann are repeated here to illustrate the unique structure and content of these groups.

The group studied was a classroom group carrying the catalog description of Social Relations 120e: Analysis of Interpersonal Behavior. Membership in the group was determined by the University's registration procedure. The "official" goal of the course was "to improve the student's ability to observe, analyze, and understand behavior in interpersonal relations."[1] These groups were somewhat unique in that once the course was underway the instructor did not adopt the usual didactic role but chose instead to play a passive role, restricting his participation to periodic interpretative interventions. Thus, the group was its own case study.

The decision to use the data from this group for the present study was based on three reasons. First, these data consisted of group behavior in a natural setting and, therefore, were well suited to answering the questions proposed in this study. Second, the validity of conclusions reached by those who have studied interpersonal behavior has been difficult to discern largely because of the dissimilar research traditions from which so many of the studies have stemmed--each researcher examining a different type of group and often aiming at different goals. An analysis of previously interpreted data will have

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[1]Ibid., p. 9.

the added advantage of affording better control over the variance that results from widely diverse research traditions. Finally, there was the added advantage that these discussions were completely transcribed.

The Subgroups

Four subgroups that emerged in the first three sessions of the group chosen for study were identified by Richard Mann in his 1967 investigation of the same parent group. During these three sessions Mann observed tension developing between those members who were urging the group to see the new situation in terms of a nurturance theme and those members who were pressing for the centrality of the control/competence theme.[1]

Mann identified a group of members, operating within the context of the nurturance theme, who perceived the leader as having abandoned the group. Their goal was to induce the leader to take charge of the group, to be more assertive and directive. While having the same goal in common, members operating within the context of the nurturance theme differed over which strategy to employ to encourage the leader to play a more dominant role. One group pressed the strategy of dependency and hostility. Their strategy accounts for the name given to them by Mann,

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[1]These themes are discussed in considerable detail in Mann's text, Interpersonal Styles and Group Development, pp. 105-110.

the Dependent Complainers. A second group emphasized obedience and devotion to the leader as a means of encouraging the leader to be more assertive. This group was appropriately named the Loyal Compliants.

Unlike these first two subgroups, a second group of members were quite content with having an inactive leader. These were the people operating within the control or competence themes. Those persons operating within the control theme feared being manipulated by the leader. Accordingly, the goal of this group was to further undermine and weaken the leader. Those persons operating within the competence theme were desirous of the opportunity to display their self-sufficiency. Accordingly, the goal of this group was to encourage the leader to remain passive and nondirective so that they might have the opportunity to exercise their own leadership. While sharing the same goal, those persons operating within the control and competence themes differed over which strategy to employ to encourage the leader to continue playing a passive role. Those operating in the control theme pressed their strategy of flight from and hostility toward the leader. These members were named the Counter-dependents. Those operating in the competence theme sought to encourage the leader to remain nondirective by acting as his colleague and extending support to him. These members were appropriately named the Self-sufficients.

These then were the four subgroups investigated in this study: the Dependent Complainers, the Loyal Compliants, the Counterdependents, and the Self-sufficients. Each of these subgroups has been assigned a brief identifying label to simplify the discussion of their behaviors. A list of subgroups and their corresponding labels are presented below:

Subgroup A--Dependent Complainers

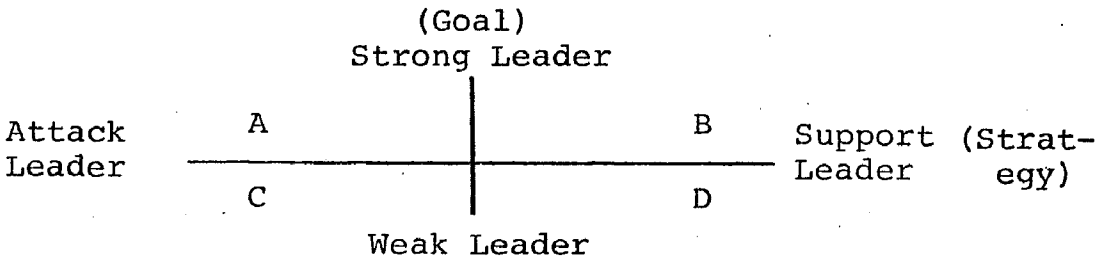
Subgroup B--Loyal Compliants

Subgroup C--Counterdependents

Subgroup D--Self-sufficients

The extent to which specified combinations of these four groups share the same goals or the same strategies has been emphasized by the writer to assist the reader in conceptualizing their separate identities. When plotted in a two-dimensional space, the similarities between subgroups in their goals and strategies can be clearly seen. Figure 1 illustrates where each of the four subgroups would be placed in a two-dimensional space defined by the variables of goal and strategy.

Fig. 1.--Goal and Strategy: A Two-Dimensional Space



Subgroups A and B and subgroups C and D are shown in Figure 1 to share common goals. Subgroups A and C and Subgroups B and D are shown in Figure 1 to share common strategies. Hence, the groups that share the same goals differ in strategies and the groups that share the same strategies differ in goals. This description of the similarities and differences between subgroups appears to be a reasonable one, given the identity of the four subgroups. Empirical evidence in support of this paradigm will be presented in Chapter V.

The number of members in each of the subgroups during the three sessions varied with every speech given. Nevertheless, an approximation of the number of members in each of the subgroups at any given point in time would be needed in the analysis of the data. The procedure followed to estimate the size of subgroup membership throughout the three sessions was to record the frequency with which every person placed himself within each of the subgroups. The subgroup within which a person most often placed himself was then designated as the subgroup in which that person was a member. Table 1 reports the membership totals for each subgroup.

TABLE 1

MEMBERSHIP TOTALS FOR EACH SUBGROUP

Subgroup	Total
Dependent Complainers (A)	7
Loyal Compliants (B)	7
Counterdependents (C)	4
Self-sufficients (D)	6

The Member-Subgroup Scoring System

The primary data source for this study consists of interaction scores produced by the Member-Subgroup Scoring System. This system is a scheme for recording an observer's inferences about the possible relevance which each speech delivered to the group had for the speaker's: (1) perception of his own membership in the four subgroups studied (placement); (2) and value orientation toward each subgroup studied vis-a-vis assignment of value and/or acceptance/rejection of another's value orientation. This system is illustrated in Table 2.

The primary defining characteristics of each of these content categories are outlined below.

Places Self

Acts of self-placement occur when a member enacts the strategies and normative prescriptions of a subgroup.

TABLE 2

THE MEMBER-SUBGROUP SCORING SYSTEM

Area	Sub Area	Content Category
Placement	Self	1. Places Self
Value	Assignment	2. Assigns Positive Value 3. Assigns Negative Value
	Acceptance/Rejection (positive value)	4. Accepts Positive Value 5. Rejects Positive Value
	Acceptance/Rejection (negative value)	6. Accepts Negative Value 7. Rejects Negative Value

Usually, acts of self-placement take the form of acting out emotions and opinions that are modal to the range of feelings that a subgroup is collectively expressing. Most instances of self-placement are as clear and unmistakable as the following:

> . . . I think the effect of the paper topics, the paper assignment and the fact that people have to think about what they write in their papers, as well as the fact that everybody has to do the same thing, is an inhibitory force. It really interested me that the paper assignments were handed out so sloppily and that Dr. Allen didn't remember to hand them out for two days, and tried to catch people as they went out the door and say, "You forgot my gift." I think that it's kind of indicative that to some extent he's been pushed out of things and that he's not quite, you know, ready to accept this.

The member expressing these feelings is clearly acting out the emotions and opinions that, in this instance, are being collectively held by those members who seek to

avoid dependency on the leader, the Counterdependents. In this instance, their strategy is to demonstrate their ability to perform the leader's role as well as, or better than, the leader himself.

Assigns Value

Acts scored as value-assignment are judgmental statements that categorize (positive or negative) the actions of subgroups. Actions are categorized by members as positive or negative according to whether the actions facilitate or obstruct a pattern of development that the individual desires for the parent group.

Positive Value

Acts that acknowledge the strategies and normative prescriptions of a subgroup to be a correct solution to the complications confronting the parent group are scored as assigning positive value. This category of acts is illustrated by the following examples:

(1) I think you make a very good statement.

(2) The reason he does that--maybe I'm commenting in the dark--is that he takes chances and brings about prophecies whereas other people don't want to do so. . . .

Negative Value

Acts that assert the strategies and normative prescriptions of a subgroup to be an incorrect solution to the complications confronting the parent group are scored

as assigning negative value. The following examples illustrate acts that assign negative value:

(1) It's kind of interesting . . . that during the first couple of weeks . . . you asserted your right as an individual and I assume therefore the rights of everyone else in the group to be individuals and now you're trying to put everybody into a collective mass kind of--everybody are the little sheep . . . and that seems terribly inconsistent with what you were thinking or attempting to do at the beginning of the group. I wonder why you've changed.

(2) Here you're going. You're trying to put everybody on an equal plane in a much more overt way, saying that there are good contributions and there are bad contributions which everybody makes, and there are some people who make no contributions--I don't see how you can lump them together, people who make good contributions and bad contributions.

Accepts/Rejects Assigned Value

Inclusion of this category was necessitated when it was observed that the values assigned to subgroups do not go unnoticed, nor unresponded to by other members of the parent group.

Accepts

Accepting acts are those in which the value assigned to a subgroup is declared by another to be consistent with the value he has assigned (publicly or privately) to that same subgroup. The accepting act validates the judgments of others as correct. Direct acceptance is shown by Roger for the negative value that Susan places on the Counterdependents in the example presented below:

> Roger: I had the same feeling that Susan has just been talking about . . . that you kind of spoke for the whole group . . . that you are a little bit authoritarian and inclined to just more or less lump everybody here into a kind of mass, and speak for them. . . .

Rejects

Acts of rejection designate the value assigned to a subgroup to be inconsistent with the value the speaker has assigned (publicly or privately) to that same subgroup. The rejecting act contradicts the judgments of others. A direct form of rejection is illustrated by Frank's response to Alvin, an Episcopal minister, who in his speech is attempting to assign a negative value to the Loyal Compliant subgroup.

> Alvin: I always react when people speak of Dr. Allen's group or giving him this note that we're--to me takes away the dignity which each of us has as a person to be classified as his group. I react the same way in fact a little bit to church terminology when you say some clergyman's church. To me that is really an insult to the dignity of the individuals who make up the church.
>
> Frank: If you carry that to an extreme when you say God's people--isn't that an insult too?

The member's responses are reflected in what the system designates as areas: (1) Placement and (2) Value. The Placement area contains one subarea, which in turn contains one category. The Value area contains four subareas, each subarea containing two categories. The reason for stressing the structure of the scoring system is that an important scoring convention requires that the seven categories be divided into the four subareas; the

the convention is: An act, i.e. each individual speech given by members, may be scored in as many subareas as seems appropriate but no more than one category within a subarea may be used to score the responses made by a member toward any one subgroup.

This scoring convention specifies the level at which the categories are to be regarded as mutually exclusive. In doing so, the convention protects one salient aspect of reality from violation. The problem, simply stated, is that frequently the acts of members can be both accepting and value assigning, or rejecting and value assigning. This scoring convention permits the double scoring of these acts while retaining mutual exclusivity.

The Unit of Analysis

The nature of the scoring system left little choice as to the unit of analysis. While each of the four subareas could be enacted in a single sentence, more often than not, several sentences had to be considered simultaneously before a behavior defined by one of the subareas could be identified. Accordingly, in this study one of two events signaled the end of an act: (1) if the speaker was interrupted by another member or (2) if the speaker shifted his behavior to acts that called for the double scoring, within the same subarea, of the responses made toward any one subgroup. Contrasted with studies

which have used the simple sentence as the unit analysis, this approach provides the rater with the opportunity needed to examine shadings of many phrases and sentences.

Reliability of the Scoring System

Thematic analysis, which was necessitated by the nature of the Member-Subgroup Scoring System, complicated the process of determining the level of reliability with which the system was used. Because there was no absolute physical guide for raters--the sentence ends with a period, the paragraph is set off by indentation and so on--there was no mechanism to guarantee that raters would score identical units. As it turned out, however, the lack of a mechanism that would assure an analysis of identical units caused no serious problem. Only 3 percent of the speeches presented were subsequently divided into separate units by independent raters. Consequently, an act-by-act comparison was possible.

The reliability of the scoring system was then tested in two ways: One approach compared two scorers working on the same material, and a second approach compared one scorer scoring material before and after a six-month time interval. The coefficient of reliability used was the ratio of coding agreements to the total number of coding decisions. The percentage of all comparisons made that were in agreement between the two scorers working on the same material was 73 percent, and

the percentage of comparisons that were in agreement for the single scorer who recorded material was 88 percent. These percentages were accepted as evidence of a satisfactory level of reliability for the Member-Subgroup Scoring System.

Summary

This chapter has introduced the group of which this dissertation has made a case study. In addition, the components of the Member-Subgroup Scoring System have been reviewed and discussed. Finally, the unit of analysis used in this study and the reliability of the scoring system were presented and discussed.

In the next chapter, a more specific statement of the study questions will be presented. The relationship between the data generated by the Member-Subgroup Scoring System and the study questions will be specified. The remainder of the chapter will present a discussion of the statistical techniques used to implement the data in resolving the study questions.

CHAPTER IV

THE METHOD OF DATA ANALYSIS

This study has been undertaken for the purpose of describing the process by which groups operate. The research strategy adopted to accomplish the purpose of this study has been to conduct an investigation of the interaction patterns between four subgroups. In investigating the interaction patterns of these four subgroups, two questions were asked. They were:

1. How are lengthy sequences of subgroup behavior patterned?
2. On what variables does the formation of these patterns depend?

Answers to these questions were derived from an investigation of two variables: the expression of affect within and between subgroups and the flow of people from one subgroup to another subgroup. The purpose of this chapter is to provide the reader with a step by step review of the procedure followed in the investigation of these two variables.

The first step in the research strategy was to record the occurrence of the variables chosen for study. The instrument developed for this purpose was the

Member-Subgroup Scoring System. A detailed description of this system was presented in Chapter III. The relationship between the data generated by the Member-Subgroup Scoring System and the principal study questions is indirect because the study questions specify the behavior of groups as the object of study while the scoring system records the acts of individuals. Inasmuch as the actions of groups and individuals are not, however, mutually exclusive,[1] a close connection exists between the data generated by the Member-Subgroup Scoring System and the principal questions of the study.

Forming Units of Collective Behavior

Faced with a close, but not direct connection between the data needed to answer the principal study question and the data generated by the Member-Subgroup Scoring System, the second step in the procedure followed was to create units of collective behavior. Units of collective behavior were formed by combining the separate acts of individuals. To combine the separate acts of individuals, cut points were set so that when members of the same group spoke consecutively the acts that had been scored for those individuals would be collapsed into one

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[1]Group behavior is, after all, the collective behavior of individuals and, therefore, not an independent entity.

interval. Using this procedure, 403 intervals of group behavior were formed.

Coding Units of Collective Behavior

The Member-Subgroup Scoring System provided raters with 123 categories for scoring an individual's behavior toward a subgroup. This large number of categories precluded the use of any analytical procedure that required the creation of a data matrix. The dimensions of the scoring system, therefore, needed to be reduced. A reduction in the number of items to be analyzed was accomplished through a third step, the standardization of collective behavior.

