DEFECTORS, TRAITORS, AND RELATIVE POWER: 
THE EFFECTS OF LEAVING A STABLE COALITION

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Summary:

This study used coalitions as a model for organizations, and leaving a coalition as a model of career mobility. The effects of defection, from the point of view of the defector and the non-defectors, were investigated using a number of behavioral measures. Results indicated that defection from stable coalitions in the four coalition games studied here led to a reduction in benefits for both the defector and the non-defectors. Defectors operationally defined as traitors fared more poorly than non-traitorous defectors, particularly in the long run. And relative power, over all conditions, led to significantly more positive outcomes than relative equality or weakness. Other uses of coalitions as models of organizational behavior are discussed.

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Managers are often faced with difficult decisions. Although often constrained by time, rules, and regulations, managers nevertheless have a variety of options to choose from in making these decisions. One type of decision that talented managers may frequently face, particularly if success can easily be attributed to their individual behaviors, concerns "loyalty" to the current organization. Even in the worst of times, obviously talented individuals are continuously in demand. Thus, they will often be faced with a variety of career options, only one of which may be continuing with the same firm. In highly competitive organizational systems, where success is based on the abilities of the labor force (e.g., advertising agencies, television networks, etc.), the choice between staying or leaving to work with a competitor can be construed as a choice between serving individualistic or group-oriented goals. Staying with one's current organization often results in fewer personal gains, but greater benefits for the organization. Leaving to work with a competitor often results in increased individual gain. The dilemma is one that is typical of large groups (e.g., Hardin, 1968; Olson, 1965).

If the organization is viewed as a coalition (Cyert and March, 1963; Pfeffer and Salancik, 1978), the individuals who change organizations can be viewed as defectors. This paper focuses on the effects of defection, and utilizes four different coalition games to model competitive systems where individuals' resources are important determinants of success.

Coalition games are models of n-person mixed-motive conflict situations. Formation of a coalition requires cooperation among coalition members, but almost always has strong elements of competition when all the individuals playing the game cannot be included in the same coalition.
Thus, there is competition for inclusion. In addition, there is competition within the coalition to determine how the coalition's payoff will be divided among its members. Coalition games, then, might be viewed as models of systems of organization, with coalitions being models of organizations. This research uses coalitions as models of organizations, and investigates the effects of defection on the defector and on the remaining members of the coalition. In addition, where Castore and Murnighan (1978) investigated the determinants of individualistic rather than group-oriented behavior, the present research studies the consequences of defection (i.e., one type of individualistic behavior).

Defection from a coalition is simply a departure by one coalition member to join another coalition. Because research on coalitions (see Murnighan, 1978, for a review) has repeatedly found that minimum winning coalitions (i.e., coalitions where the departure of any member renders them no longer winning) tend to form almost to the exclusion of all others, defection becomes a real threat for current coalitions. Such devastating effects are less likely in large organizations, which can often survive after the departure of one of its members. However, the disruption that a defection can cause, particularly if it means movement by key personnel from one's own organization to a competitor's organization, is not unimportant. By way of example, the severity of such threats is readily apparent when the owners of professional football teams follow the common practice of changing the locks on their organization's headquarters prior to a head coach's departure to work for another team.

Just as defection is a threat to coalitions, Hall (1976) has noted that mobility, from one organization to its competitor, is a threat to
organizations. Jennings (1971) has persuasively argued that the mobile manager is valued. However, such an individual is particularly valued by the organization s/he joins, rather than by the organization s/he leaves.

Jennings also implies that potentially successful individuals will reach success more quickly by moving. In coalition terms, the defector would be predicted to gain by his/her defection. The present study tests this hypothesis, by evaluating the effects of defection both on the defector and on the members of the prior coalition. In addition, models of coalition behavior are used to predict when defection will be effective for the defector, and when defection will be successfully endured by previous coalition partners.