One statistical technique by which the number of variables can be reduced is factor analysis. Inspection of the data, however, showed that this procedure was not needed to reduce the number of dimensions in the scoring system. A simpler alternative procedure was to sum the scores of relevant items. Nunnally offers the following testimony in favor of a simple additive combination of relevant items:

> We have come a long way around to the conclusion that the most sensible way to measure psychological attributes of people is to sum scores on items. The essence of the linear model is that it does not take individual items very seriously. It recognizes that the individual item has considerable specificity and measurement error. . . . The only assumption made is that each item has some form of monotonic trace line, and even that is not a strict assumption, since some of the items could have slightly curvilinear trace lines and a linear

> relationship of total scores with the attribute would still be obtainable. . . . This model makes sense and works well in practice.[1]

The Subgroup Performance

Using the procedure recommended by Nunnally, the dimensions of the Member-Subgroup Scoring System were reduced to four variables. These four variables, termed "Subgroup Performances," are reported in Table 3. Performance scores were obtained for each interval of collective behavior by summing the component behaviors listed under each major heading presented in Table 3.

The decision whether to code an interval as a Performance I or a Performance II was made on the basis of which of the performances had the highest score. Hence, if an interval had a score of 5 on Performance I and a score of 3 on Performance II, that interval would be coded as a Performance I (subgroup was positive toward itself). This same procedure was followed to differentiate between Performances III and IV within each of the 403 intervals of group behavior.

Subgroup Defections

In addition to coding the performances given in each of the 403 intervals of collective behavior, defections that occurred in these intervals were also coded. Table 4 reports a list of the performances and defection variables that were used to code a given interval.

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[1]Jum Nunnally, Psychometric Theory (New York: McGraw-Hill, 1967), p. 74.

TABLE 3

SUBGROUP PERFORMANCES

I. Subgroup Is Positive Toward Itself

1. Makes positive statement about self
2. Accepts positive statement about self made by own group
3. Rejects negative statement about self made by own group
4. Accepts positive statement about self made by another group
5. Rejects negative statement about self made by another group

II. Subgroup Is Negative Toward Itself

1. Makes negative statement about self
2. Accepts negative statement about self made by own group
3. Rejects positive statement about self made by own group
4. Accepts negative statement about self made by another group
5. Rejects positive statement about self made by another group

III. Subgroup Is Positive Toward Another Subgroup (S)

1. Makes positive statement about S
2. Accepts positive statement about S made by own group
3. Rejects negative statement about S made by own group
4. Accepts positive statement about S made by S
5. Rejects negative statement about S made by S
6. Accepts positive statement about S made by another group
7. Rejects negative statement about S made by another group

IV. Subgroup Is Negative Toward Another Subgroup (S)

1. Makes negative statement about S
2. Accepts negative statement about S made by own group
3. Rejects positive statement about S made by own group
4. Accepts negative statement about S made by S

TABLE 3--Continued

5. Rejects positive statement about S made by S
6. Accepts negative statement about S made by another group
7. Rejects positive statement about S made by another group

TABLE 4

VARIABLES FOR CODING THE BEHAVIOR OF A SUBGROUP IN ANY GIVEN INTERVAL

Subgroup is positive toward:
1. Itself
2. Subgroup X
3. Subgroup Y
4. Subgroup Z
Subgroup is negative toward:
5. Itself
6. Subgroup X
7. Subgroup Y
8. Subgroup Z
Subgroup is neutral toward:
9. Itself
10. Subgroup X
11. Subgroup Y
12. Subgroup Z
A Defection occurs to:
13. Subgroup X
14. Subgroup Y
15. Subgroup Z
No Defection occurs to:
16. Subgroup X
17. Subgroup Y
18. Subgroup Z

Using these variables to code the units of collective behavior, a data matrix 403 x 18 was created. The data contained in this matrix was then used to answer the two principal questions of the study. The remainder of this chapter will be devoted to a discussion of how this data was treated to generate the information needed to answer the principal questions of the study.

The Construction of Frequency Tables

A series of frequency tables were constructed to provide an overview of how the most basic subgroup behavior, the frequency with which a subgroup spoke, was patterned. Frequency tables were constructed for the total number of speeches given by the subgroup, the number of speeches a subgroup directed toward itself, the number of speeches a subgroup directed toward all the other subgroups combined, and, finally, the number of speeches a subgroup directed toward each of the individual outgroups. These frequencies provide insight into the activity levels of the subgroups, i.e., which subgroups are involved with themselves and which subgroups are involved with other subgroups. These frequency tables were included in order to introduce the reader to the data. A more meaningful description of how subgroup behavior was patterned was provided by the construction of trend lines.

The Construction of Trend Lines

Two important elements of subgroup behavior were plotted on graphs to show their evolution over time. These two elements of subgroup behavior were: (1) A subgroup's affinity for itself and for other subgroups, and (2) the defections from the subgroups. The midpoint and the conclusion of each of the three sessions were the time points chosen to describe the evolution of these two variables.

At each of these time points the number of positive performances given by X and directed to Y were summed with the number of negative performances given by X and directed to Y. The resulting scores were used to index the degree to which X has been either positive or negative toward Y during that specific time interval. These graphs are to provide a description of how affect is distributed over time. From this description, it will be possible to determine if subgroups increase or decrease: (1) in the number of positive statements they direct toward themselves, and (2) in the number of negative statements they direct toward other subgroups. These trend lines will also be useful in determining if similar patterns exist between subgroups in their behavior toward third party subgroups. The number of defections will also be graphed using the same six time points chosen for the trend analysis of subgroup performances. A set of questions, similar to those asked of

the graphed subgroup performances, will then be asked of the graphed defection data.

In summary, the purpose of these trend lines is to provide a more complete answer to the question of how lengthy sequences of subgroup behavior are patterned. Speculation into the variables upon which the formation of these patterns depend will be provided by a third, and final, treatment of the data--the cross-tabulation of subgroup performances and defections.

The Cross-Tabulation of Subgroup Performances and Defections

While a useful and informative tool, the trend lines provide only a periodic summary of subgroup behavior. The process through which the group arrives at each time point on the trend line is not specified by the graph itself. Hence, two subgroups may exhibit similar trend lines but the actual experiences of the groups might have been altogether different. In addition to being potentially misleading, the trend lines are also uninformative on the question of what variables account for the information of the patterns observed.

To compensate for the shortcomings of the trend lines, the immediate impact that the behavior of one subgroup has on the behavior of a second subgroup was measured. This was accomplished by the cross-tabulation of the subgroup performances and defections. The procedure followed to cross-tabulate the behavior of

subgroups is examplified by the cross-tabulation of Performances I and II given by the Dependent Complainers (A) with Performances I and II given by the Loyal Compliants (B).

To cross-tabulate these performances, the computer was instructed to search the 403 intervals for each instance in which the Dependent Complainers gave either a Performance I (Subgroup Is Positive Toward Itself) or a Performance II (Subgroup Is Negative Toward Itself). The frequency with which these performances occurred were then recorded along the side of a 3 x 3 matrix (Figure 2). Each interval identified by this search was then treated as an independent variable.

Fig. 2.--Performances I and II Given by Subgroup A and Subgroup B

	B to B		
	(-)***	(0)**	(+)*
	4	32	22
A to A			
(-)***	5		
(0)**	27		
(+)*	26		

* (+) Performance I
** (0) The absence of Performances I and II
*** (-) Performance II

The computer was then instructed to search the three subsequent intervals that followed each of the intervals now designated an independent variable for each instance in which the Loyal Compliants gave either a I or II performance. The frequencies with which Loyal Compliants gave a I or II performance were recorded on the top of the 3 x 3 matrix shown in Figure 2. Each interval identified by this search was then treated as a dependent variable. The occurrence of the independent variable was then cross-tabulated with the occurrence of the dependent variable. The frequency with which the dependent variable occurred subsequent to the occurrence of the independent variable is shown in the cells of the 3 x 3 matrix (Figure 3).

Fig. 3.--Two-Way Cross-Tabulation of Performances I and II Given by Subgroup A and Subgroup B

		B to B (-)	(0)	(+)
		4	32	22
A to A				
(-)	5	1	2	2
(0)	27	1	17	9
(+)	26	2	13	11

Test of Significance

A rank-order measure of association, Kendall's Tau-B, was used to index the correlation between the independent and dependent variables contained in the cells of the 3 X 3 matrices. Kendall's Tau-B shows the general "monotonicity" of the underlying relationship between the variables contained in these matrices. Matrices are said to be monotone-increasing if an increase in the independent variable is always accompanied by an increase in the dependent variable. A monotone-decreasing function has just the opposite property: an increase in the independent variable is accompanied by a decrease in the dependent variable. The size of the Kendall coefficient indexes the tendency of the underlying scores to relate in a "monotone" way. For the purposes of the present study, an absolute value of .2 was accepted as evidence that the relationship between the dependent and independent variables contained within a 3 X 3 matrix is monotone. Positive values indicate that the relationship tends to be monotone-increasing, negative values monotone-decreasing, and small or zero values nonmonotonic (not related at all).

The index score computed for the matrix in Figure 2 was .0636. Because this score was not equal to or greater than .2, the matrix shown in Figure 2 would be judged nonmonotonic, affording no evidence of a relationship between the type of communication that takes

place within the Dependent Complainers and what is subsequently said within the Loyal Compliants. In the next and final chapter, the results of the frequency tables, trend lines, and cross-tabulations performed will be presented.

Summary

This chapter has presented the principal questions of this study. The steps taken in the research strategy adopted to answer these questions were then discussed. Finally, the procedures followed in the construction of relevant frequency tables, trend lines, and cross-tabulations were reviewed.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of this chapter is to answer the two principal questions of the study: (1) How are lengthy sequences of subgroup behavior patterned? and (2) On what variables do the formation of these patterns depend? In the procedure to be followed the frequencies and the trend lines of collective behavior will first be presented. These measures will then be examined for patterns of collective behavior. The variables on which the formation of these patterns depend will then be considered. The identity of these variables will be surmised from the data generated by the cross-tabulation of subgroup behavior.

Frequencies of Collective Action

A series of frequency tables were constructed to provide an overview of how the most basic unit of subgroup behavior, the frequency with which a subgroup spoke, was patterned. These tables were constructed for the total number of speeches given by the subgroups, the number of speeches a subgroup directed toward itself, the number of speeches a subgroup directed toward all the other subgroups combined, and, finally, the number of speeches a subgroup directed toward each of the individual

outgroups. By providing an index to the activity levels of the subgroups, these tables will serve to introduce the data of this study to the reader.

The Number of Speeches Given by Each Subgroup

A gross measure of activity level is provided by the total number of speeches given by each subgroup, which are presented in Table 5.

TABLE 5

FREQUENCIES OF SPEECHES GIVEN BY SUBGROUPS

Subgroup	Frequency
Dependent Complainers (A)	130
Loyal Compliants (B)	143
Counterdependents (C)	124
Self-sufficients (D)	84
Total	481

Inspection of Table 5 reveals that the Dependent Complainers, Loyal Compliants, and the Counterdependents spoke equally often and that each of these three subgroups spoke approximately one and one half times as often as did the Self-sufficients. The differences between the Self-sufficients and the other three groups in the frequency with which they spoke was not the product of a smaller membership for the Self-sufficients. Table 1 shows the

membership of the Self-sufficients to be approximately the same as the membership of the Dependent Complainers and the Loyal Compliants. An alternative explanation would be that the differences between the Self-sufficients and the other three subgroups may be related to the number of negative speeches given by the Self-sufficients. It is logical to assume that when a subgroup is negative toward other subgroups those other subgroups will retaliate, thereby increasing the activity of the first group that must now defend itself. The trend lines, to be presented later, will show the degree to which negative speeches increase a subgroup's activity rate.

The Number of Speeches Each Subgroup Directs Toward Itself

A gross measure of a subgroup's self-involvement is provided by the total number of speeches that a group directs toward itself. The four subgroups directed 176 speeches toward themselves, 37 percent of the total number of speeches given in the three sessions. Table 6 indexes the frequency with which each subgroup spoke to itself.

The number of speeches that subgroups direct toward themselves are distributed in Table 6 in much the same way that the total number of speeches that subgroups gave were distributed in Table 5. The Dependent Complainers, Loyal Compliants, and the Counterdependents spoke to themselves equally often, and slightly less than twice as often as the Self-sufficients spoke to themselves.

TABLE 6

FREQUENCIES FOR THE TOTAL NUMBER OF SPEECHES DIRECTED TO OWN GROUP

Subgroup	Frequency
Dependent Complainers (A)	53
Loyal Compliants (B)	52
Counterdependents (C)	49
Self-sufficients (D)	22
Total	176

Once again the low activity of the Self-sufficients on this variable may be related to the number of negative speeches given by the Self-sufficients. As previously mentioned, it is logical to assume that when a subgroup is negative toward other subgroups those subgroups will retaliate requiring the first subgroup to counterattack. A second possibility would be that subgroups might choose to defend themselves, rather than counterattacking, by assigning positive value to themselves. The trend lines, to be presented later, will show the degree to which negative speeches increase a subgroup's involvement with itself.

The Number of Speeches Each Subgroup Directs Toward Outgroups

A gross measurement of a subgroup's involvement with other subgroups is provided by the total number of speeches

that a subgroup directs toward outgroups. The four subgroups directed 305 speeches to other subgroups, 63 percent of the total number of speeches given in the three sessions. Table 7 indexes the frequency with which each subgroup spoke to other subgroups.

TABLE 7

FREQUENCIES FOR THE TOTAL NUMBER OF SPEECHES DIRECTED TO OUTGROUPS

Subgroup	Frequency
Dependent Complainers (A)	77
Loyal Compliants (B)	91
Counterdependents (C)	75
Self-sufficients (D)	62
Total	305

The total number of speeches that subgroups direct toward other subgroups are distributed in Table 7 in a manner that is quite different from the way in which speeches were distributed in Tables 5 and 6. In Table 7, the frequency with which the Self-sufficients spoke to other subgroups closely paralleled the frequencies with which the Dependent Complainers, Loyal Compliants, and the Counterdependents spoke to other subgroups; yet the Self-sufficients gave the least number of total speeches (see Table 5). This must mean that the Self-sufficients, relative to their total number of speeches, were more

involved with other subgroups than were the Dependent Complainers, Loyal Compliants, and the Counterdependents. It also means that the Dependent Complainers, Loyal Compliants, and the Counterdependents, relative to their total number of speeches, were more involved with themselves than were the Self-sufficients. These observations are confirmed by the percentages reported in Table 8.

TABLE 8

THE PERCENTAGE OF THE TOTAL NUMBER OF SPEECHES GIVEN BY EACH SUBGROUP DIRECTED TOWARD ITSELF AND TOWARD OTHER SUBGROUPS

	Percentage of Speeches Directed Toward:	
	Own Subgroup	Other Subgroup
Dependent Complainers (A)	40.8	59.2
Loyal Compliants (B)	36.4	63.6
Counterdependents (C)	39.5	60.5
Self-sufficients (D)	26.2	73.8

It is not surprising to find that the Self-sufficients were the subgroup least involved with themselves and the most involved with the other subgroups relative to their total contributions. The Self-sufficients were, after all, the subgroup most interested in exercising their own leadership over the total group and would, therefore, be more likely to engage in outgroup directed influence attempts.

The Number of Speeches Each Subgroup Directs Toward Individual Outgroups

Table 7 provided a gross measurement of involvement between subgroups. A more detailed description of the level of involvement between the subgroups is provided by the data presented in Table 9. This data consists of the number of speeches each subgroup directs toward the three other subgroups. Each subgroup's involvement with the three other subgroups will be disclosed by this data.

TABLE 9

FREQUENCIES FOR THE TOTAL NUMBER OF SPEECHES DIRECTED TO INDIVIDUAL OUTGROUPS

Subgroup	Count	%
Dependent Complainers (A) to:		
Loyal Compliants (B)	33	42.9
Counterdependents (C)	33	42.9
Self-sufficients (D)	11	14.3
Loyal Compliants (B) to:		
Dependent Complainers (A)	37	40.7
Counterdependents (C)	38	41.8
Self-sufficients (D)	16	17.6
Counterdependents (C) to:		
Dependent Complainers (A)	36	48.0
Loyal Compliants (B)	31	41.3
Self-sufficients (D)	8	10.7
Self-sufficients (D) to:		
Dependent Complainers (A)	23	37.1
Loyal Compliants (B)	26	42.0
Counterdependents (C)	13	21.0

Inspection of Table 9 reveals a strong similarity between the number of speeches that the Dependent Complainers, Loyal Compliants, and the Counterdependents directed toward each of the other subgroups. A further inspection reveals that each of these subgroups directed only a small number of speeches to the Self-sufficients. The high number of speeches that the Dependent Complainers, Loyal Compliants, and the Counterdependents directed toward each other indicates that no two of these three subgroups were excessively involved with each other to the point of excluding the third subgroup. The Self-sufficients, however, were largely ignored by the three other subgroups as a result of those three subgroups' high level of involvement with each other.

The Self-sufficients are shown in Table 9 to direct the greatest number of their speeches to the Loyal Compliants, the Dependent Complainers receive the next highest number of speeches, and, finally, the Counter-dependents receive the least number of speeches from the Self-sufficients. The Loyal Compliants, to whom the Self-sufficients direct the greatest number of speeches, is, in turn, the subgroup that directs the greatest number of speeches to the Self-sufficients; the Dependent Complainers, to whom the Self-sufficients direct the second highest number of speeches, is, in turn, the subgroup that directs the second highest number of speeches to the Self-sufficients; and, finally, the Counterdependents to whom

the Self-sufficients direct the least number of speeches, is, in turn, the subgroup that directs the least number of speeches to the Self-sufficients. The fact that the subgroups receiving the most speeches from the Self-sufficients rank in the same order as do those subgroups to whom the Self-sufficients direct the most speeches suggests that the level of involvement between subgroups is reciprocal--the more a subgroup talks to a second subgroup the more that subgroup will respond to the first.

The Number of Defections by Each Subgroup

A gross measurement of subgroup stability is provided by the total number of defections by each subgroup. The number of defections occurring from each subgroup is presented in Table 10.

TABLE 10

FREQUENCIES FOR THE TOTAL NUMBER OF DEFECTIONS BY SUBGROUPS

Subgroup	Count	%
Dependent Complainers (A)	26	27.1
Loyal Compliants (B)	25	26.0
Counterdependents (C)	19	19.8
Self-sufficients (D)	26	27.1
Total	96 Total	100.0

Inspection of Table 10 reveals that approximately one of every five acts of collective behavior contained a defection as a component element. This level of frequency is consistent with the fact that the four subgroups were not mutually exclusive. Members who were ambivalent about conflicting strategies and goals associated themselves with more than one subgroup.

The Counterdependents are shown in Table 10 to have the least number of defections, while the other three subgroups are each shown in Table 10 to have a high number of defections. Low membership in the Counterdependent subgroup, however, is just as good an explanation as is a higher level of stability to account for the low frequency of defection from the Counterdependent subgroup.

The Number of Defections by Each Subgroup to Individual Outgroups

Table 10 provided a gross measure of subgroup stability. Table 11 provides a measurement of the preference that defecting members display for alternative subgroups.

The distribution of the preferences that defecting members display in Table 11 for alternative subgroups is consistent with the pattern of distribution one would expect, given the validity of the similarities and differences between the goals and strategies of the subgroups presented in Chapter III (see page 32). Specifically, the distribution of preferences one would expect based

TABLE 11

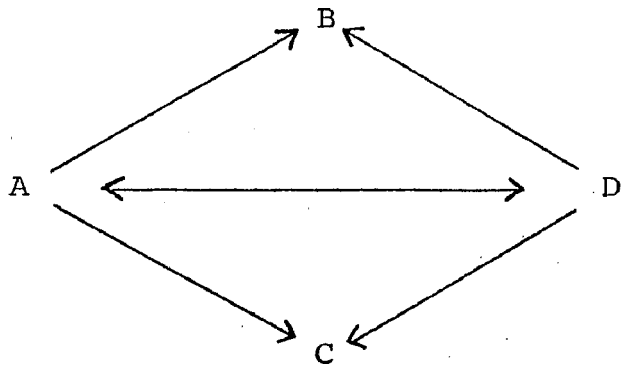
FREQUENCIES FOR THE TOTAL NUMBER OF DEFECTIVES TO INDIVIDUAL SUBGROUPS

Subgroup	Count	%
Dependent Complainers (A) to:		
Loyal Compliants (B)	12	46.2
Counterdependents (C)	6	23.1
Self-sufficients (D)	8	30.8
Loyal Compliants (B) to:		
Dependent Complainers (A)	11	44.0
Counterdependents (C)	5	20.0
Self-sufficients (D)	9	36.0
Counterdependents (C) to:		
Dependent Complainers (A)	7	36.8
Loyal Compliants (B)	6	31.6
Self-sufficients (D)	5	26.3
Self-sufficients (D) to:		
Dependent Complainers (A)	5	21.7
Loyal Compliants (B)	11	47.8
Counterdependents (C)	7	30.4

on where the subgroups had been placed within the two dimensional space defined by goal and strategy would be as follows: since the Dependent Complainers and Self-sufficients are shown in Table 1 to differ both in goal and strategy, one would expect, given the validity of these differences, that defecting members from these two subgroups would place themselves in either the Loyal Compliants or the Dependent Complainers, with whom they have either a common goal or strategy, more often than they would place themselves in the group that is the antithesis of the group from which they defected (the

Dependent Complainers or Self-sufficients). This prediction is illustrated in Figure 4.

Fig. 4.--Predicted Defections from Dependent Complainers (A) and Self-sufficients (D)



$A \longrightarrow B > A \longrightarrow D^*$

$A \longrightarrow C > A \longrightarrow D$

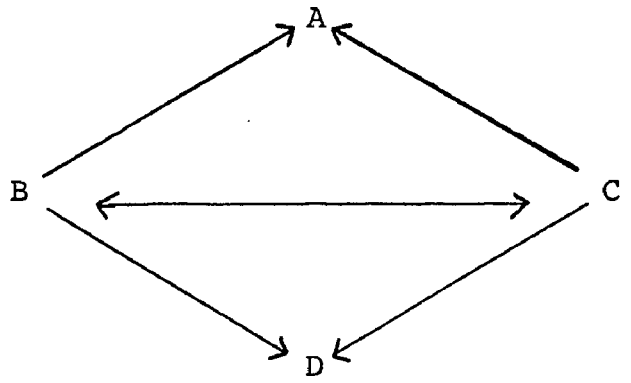
$D \longrightarrow B > D \longrightarrow A^*$

$D \longrightarrow C > D \longrightarrow A^*$

*Confirmed by the frequencies presented in Table 11.

Using the same rationale, one would expect that members defecting from the Loyal Compliants and Counterdependents would place themselves in either the Dependent Complainers or the Self-sufficients, with whom they have either a common goal or strategy, more often than they would place themselves in the group that is the antithesis of the group from which they defected (the Loyal Compliants or Counterdependents). This is illustrated in Figure 5.

Fig. 5.--Predicted Defections from Loyal Compliants (B) and Counter-dependents (C)



$B \longrightarrow A > B \longrightarrow C^*$

$B \longrightarrow C > D \longrightarrow C^*$

$C \longrightarrow A > C \longrightarrow B^*$

$C \longrightarrow D > C \longrightarrow B$

*Confirmed by frequencies presented in Table 11.

The frequencies contained in Table 11 confirm six of the eight predictions reported in Figures 4 and 5. The confirmation of these predictions provides indirect evidence that the four subgroups can be represented with some validity in a two-dimensional space.

A Small Space Analysis of Defections

Direct evidence in support of the validity of representing the four subgroups in a multidimensional space is provided by the results of a small space analysis employing the MDSCAL program in the OSIRIS-III Statistical

Software System. This program takes as input a matrix of proximity data (e.g. correlation coefficients, inter-group ratings, or the like). The data matrix containing the defection frequencies for this analysis is shown in Figure 6. MDSCAL seeks to represent the variables in this matrix in a multidimensional space such that a monotonic relationship exists between the input data values and the distance between variable points in space. The MDSCAL program then calculates a measure, called "stress," the value of which represents the degree of success in achieving a monotonic relationship between the input data and the interpoint distances for a given dimensional space. Smaller stress values indicate greater success. (Values in the .05 to .10 range are generally indicative of good to excellent fits.)

The final configuration provided by the MDSCAL program was a two-dimensional solution (see Table 12) with a stress value of .0008. This result provides direct evidence for the validity of conceptualizing the four subgroups as existing in a multidimensional space. The two dimensions identified in Table 12 and plotted in Figure 7 can be usefully labeled goal and strategy based on the description of subgroups provided in Chapter III.

Fig. 6.--Summation of Defection Frequencies

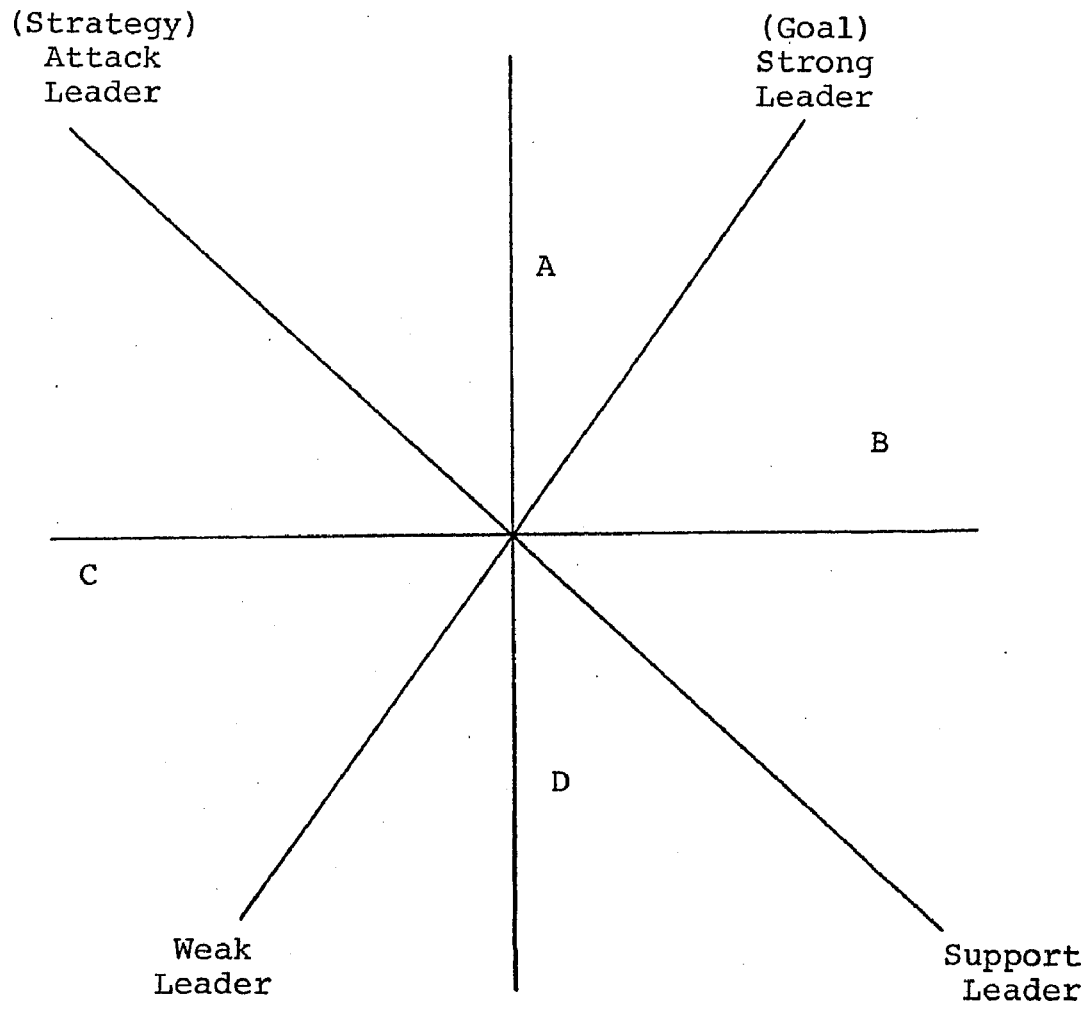
	A	B	C	D
A		23	13	13
B			11	20
C				12

TABLE 12

FINAL COORDINATES FOR THE FREQUENCY OF DEFECTIONS AND INTER-POINTS

Variable	Dimension	
	1	2
1	-0.095	0.718
2	-0.996	0.268
3	1.278	-0.134
4	-0.186	-0.852

Fig. 7.--Rotated Matrix for Data in Table 12



Patterns of Collective Action

The frequency tables presented at the beginning of this chapter reported the level of each subgroup's involvement with itself and with other subgroups. The element of collective behavior reported by the frequency tables was the number of speeches given by subgroups. The frequency tables provided a broad overview of the data but afforded only limited insight into the way in which sequences of collective action are patterned.

The search for patterns, using the frequency tables, was restricted because the frequency tables reported only a single value for the dependent variable. When only a single value is reported, the search for patterns is restricted to an investigation of how subgroups score on the dependent variable, (e.g. high, low, and so forth). The opportunity to search for patterns in which the individual subgroups score on a dependent variable requires that repeated measurements be made and recorded for each subgroup.

To provide this data, each subgroup's affinity for itself and for other subgroups were measured at the midpoint and conclusion of the three sessions. At each of these time points the number of positive performances given by subgroup X and directed to subgroup Y were summed with the number of negative performances given by subgroup X and directed to subgroup Y. The resulting scores were then plotted on graphs to show their evolution

over time. These graphs and the patterns they reveal will now be presented.

Values Assigned to Own Group: Collective Patterns

The trend lines for the number of positive and negative statements each subgroup directs toward itself are shown in Figure 8. Inspection of Figure 8 reveals that the Dependent Complainers, Counterdependents, and the Self-sufficients all declined over time in the number of positive statements each directed toward themselves. The Loyal Compliants, on the other hand, increased during the course of the group in the number of positive statements they directed toward themselves. The trend, however, is clearly for subgroups to decline over time in the number of positive statements they assign to themselves.

Perhaps a difference exists between the experience of the Loyal Compliants and the experience of the other subgroups that would explain the difference in their behavior on this variable. The trend lines for the values that subgroups assign to other subgroups will provide data with which this possibility can be explored.