In differentiating between effective and ineffective defections, (for both the defector and his/her previous partners), coalition models have stressed the importance of the individual's current payoffs, the payoffs that other coalitions offer and the relationship between the two. For instance, consider the simplest coalition situation, where any two of three individuals can form a winning coalition, and where individuals A and B have formed a stable coalition. If individual B succumbs to temptation and forms a coalition with player C, the short-run outcomes are positive for players B and C and negative for player A. However, if player B has taken a very high payoff for defecting, s/he becomes vulnerable. Coalition models (eg., Aumann and Maschler, 1964; Komorita and Chertkoff, 1974) point out that individual C may be inclined to defect from the BC coalition and form a coalition with A, excluding individual B entirely. This situation might be labelled the "Judas Iscariot Phenomenon", with player B in the title role. Player B has betrayed a
stable coalition partner, A, and, having fulfilled C's purpose of breaking up the AB coalition, is no longer so valuable to C. That both A and C will be less inclined to deal with B in the long run, then, is not surprising.

Komorita and Chertkoff (1973) have formally defined the conditions when payoffs are "extremely high", calling them non-viable. A non-viable payoff is one that exceeds one's best possible payoff, as determined either by the equality norm (i.e., everyone should share the payoff equally) or by the equity norm (i.e., payoffs should be proportional to an individual's resources). For instance, one of the coalition games used in this study assigned resources to the players, in terms of votes, where player A received 10 votes, B received 7 votes, C 5 votes, D 3 votes, and E 2 votes. A winning coalition had to obtain a majority of the votes (14). (This game can be depicted as 14(10-7-5-3-2), where the first number indicates the number of votes needed to win, and the subsequent numbers indicate the votes assigned to the players.) In this situation, if players A and C have formed a winning coalition (their votes total 15) and player A defects to form a coalition with player B, his payoffs will be considered viable if they do not exceed a payoff of 66.67%. This figure is determined by the fact that, in either the AC or ADE coalition, player A contributes 10 of the 15 votes controlled by the coalition. Equity, where payoffs are proportional to resources, dictates a payoff of 66.67%; application of the equality norm or the equity norm to other coalitions results in a lower payoff for A. Thus, Komorita and Chertkoff (1973) define payoffs over 66.67% as non-viable, and predict that they will result in player A being vulnerable to subsequent exclusion. Alternatively, if player C defected
from the AC coalition to form a coalition with players B and E, his/her payoffs would be judged as to their viability on the basis of the best payoff received when invoking the equality norm. In this instance, in a coalition with B and E, player C contributes 5 of 14 votes. Equity would yield a payoff of 35.71%. Application of the equity norm to any other coalition yields C even lower payoffs. However, the use of the equality norm in a coalition with player A yields an equal split of 50%. Thus, 50% become player C's best possible payoff; if s/he defects for more than 50% of the payoff (i.e., accepting a non-viable payoff) player C should also be vulnerable to potential long-run exclusion.

To better illustrate this notion of viable and non-viable payoffs, consider a situation where an individual works for a small company in a competitive labor-intensive industry. A competitor within the industry offers him/her a position in their company with a significantly higher salary, increased prestige, more autonomy, etc. The individual's first joyful response might be, "This is too good to be true!" Coalition models would tell this individual to take that statement literally; it is too good to be true. Such prosperity should not be expected to last. A more specific example of just this type of situation has also been popularized by espionage novels: The noted scientist who defects to obtain a much better situation finds, after doing so, that the grass is not so green on the other side, especially after he has no more secrets to offer. Thus, according to the coalition models, the effectiveness of defection for an individual may depend on the viability of the offer s/he accepts.
Factors other than viability, however, might also influence the effectiveness of defection. For instance, if the entire system is temporary and will soon be dissolving (in Caplow's (1964) terms, a terminal situation), defecting for a non-viable (and very high) payoff immediately prior to the end of an interaction becomes an excellent strategy. Thus, the timing of defection becomes important. In addition, defecting from a stable coalition for a very high payoff may also be effective if the defector is dealing with unsophisticated players who do not have the skill required to effectively exclude him/her in subsequent interactions.

To allow for a test of this last notion, the participants in this study played each of four games, increasing their bargaining sophistication with each game. This is not unlike "real world" bargaining interactions: On one's first trip to a Mexican or Turkish bazaar, an individual often lacks many of the skills needed to get the best bargain. In the coalition games in this study, such inexperience, even though it might be a characteristic of the defector as well as the other players, should have augmented the payoffs a defector could subsequently obtain. In addition, each of the games was "terminal", allowing for comparisons between defectors taking non-viable payoffs immediately prior to termination and defectors leaving earlier, considerably prior to termination.