Values Assigned to Other Groups: Collective Patterns

The trend lines for the number of positive and negative statements the Loyal Complainers, Counterdependents, and Self-sufficients direct to the Dependent Complainers are shown in Figure 9. Inspection of

Fig. 8.--The Summation of Values Assigned to Own Subgroup

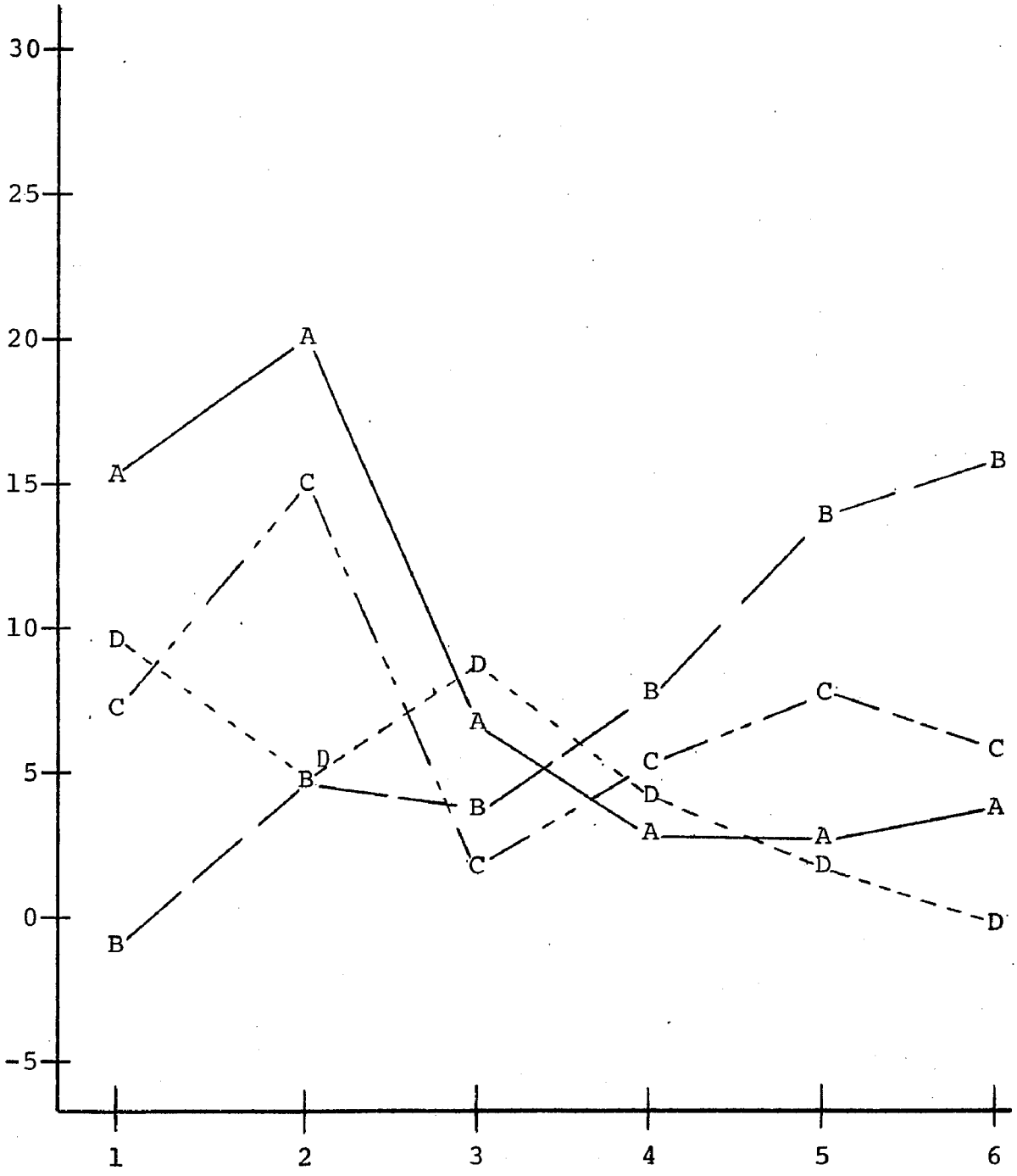


Fig. 9.--The Summation of Values Assigned to the Dependent Complainers (A)

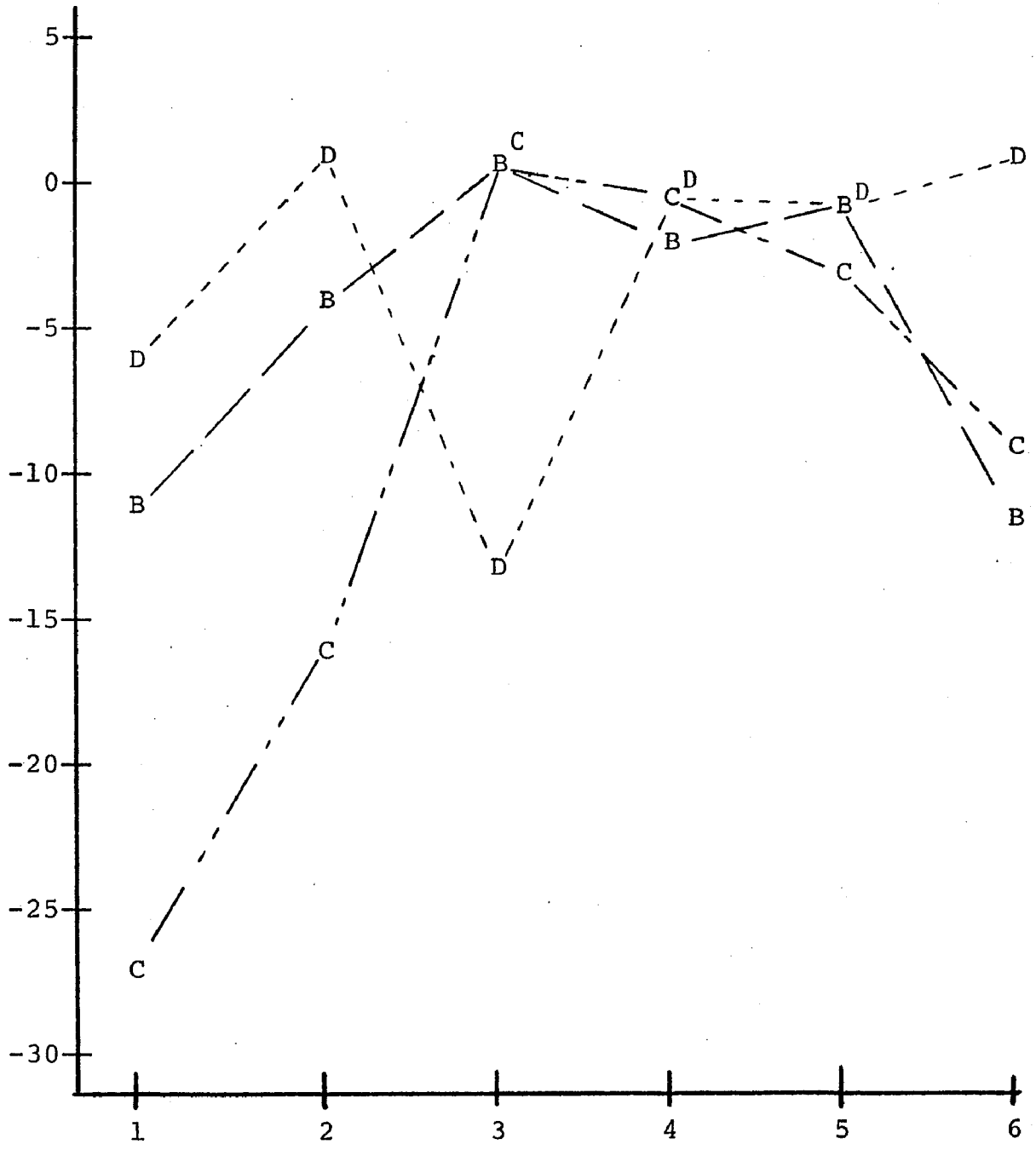


Figure 9 reveals that the Loyal Compliants and Counter-dependents show a rapid decline in the number of negative statements they direct toward the Dependent Complainers during session one and the first half of session two. In the remaining sessions, these two groups then steadily regress toward the level of negative statements they had originally directed toward the Dependent Complainers. A later section has been devoted to a discussion of the similarities between subgroups in their behavior toward other subgroups. The similarity noted here between the Loyal Compliants and the Counterdependents in their behavior toward the Dependent Complainers will be analyzed at that time.

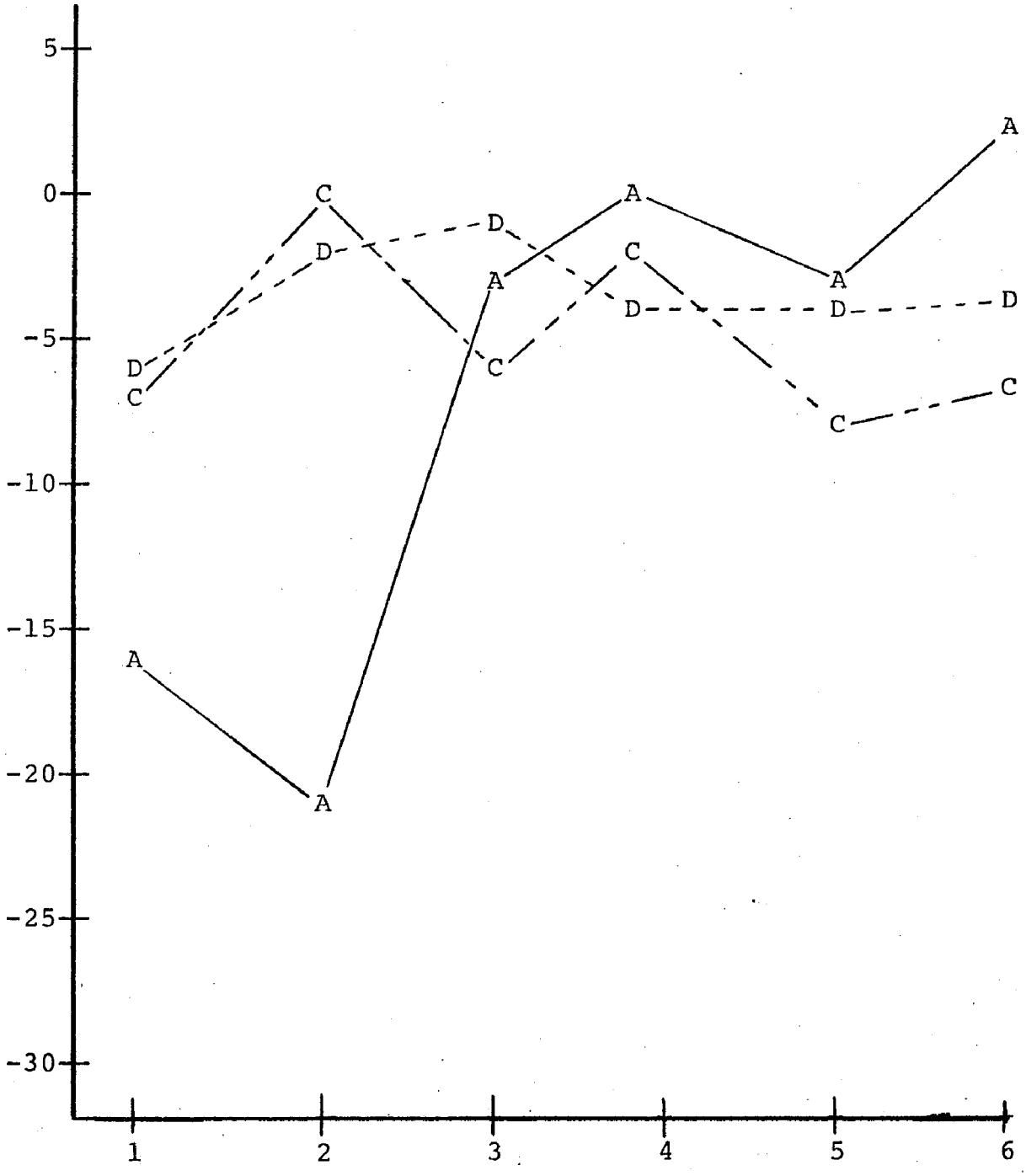
The Self-sufficients, unlike the Loyal Compliants and the Counterdependents, direct a great number of negative statements to the Dependent Complainers during the first half of session two and then steadily decline in the number of negative statements they assign to the Dependent Complainers. Overall, the number of negative comments given at the end of the three sessions were less than the number of negative comments given at the beginning of the three sessions for the two subgroups, the Counterdependents and the Self-sufficients. The Loyal Compliants gave approximately the same number of negative comments at the end of the three sessions as they gave during the opening session.

The number of positive and negative statements the Dependent Complainers, Counterdependents, and the Self-sufficients directed to the Loyal Compliants are shown in the trend lines reported in Figure 10. Inspection of Figure 10 reveals that the Counterdependents and Self-sufficients, with the exception of two time periods, vary together in their assignment of negative value to the Loyal Compliants. These two subgroups show a slight increase between time points 1 and 2 and 5 and 6 and a slight decrease between time points 4 and 5 in the number of negative statements they direct toward the Loyal Compliants. At the end of the three sessions, the Counterdependents and the Self-sufficients each direct approximately the same number of negative statements to the Loyal Compliants as they had directed to the Loyal Compliants in the opening sessions.

The Dependent Complainers, however, show a pattern quite different from the pattern observed for the Counter-dependents and Self-sufficients. Throughout session one, the Dependent Complainers show a steady increase in the number of negative statements they direct to the Loyal Compliants. From the opening of session two on, however, the Dependent Complainers are steadily less negative toward the Loyal Compliants.

It was hoped that Figure 10 might disclose something unique in the experience of the Loyal Compliants

Fig. 10.--The Summation of Values Assigned to the Loyal Compliants (B)

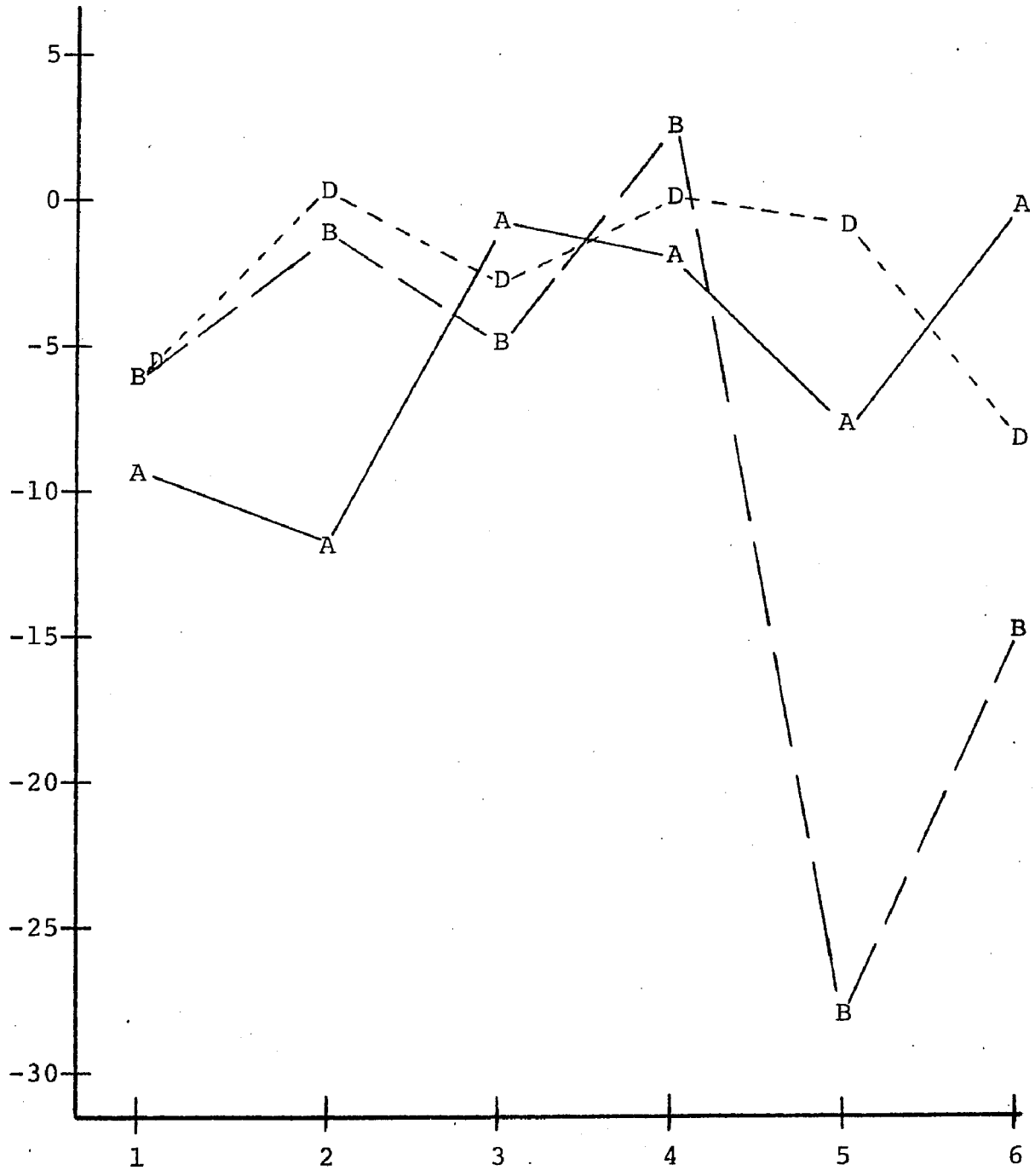


which would explain the steady increase in the number of positive statements that the Loyal Compliants directed toward themselves (see Figure 8). The Loyal Compliants, however, appear to have had essentially the same experiences as the three subgroups.

The number of positive and negative statements the Dependent Complainers, Loyal Compliants, and Self-sufficients directed to the Counterdependents are shown in the trend lines reported in Figure 11. Inspection of Figure 11 reveals that the Loyal Compliants and Self-sufficients, with the exception of the last half of the last session, vary together in their assignment of negative value to the Counterdependents. These two subgroups follow each other closely in their behavior toward the Counterdependents until session three when the Loyal Compliants unleashed a concentrated attack on the Counterdependents.

Once again, however, the Dependent Complainers show a pattern quite different from the pattern observed for the Loyal Compliants and Self-sufficients. With one exception, that being the attack on the Counterdependents by the Loyal Compliants, the Dependent Complainers display a pattern which is the exact opposite of the pattern displayed by the Loyal Compliants and Self-sufficients in their behavior toward the Counterdependents. Moreover, unlike the Loyal Compliants and Self-sufficients who end

Fig. 11.--The Summation of Values Assigned to the Counterdependents (C)



the three sessions more negative toward the Counter-dependents than they were after the opening session, the Dependent Complainers are steadily less negative toward the Counterdependents.

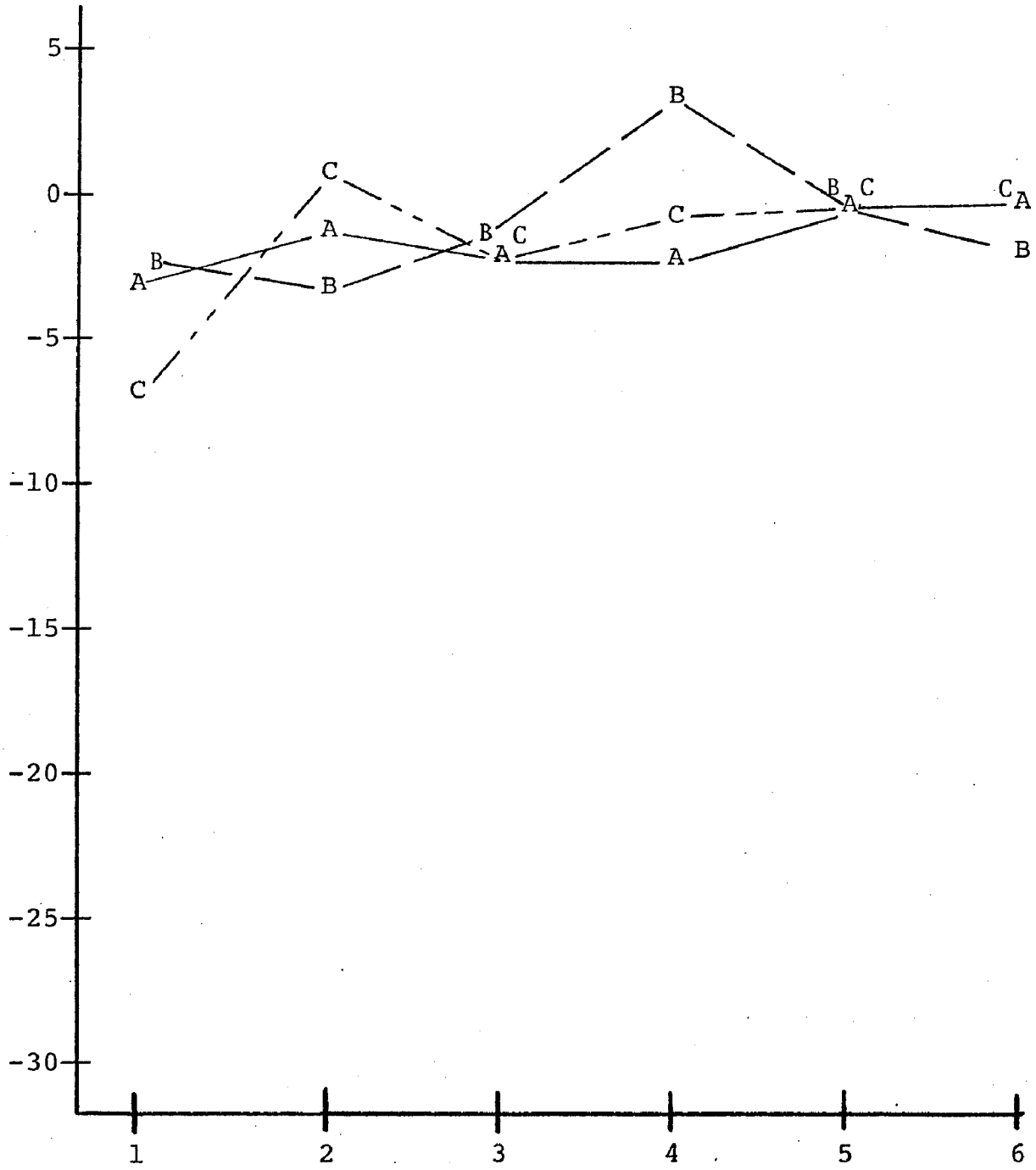
The trend lines for the number of positive and negative statements that the Dependent Complainers, Loyal Compliants, and Counterdependents direct to the Self-sufficients are shown in Figure 12. Inspection of Figure 12 reveals that the Dependent Complainers and the Counterdependents vary together in their assignment of negative value to the Self-sufficients. Over the three sessions, both subgroups display a gradual decline in the number of negative speeches each directs toward the Self-sufficients.

The Loyal Compliants, however, show a steady decline in the number of negative speeches each directs toward the Self-sufficients in the first one-half of the session but then show a steady increase in the number of negative speeches directed toward the Self-sufficients. Overall each of these three subgroups shows a slight decline in the number of negative speeches directed to the Self-sufficients during the three sessions.

The Decline of Negative Statements Assigned to Other Groups

The trend lines shown in Figures 8-12 show a decline over time in the number of negative statements directed toward other groups. Eight of the twelve trend

Fig. 12.--The Summation of Values Assigned to the Self-sufficients (D)



lines contained fewer negative speeches in time points 4-6 than in time points 1-3. The decline in the number of negative statements directed toward other groups was accompanied by a decline in the number of positive statements directed toward own group (Figure 8). The possibility that positive statements to own group and the number of negative statements to other groups are related is strengthened by the fact that the Loyal Compliants were involved in each of the four instances in which more negative speeches were given in time points 4-6 than in time points 1-3. The Loyal Compliants directed more negative statments in the second half than in the first half of the three sessions to the Dependent Complainers and Counterdependents. The Loyal Compliants received, as well, more negative statements in the second half than in the first half of the three sessions from the Dependent Complainers and Counterdependents. The fact that the Loyal Compliants gave and received more negative statements in the second half than in the first half of the three sessions is important because it was the Loyal Compliants who were the only subgroup to increase the number of positive statements directed toward one's own group over time. Together these facts suggest that the number of positive statements that a subgroup directs to itself is related to the number of negative statements that other subgroups direct to them.

The Existence of Co-Acting Subgroups

The trend lines shown in Figures 8-12 reveal similarities between subgroups in their behavior toward third groups. These similarities are more easily seen when co-acting groups are plotted together. Figure 13 shows the trend lines for the number of positive and negative speeches that the Loyal Compliants and the Counterdependents directed toward the Dependent Complainers. The similarity between their two patterns is readily apparent. Figure 14 shows the trend lines for the number of positive and negative speeches that the Dependent Complainers and Counterdependents directed to the Loyal Compliants. The Dependent Complainers and Counterdependents begin the three sessions on divergent patterns, however, from the third time on the patterns of these two groups are similar. Figure 15 shows the trend lines for the number of positive and negative speeches that the Loyal Compliants and the Self-sufficients directed toward the Counterdependents. With the exception of the fifth time point, the patterns of these two subgroups are similar. Finally, Figure 16 shows the trend lines for the number of positive and negative speeches that the Dependent Complainers and Counterdependents directed toward the Self-sufficients. Although time points 1-2 and 3-4 are showing divergent patterns, the trend lines of these two subgroups can still be considered similar.

Fig. 13.--The Summation of Values Assigned to the Dependent Complainers (A) by the Loyal Compliants (B) and Counter-dependents (C)

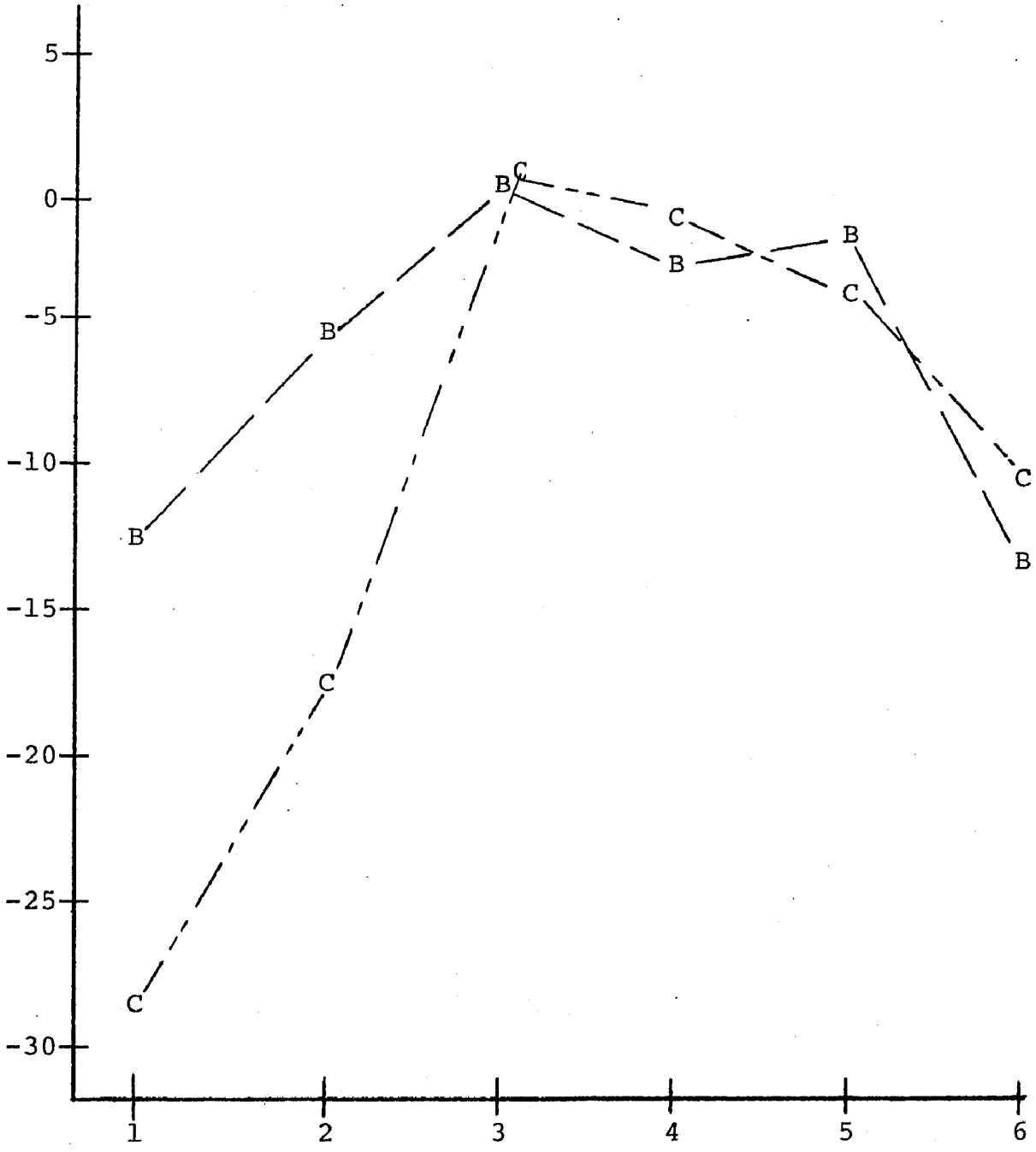


Fig. 14.--The Summation of Values Assigned to the Loyal Compliants (B) by the Dependent Complainers (A) and Counter-dependents (C)

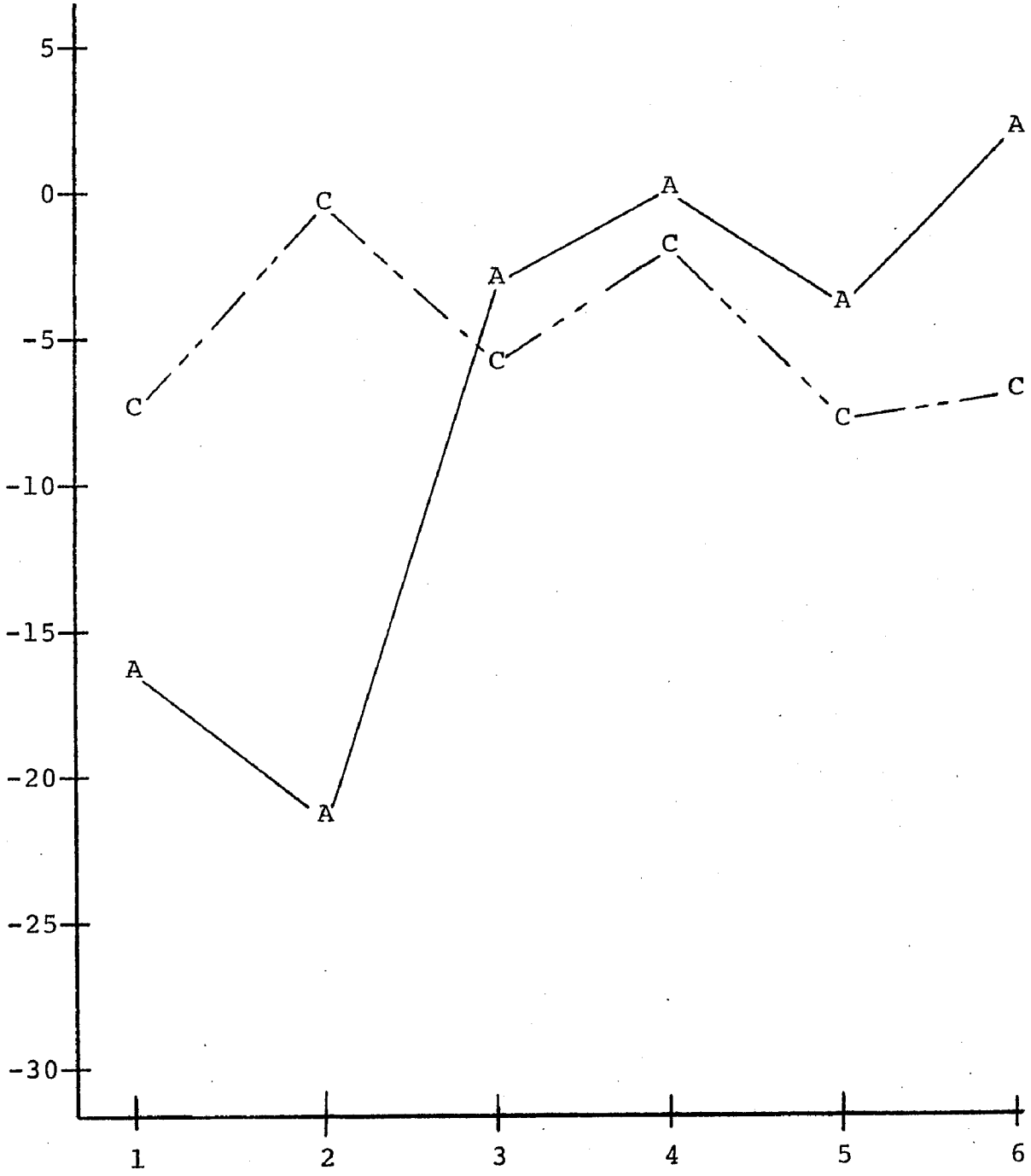


Fig. 15.--The Summation of Values Assigned to the Counterdependents (C) by the Loyal Compliants (B) and Self-sufficients (D)

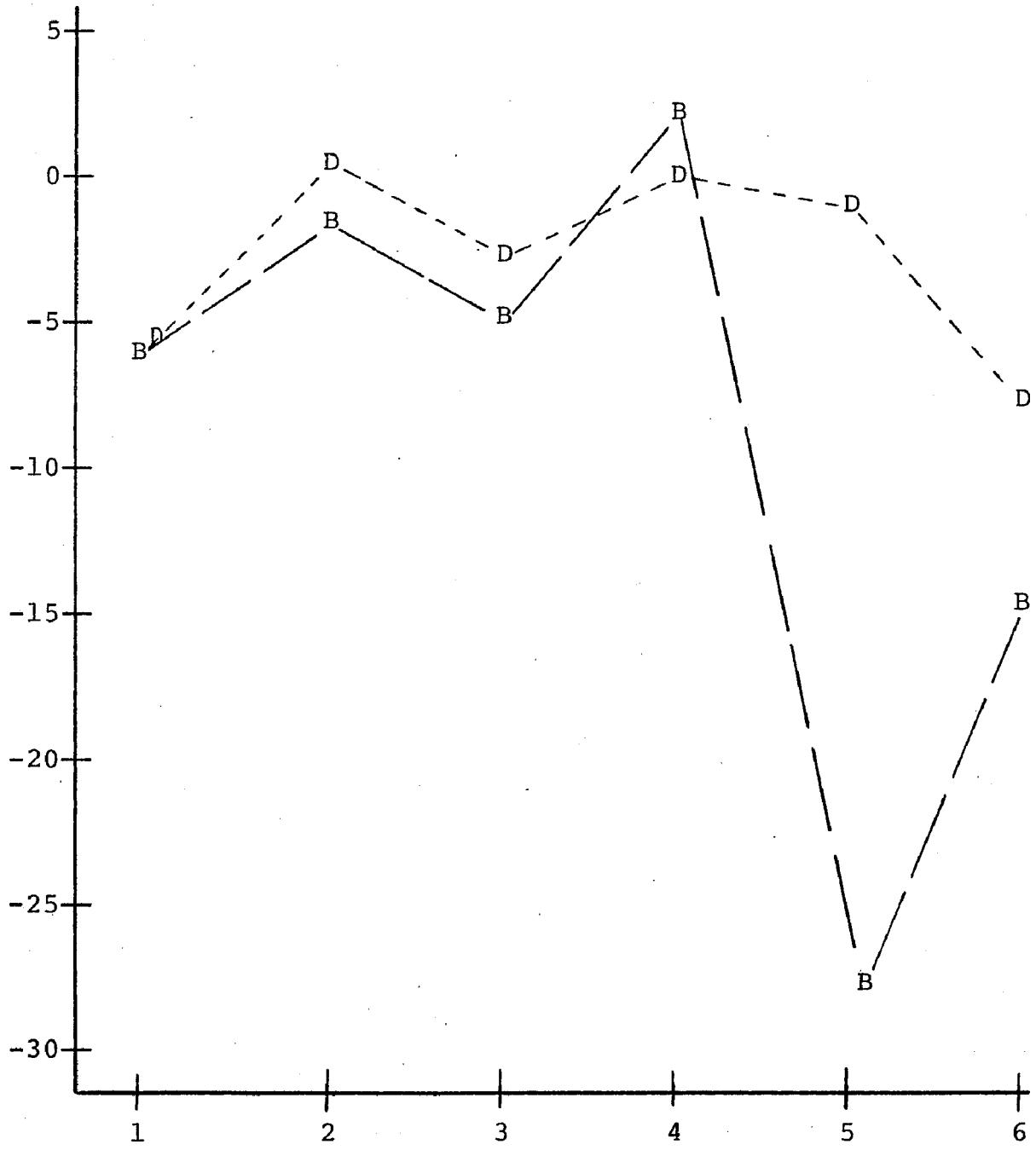
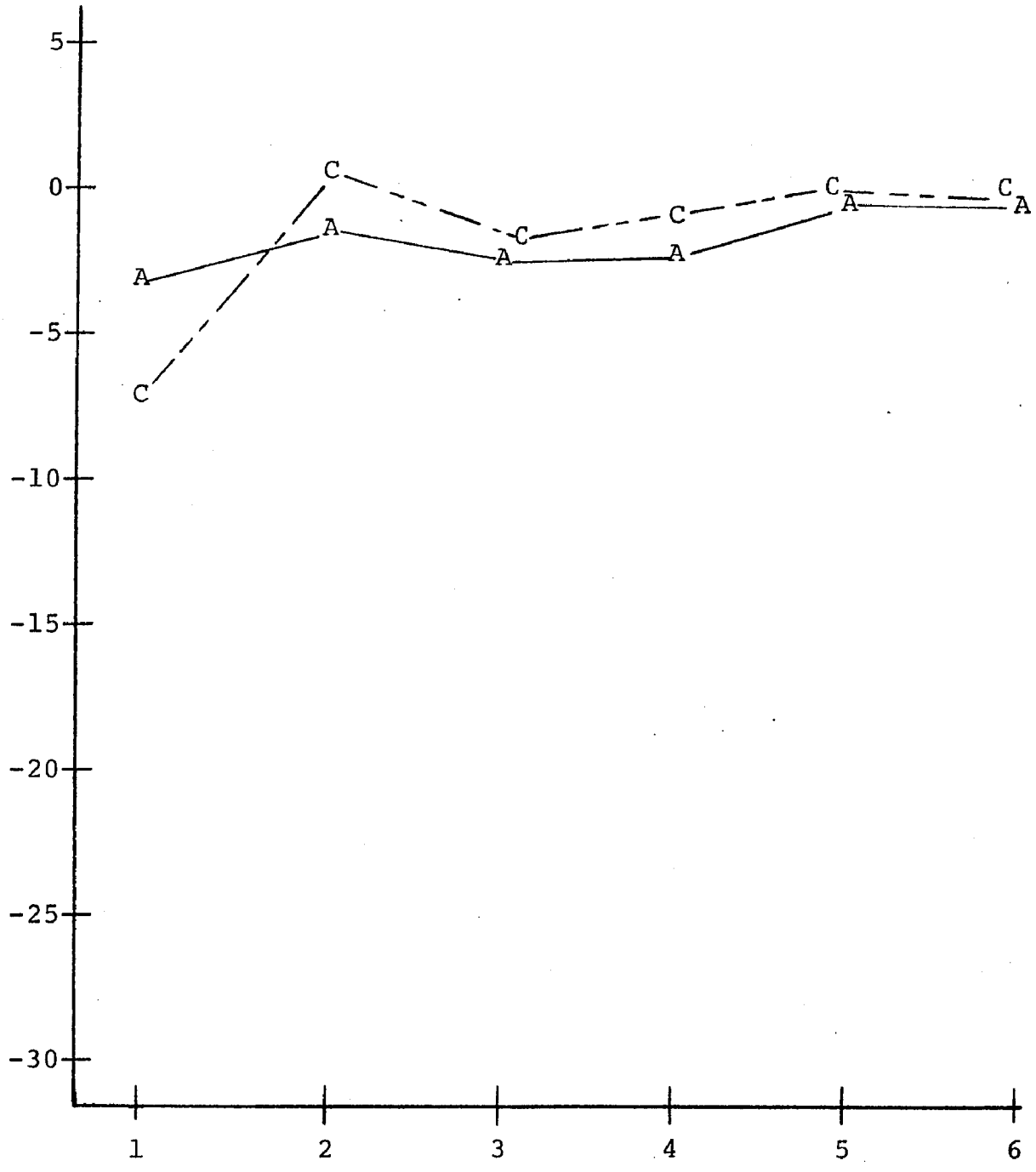


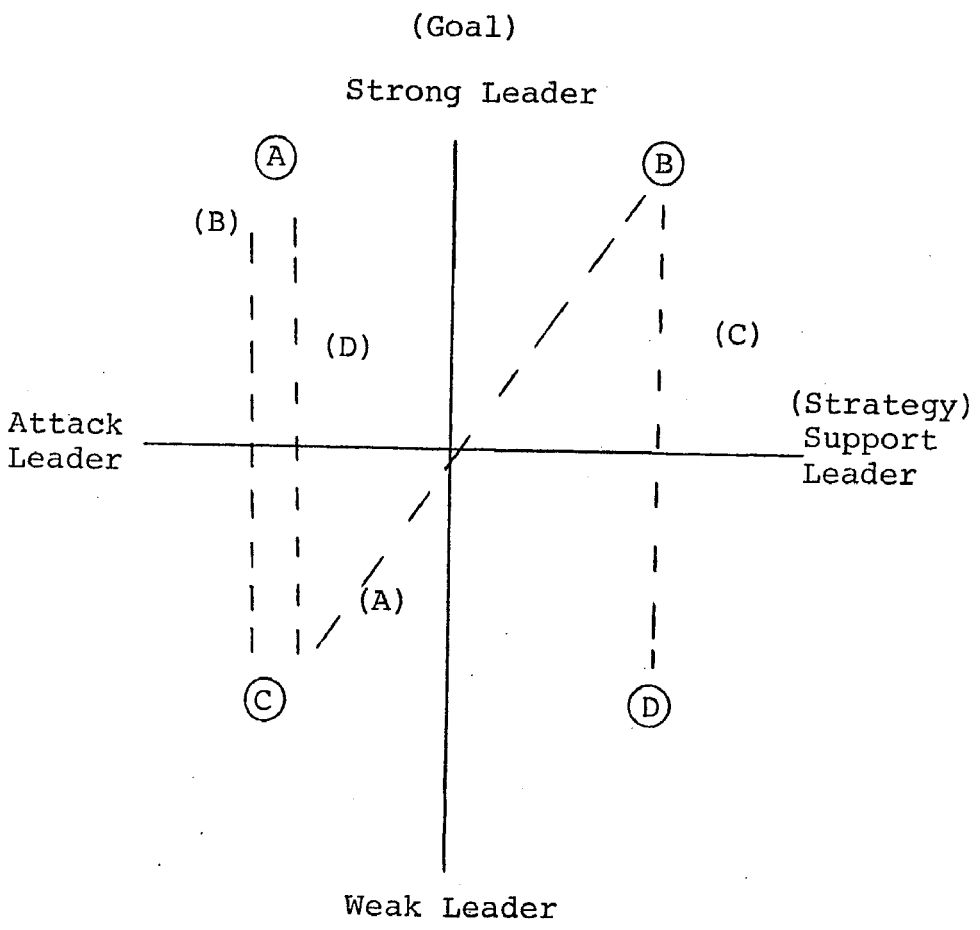
Fig. 16.--The Summation of Values Assigned to the Self-sufficients (D) by the Dependent Complainers (A) and Counterdependents (C)



The frequency with which two trend lines follow similar patterns suggests that this phenomenon is not the product of chance alone. Evidence of a predictor variable for which of the subgroups will show similarity in their patterns further supports the proposition that this phenomenon is not the product of chance. Figure 17 provides a graphic presentation of what is offered as a predictor variable. The two dimensional space shown in Figure 17 was presented in Chapter III to assist the reader in comprehending the identity of the subgroups. The validity of this two-dimensional solution was established earlier in this chapter. The broken lines connecting the subgroups indicate that their pattern of behavior toward a third subgroup (shown in parenthesis) were similar. Three of the four broken lines are vertical and one diagonal. The vertical lines show that the co-acting subgroups differ in goal but share the same tactic. Similarity in tactic appears then to be a predictor variable.

The identification of tactic as a predictor variable is important for two reasons. First the existence of a predictor variable is evidence that the patterns shown in Figures 14-17 did not happen by chance alone. Second, the identification of similarity in tactic as a predictor of co-action between subgroups is of theoretical interest. The subgroups shown in Figure 17 to be co-acting suggest the following hypothesis: Groups employing

Fig. 17.--Co-acting Subgroups Placed in a Two-Dimensional Space



similar tactics in pursuit of their goals are more likely to align themselves, even though their goals conflict, than are groups employing differing tactics in pursuit of common goals. Although counterintuitive, examples from the events of politics, religion, and education can be generated that are consistent with this hypothesis. The 1976 Democratic National Convention astounded many observers by its ordered procedures and unified front. The sight of George Wallace, Barbara Jordon, Frank Resso, and Fred Harris together on the speaker's platform at the conclusion of the convention was extraordinary. Certainly it was not a shared goal that formed them into a collective unit. Some sought more government, others less government; some sought to change the abortion laws, others sought to preserve them; some sought reduced jurisdiction of the courts in discrimination cases, others sought to preserve the court's power. To achieve these goals, however, required a common tactic--the election of a president with whom they would have some measure of influence. The hypothesis that similarity in tactics will compensate for differences in goals in the formation of coalitions is consistent with the events of the 1976 Democratic National Convention.

Reciprocation: The Response to Similar Patterns of Value Assignment

In order to provide a check on the behavior each of the subgroups receiving similar statements from

co-acting subgroups direct to those co-acting subgroups, trend lines for the frequency of positive and negative speeches directed by each subgroup to the other three subgroups were plotted. Figure 18 shows the frequency of positive and negative speeches that the Dependent Complainers directed toward the Loyal Compliants, Counterdependents, and Self-sufficients. The similarity between the patterns of behavior adopted toward the two co-acting subgroups shown in Figure 18, the Counterdependents and the Loyal Compliants, is readily apparent, while the pattern of behavior adopted toward the Self-sufficients, who did not co-act toward the Dependent Complainers, can easily be seen to be unique.

The frequency of positive and negative speeches that the Loyal Compliants direct toward the Dependent Complainers, Counterdependents, and the Self-sufficients are shown in Figure 19. The patterns of behavior adopted by the co-acting subgroups shown in Figure 19, the Dependent Complainers and Counterdependents, are not seen in Figure 19 to be similar. The dissimilarity between the patterns of behavior adopted by the Loyal Compliants toward the Dependent Complainers and Counterdependents is, however, an exception to a general pattern of reciprocation. Figure 20 shows the frequency of positive and negative speeches that the Counterdependents directed toward the Dependent Complainers, Loyal Compliants, and Self-sufficients. The similarity

Fig. 18.--The Summation of Values Assigned to the Loyal Compliants (B), Counterdependents (C), and Self-sufficients (D) by the Dependent Complainers (A)

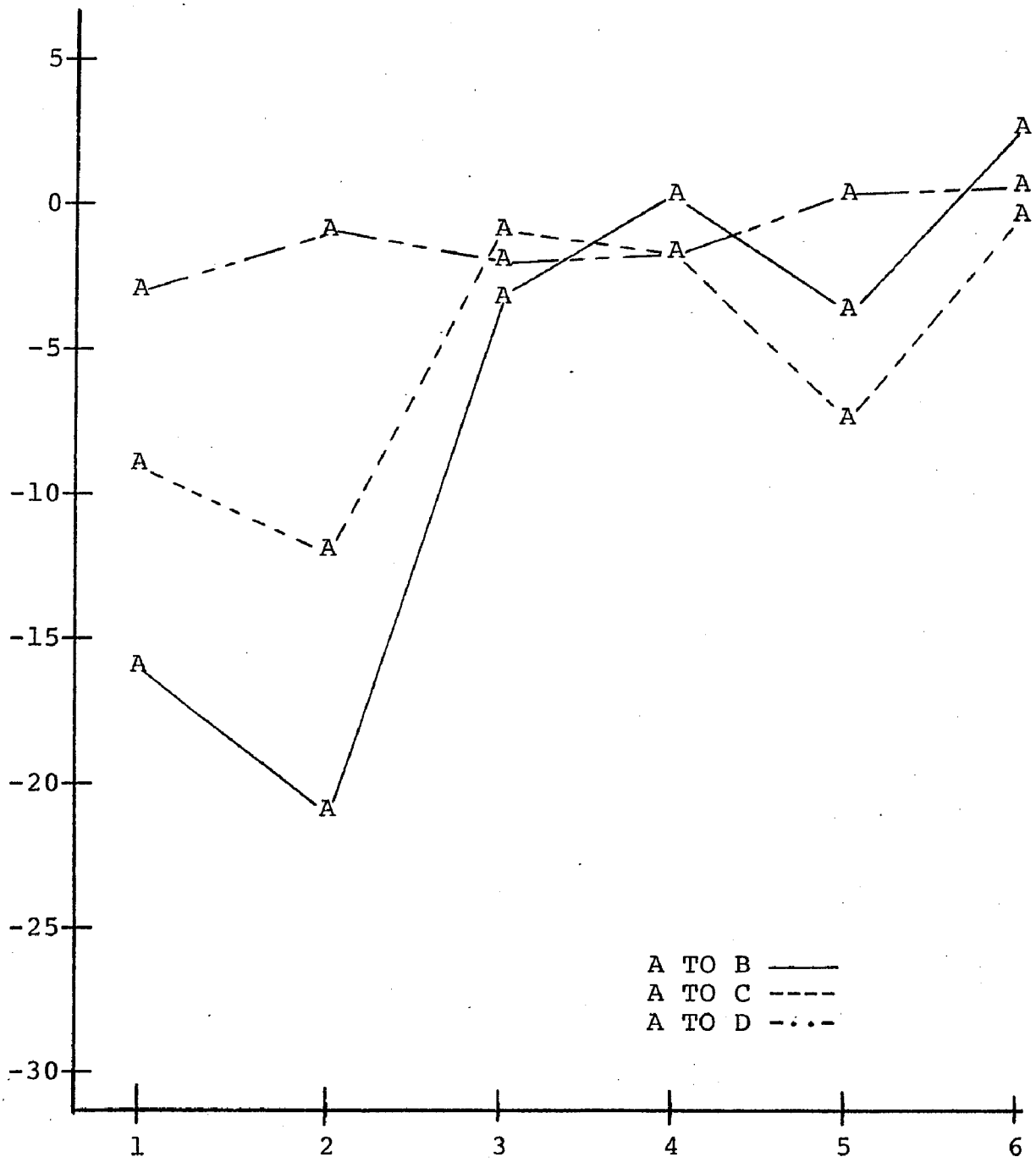


Fig. 19.--The Summation of Values Assigned to the Dependent Complainers (A), Counterdependents (C), and Self-sufficients (D) by the Loyal Compliants (B)

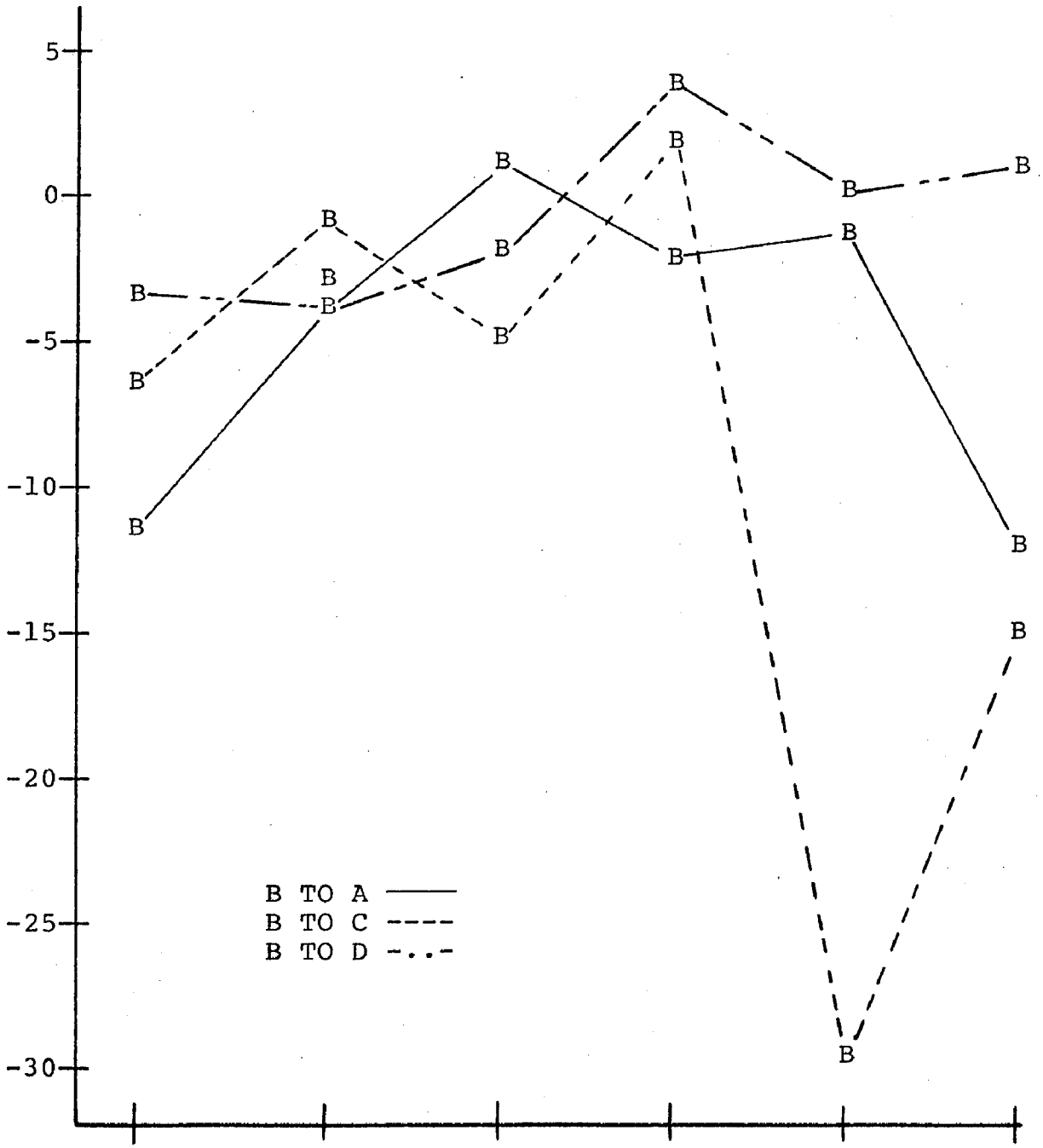
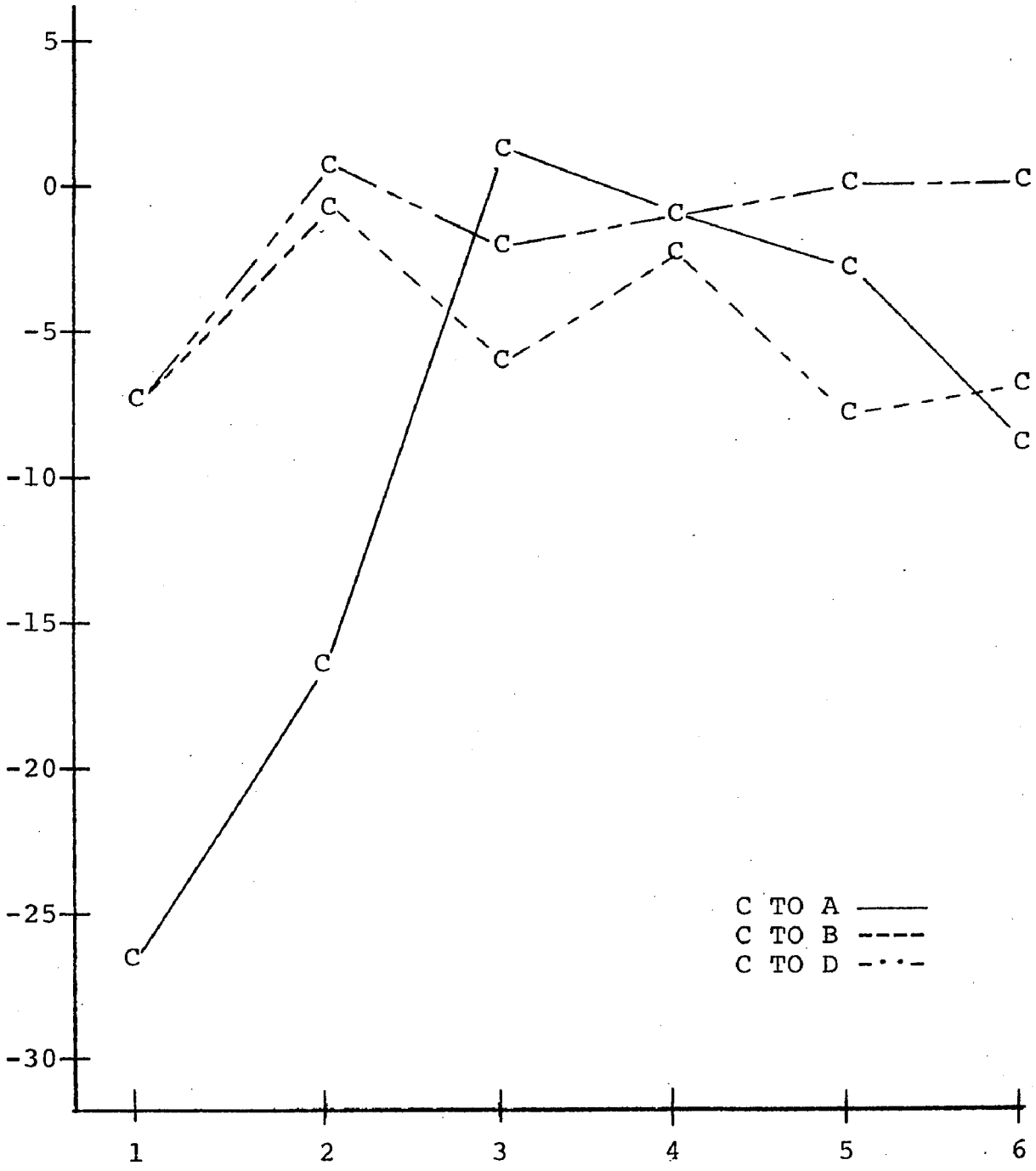


Fig. 20.--The Summation of Values Assigned to the Dependent Complainers (A), Loyal Compliants (B), and Self-sufficients (D) by the Counter-dependents (C)



between the patterns of behavior adopted toward the two co-acting subgroups shown in Figure 20, the Loyal Compliants and Self-sufficients, is readily apparent, while the pattern of behavior adopted toward the Dependent Complainers is shown to be unique. Finally, Figure 21 shows the frequency of positive and negative speeches that the Self-sufficients directed toward the Dependent Complainers, Loyal Compliants, and Counter-dependents. Once again, the similarity between the pattern of behavior adopted toward the two co-acting sub-groups shown in Figure 21, the Dependent Complainers and Counterdependents, is readily apparent, while the pattern of behavior adopted toward the Loyal Compliants is shown to be unique.

The general pattern of reciprocation shown in Figures 18-20 suggests that the similar patterns of behavior directed toward a subgroup by two co-acting sub-groups does not go unnoticed nor unresponded to by the target of the co-acting groups. Apparently the rule is: if treated alike by two co-acting subgroups, that sub-group will treat the co-acting subgroups alike.

Defections to Other Groups: Collective Patterns

The trend lines for the number of defections from each of the subgroups are shown in Figure 22. Inspection of Figure 22 reveals that the pattern of

Fig. 21.--The Summation of Values Assigned to the Dependent Complainers (A), Loyal Compliants (B), and Counterdependents (C) by the Self-sufficients (D)

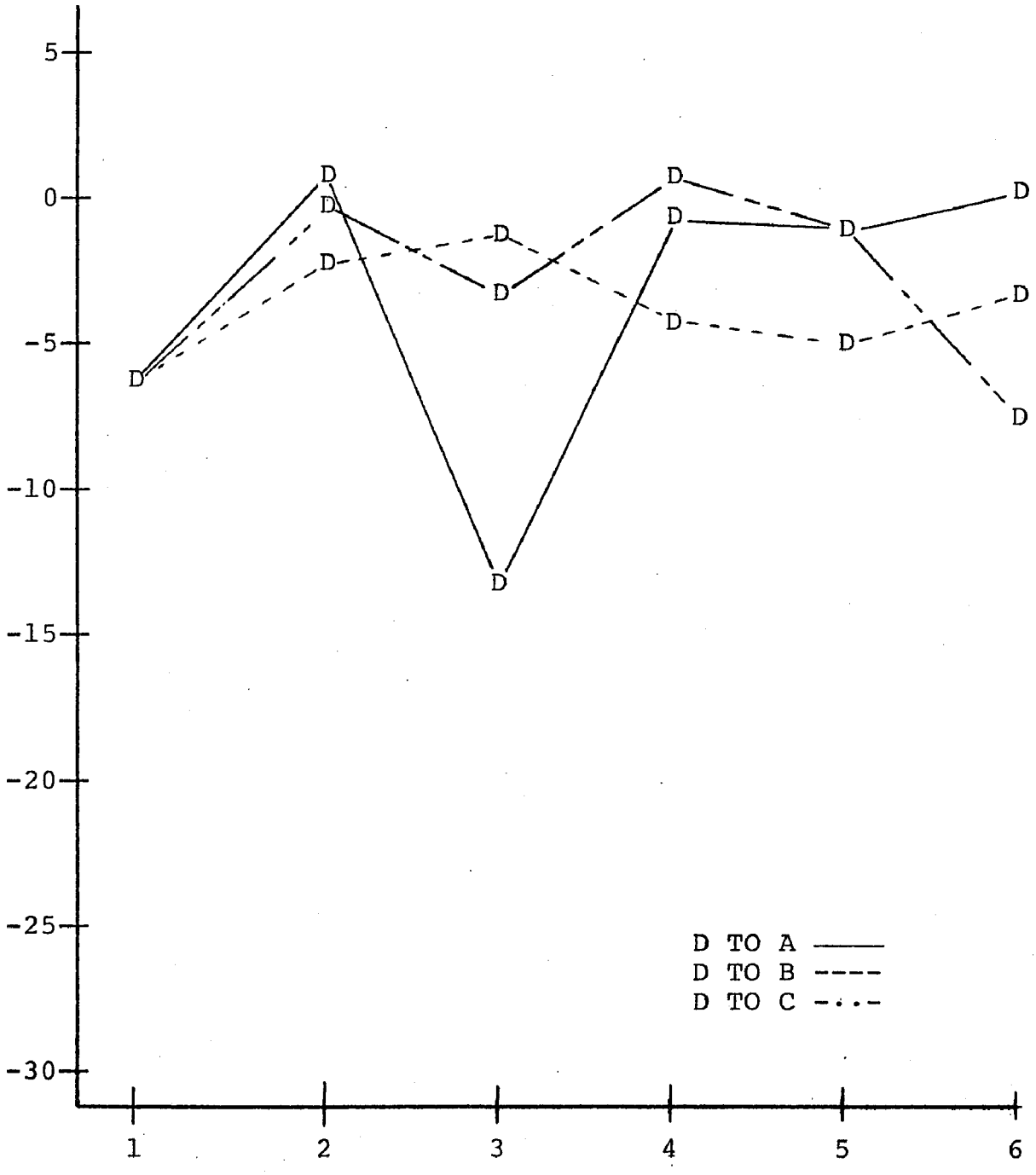
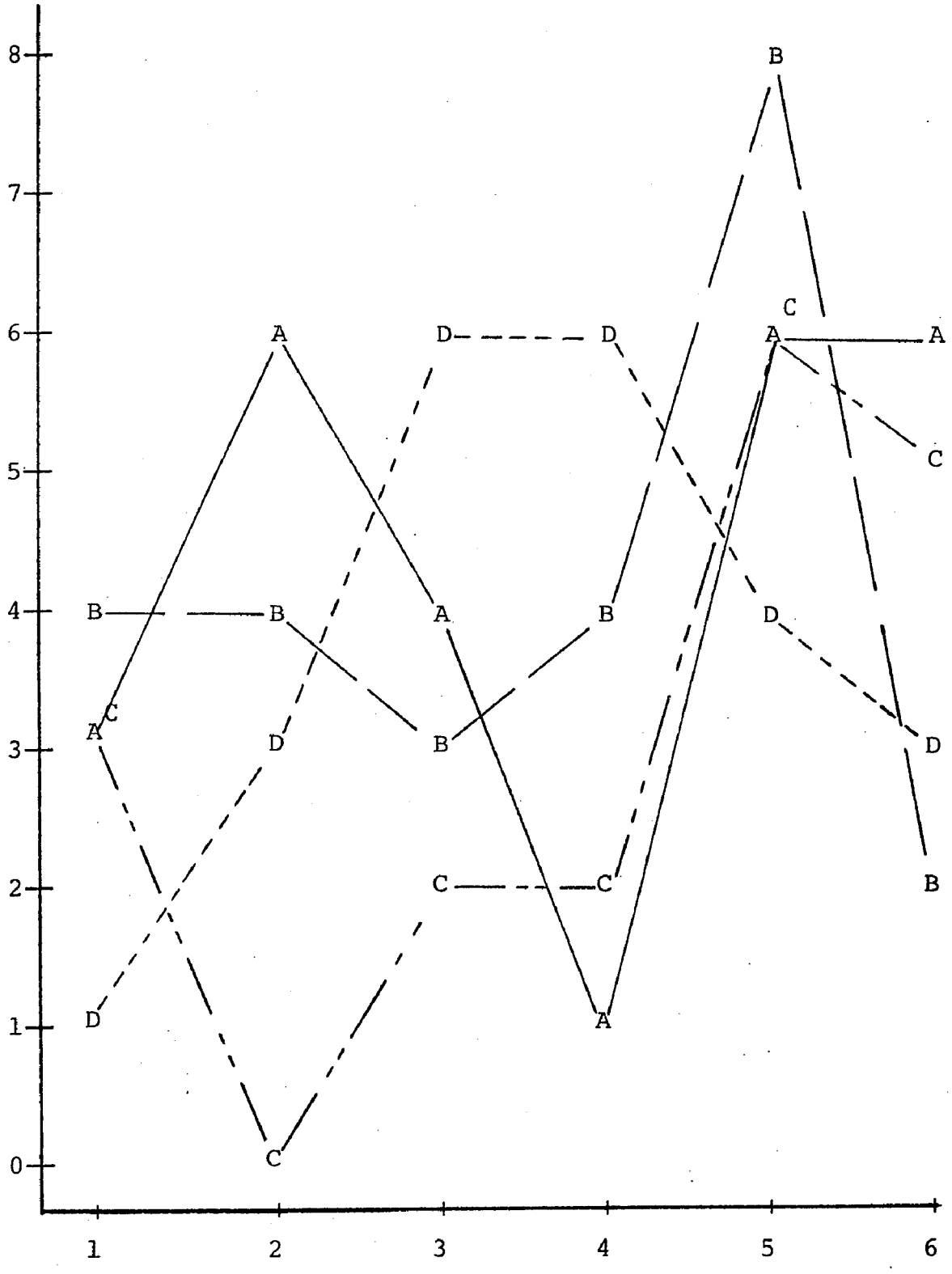


Fig. 22.--The Frequency of Defections From the Subgroups



defections from one subgroup do not follow the patterns of defections from any other subgroup.

The Dynamics of Collective Action

Four patterns of collective action were observed in the trend lines presented in the previous section. These patterns were:

1. A decline in the positive statements directed to one's own group over time.
2. A decline in the negative statements directed to other groups over time.
3. The existence of co-acting subgroups.
4. Reciprocation by those who are the targets of co-acting subgroups.

The variables upon which the formation of these patterns depend will now be considered.

Accompanying the decline in the frequency with which positive speeches were directed to one's own group was a decline in the frequency with which negative speeches were directed toward other groups. The joint occurrence of these two events suggests that the individual acts of each are linked in a dependent relationship. There are four possibilities: (1) a decline in positive speeches from own group directed to own group is dependent on a decline in negative speeches from other groups directed to own group, (2) a decline in negative speeches from other groups directed to own group is dependent on a decline in positive speeches from own group

directed to one's own group, (3) a decline in positive speeches from one's own group and a decline in negative speeches from other groups directed to one's own group are mutually dependent, and (4) no relationship exists between these two varialbes. The next section will show that a decline in negative speeches from other groups directed to one's own group are mutually dependent.

The Process by Which the Number of Positive Speeches Directed to One's Own Group Declined Over Time

The possibility that a decline in positive speeches from one's own group to one's own group is dependent on a decline in negative speeches from other groups directed to one's own group was investigated by cross-tabulating Y's assignment of value to itself. The resultes of these cross-tabulations are presented in Table 13.

The seven significant scores in Table 13 indicate that an association exists between the event of subgroup Y assigning a negative value to X and the subsequent event of X assigning a positive value to itself. These scores are evidence that a decline in the tendency to assign a positive value to one's own subgroup (X) is a function of the decline in the tendency of other groups to assign a negative value to one's own group (X).

TABLE 13

INDEX SCORES FOR SUBGROUP Y'S ASSIGNMENT OF VALUE TO SUBGROUP X CROSS-TABULATED WITH SUBGROUP X'S SUBSEQUENT ASSIGNMENT OF VALUE TO ITSELF

Independent Variable (Y)	Dependent Variable (X)	Tau-B
B TO A	A TO A	-.4461*
C TO A	A TO A	-.4327*
D TO A	A TO A	-.0459
A TO B	B TO B	-.2457*
C TO B	B TO B	-.1316
D TO B	B TO B	-.4283*
A TO C	C TO C	-.3423*
B TO C	C TO C	.0057
D TO C	C TO C	.0557
A TO D	D TO D	.0711
B TO D	D TO D	-.2994*
C TO D	D TO D	-.4021*

*Significant.

The Process by Which the Number of Negative Speeches Directed to Other Groups Declined Over Time

It is now known that the decline in positive speeches from own group to own group is dependent on a decline in negative speeches from other groups to own group. The possibility that two variables are mutually dependent was investigated by cross-tabulating subgroup X's assignment of value to itself with subgroup Y's subsequent assignment of value to subgroup X. The results of these cross-tabulations are presented in Table 14. The significant scores in Table 14 indicate that an association

TABLE 14

INDEX SCORES FOR SUBGROUP X'S ASSIGNMENT OF VALUE TO ITSELF CROSS-TABULATED WITH SUBGROUP Y'S SUBSEQUENT ASSIGNMENT OF VALUE TO X

Independent Variable (X)	Dependent Variable (Y)	Tau-B
A TO A	B TO A	-.1413
A TO A	C TO A	-.4067*
A TO A	D TO A	-.1358
B TO B	A TO B	-.1885
B TO B	C TO B	-.3413*
B TO B	C TO B	-.2976*
C TO C	A TO C	-.4153*
C TO C	B TO C	-.0998
C TO C	D TO C	-.1463
D TO D	A TO D	.0657
D TO D	A TO D	.1807
D TO D	C TO D	-.5541*

*Significant.

does exist between the event of subgroup X assigning a positive value to itself and the subsequent event of subgroup Y assigning a negative value to subgroup X. The significant scores in Table 13 and 14 are affirmative evidence for the existence of a casual circle of mutual feedbacks--a circle in which reduction in another subgroup's assignment of negative value to one's own subgroup in turn leads to a reduction in the assignment of positive value to one's own subgroup, which in turn leads to a reduction in another subgroup's assignment of negative value to one's own group, and so on.

The Process by Which Subgroups Co-act

Figures 13-16 reveal similarities between subgroups in their behavior toward third subgroups. The relationship between these co-acting subgroups, however, remains unknown. Each co-actor's immediate impact on the other was therefore measured by cross-tabulating the behavior of one with the behavior of the other.

By this process it was hoped that a clearer understanding of the process by which these subgroups co-act could be gained. The results of these cross-tabulations are shown in Table 15.

Row 1 in Table 15 reveals that the relationship between the Dependent Complainers and the Counterdependents in their relations with the Loyal Compliants is not the product of immediate cooperation. The two subgroups relate in a similar manner to the Loyal Compliants but they do so at different times.

Row 2 in Table 15 shows that the relationship between the Dependent Complainers and the Counterdependents in their relations with the Self-sufficients is the product of mutual and reciprocal cooperation. Row 3 in Table 15 shows the same relationship to exist between the Loyal Compliants and Self-sufficients in their relations with the Counterdependents. Finally, row 4 in Table 15 shows that the behavior of the Counterdependents toward the Dependent Complainers is the result of immediate and close cooperation with the Loyal Compliants.

TABLE 15

INDEX SCORES FOR THE CROSS-TABULATION OF THE VALUES ASSIGNED BY CO-ACTING SUBGROUPS TO THIRD PARTY SUBGROUPS

Independent Variable (X)	Dependent Variable (Y)	Tau-B
A TO B	C TO B	.0271
C TO B	A TO B	-.0895
A TO D	C TO D	.3558*
C TO D	A TO D	.4710*
B TO C	D TO C	.3085*
D TO C	B TO C	.4681*
B TO A	C TO A	.3427*
C TO A	B TO A	.0995

*Significant.

The Loyal Compliants, however, act independently of the Counterdependents in their relations with the Dependent Complainers. Row 4 of Table 15 provides an example of co-acting subgroups in which one subgroup leads and the other follows.

Conclusions

The frequency tables, trend lines and cross-tabulations have provided a number of answers to the questions posed in Chapter I.

How Lengthy Sequences of Subgroup Behavior Were Patterned

Four patterns of collective action were observed in the trend lines presented in Chapter IV. These patterns will now be presented and discussed individually.

The Decline in Positive Statements Directed to Own Group

Two reactive strategies were available to subgroups if negative statements were directed to them. Subgroups could either respond with a counterattack, assigning negative value to the aggressor, or subgroups could mount a defense, assigning positive value to their own group. The frequency with which positive value was assigned to one's own group would then be one measure with which to gauge the degree that subgroups felt threatened. The fact that three of the four subgroups declined over the three sessions in the number of positive statements they directed to themselves is of interest, then, because a decline in positive statements directed to one's own subgroup indicates that the subgroups might have been experiencing a decreasing need to be defensive as the group developed. This pattern then suggests that defensive behavior diminishes over time. A second pattern observed in the trend lines, the decline of negative statements directed to other groups, casts doubt, however, on the conclusion that time is the only variable upon which the decline of defensive behavior depends.

The Decline in Negative Statements Directed to Other Groups

The four subgroups interacting with one another combined to produce twelve two-party relationships (e.g., Dependent Complainers and the Loyal Compliants, the Dependent Complainers and the Counterdependents, etc.). Eight of these twelve relationships contained fewer negative speeches in the second half than in the first half of the three sessions. This observation was informative because the decline in negative speeches directed toward other groups indicated that over the three sessions subgroups were declining in the number of hostile acts they initiated, engaging in fewer counterattacks, or both. This finding also provided an explanation for why the number of positive statements assigned to one's own group declined over time: the less hostility present in the group, the less need to be defensive.

The Existence of Co-acting Subgroups

An analysis of the trend lines disclosed that some sequences of subgroup behavior are patterned in similar ways. This finding was of interest because the existence of similarity between subgroups in their relations with third party groups was accepted as evidence that subgroups were co-acting. The existence of co-action between the subgroups raises the possibility that subgroups were cooperating in their relations with third

party subgroups. The evidence does not, however, document cooperation--only co-action. The degree to which the co-acting groups actually modified their own behaviors in response to the behaviors of other subgroups are not shown by the trend lines. Nevertheless, the existence of co-acting subgroups does raise the possibility that subgroups did form coalitions for the purpose of relating to third party groups. The formation of coalitions is of interest because of their impact on the structure of groups. An observer who believes that he is viewing four subgroups acting independently of each other when he is actually observing four subgroups acting cooperatively would be at a disadvantage if he wished to understand the events of the group. The data of this study gives an observer good reason to suspect that the structure of the group he is viewing includes co-acting groups.

Reciprocation by Those Who Are the Targets of Co-acting Groups

This study has provided evidence to support the conclusion that similar patterns of behavior do not go unnoticed nor unresponded to by the subgroups to which those behaviors are directed. The trend lines show, instead, that if treated alike by co-acting subgroups a subgroup will, in turn, treat the co-acting subgroups alike. The reciprocation by those who are targets of co-acting subgroups indicates that the group's structure

consists in part of coalitions, and these coalitions have an impact on the events of the group.

The Variables on Which Collective Patterns of Behavior Depend

The search for dependent variables disclosed that the decline in positive value assigned to one's own subgroup and the decline in negative values directed to other subgroups were linked by a mutual and reciprocal relationship. Evidence for the existence of a causal circle of mutual feedbacks between these two variables is informative because it reveals something of the way groups operate. A reduction in one of these variables is accompanied by a reduction in the other variable. Likewise, an increase in one of the variables is accompanied by an increase in the other variable. The close connection existing between the events of group life is underscored by the identification of mutual and reciprocal relationship.

The search for dependent variables also disclosed that co-action between subgroups does not depend on immediate and mutual cooperation. Subgroups were observed to co-act, yet their mutual responses were not closely connected in time. Although co-action was not observed to be dependent upon immediate and mutual cooperation, several subgroups that were co-acting were observed to do so with immediate and mutual cooperation.

A dependent variable was, however, identified for co-action. That variable was similarity in tactic. The

identification of tactic as a dependent variable is interesting in and of itself, but becomes more interesting when coupled with the fact that co-action did not depend on similarity in goals between subgroups. This finding suggests the following hypothesis for further study: Groups employing similar tactics in pursuit of their goals are more likely to align themselves, even though their goals conflict, than are groups employing differing tactics in pursuit of common goals. Although the methodological foundation of this study was not perfect, it seems sufficient to support future research of this and several additional hypotheses. They are: (1) A mutual and reciprocal relationship exists between the number of positive speeches delivered to one's own subgroup and the number of negative speeches directed to other subgroups; (2) Subgroups that are the target of co-actors will reciprocate with a uniform response to each of the co-actors.

The analysis of subgroup behavior is far from completion. The study of the correspondence between the behavior of one subgroup and the behavior of a second subgroup has just begun. The conclusion of this study entails some disappointment, but it also carries a strong sense of satisfaction that the complexity of group behavior, in some small way, is now better understood.

Summary

The frequencies of collective action were presented in this chapter as measures of subgroup involvement. Four patterns of collective behavior were then identified within the trend lines presented. Finally, the cross-tabulations of subgroup performances were used to identify the variables on which collective behavior depends.

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