Three factors, then, have been highlighted as possibly determining the effectiveness of defection: The viability of the defector's payoff, the timing of defection, and the sophistication of the players. Indeed, it might be predicted that unless an individual violates all of these conditions, s/he may gain from defecting. For instance, taking a non-viable payoff late in the game is advantageous to the defector, as is
taking a non-viable payoff early in the game from unsophisticated players. However, taking a non-viable payoff early in the game from sophisticated players, players who have the ability to exclude the defector from subsequent coalitions, may be opening the door for disaster. Indeed, in these situations, the defector might be labelled a \textit{traitor}: \text{s/he} has taken a large payoff, more than \text{s/he} should expect, thus alienating both previous and subsequent coalition partner(s). In the five-person games studied here, few unoffended players will remain. And when trust has been broken, it is difficult to reestablish \cite{Gamson1967, MurnighanLeung1976, RapoportChammah1966, RothMurnighan1978}.

One additional variable may also be important. Individuals in very powerful positions may be able to reassert themselves following their defection, even if they have defected from sophisticated players for an early, non-viable payoff. \text{Hall} (1976), for instance, proposes a relationship between career options and influence: "The more career options you have, \ldots the more influence you have within the system \cite[p. 186]{Hall1976}". This paper takes a similar point of view: While additional options may be the basis for an individual's power, an individual with power also will tend to have many available options. We are suggesting, then, a mutually casual relationship between power and available alternatives.

Coalition models \cite{Shapley1953, Komorita1974} have formally analyzed the power of the players in coalition games. For instance, in the 14(10-7-5-3-2) game mentioned above, player A is attributed with more power than players B and C, who in turn are attributed with more power than players D and E. This increased power is based on the player's
greater potential to turn non-winning coalitions into winning coalitions or on a player's ability to form a greater number of small winning coalitions.

The four games in this study, therefore, were designed to establish four different power structures among the players. von Neumann and Morgenstern (1944) have shown that there are only four five-person games that (1) have a constant payoff to winning coalitions (i.e., simple games), (2) do not include a dictator (i.e., a player who can obtain the entire payoff by him/herself, without the necessity of forming a coalition) or a veto player (i.e., one who must be included in every winning coalition), and (3) realistically involve all the players (in their terms, all players are essential). The four games studied here are examples of these four possibilities. The power relationship among the players is exemplified by the players strategic positions, which is based on the winning coalitions that can form. For instance, if two five-person games with different resource distributions (e.g., 14(10-7-5-4-2) and 10(6-5-4-3-2)) yield the same set of winning coalitions (e.g., AB, AC, BCF, BCD, any three-player coalition that includes A, and any four- or five-player coalition), then they are considered to be identical, and the strategic positions of each of the players in the respective positions are also identical. Following von Neumann and Morgenstern (1944), the strategic positions of the players are classifications of the power of the players (on an ordinal scale within a game) where the weakest players receive one vote, and each player with additional power receives as few additional votes as is necessary to depict the game. Thus, the strategic positions of the players in the above two
examples is depicted by 5(3-2-2-1-1). Notice that the winning coalitions for the examples and for their strategic depictions are identical. Table 1 displays the four games used in this study and their strategic representations, along with each player's maximum viable payoff and the minimum winning coalitions. From the strategic representations, it is clear that each game represented a different power structure.

In considering the effects of a powerful position following a defection, one's power relative to the other players in the game may be the most important determinant of an individual's ability to reassert him/herself after defecting. Even if one is powerful, if there is another powerful player in the game, defecting is a greater risk than if other players as powerful as oneself are not present. Thus, in the 27(15-14-10-8-5) game, players A and B are powerful (one of them must be included in the winning coalition); but should either of them decide to defect from a stable coalition, s/he must deal with the other, who poses a considerable threat to his/her subsequent payoffs and coalition inclusions. Players in the A position in either the 14(10-7-5-3-2) or the 30(24-9-8-7-6) games are not faced with such potent threats. Thus, the relative power of a player in these games is predicted to be positively related to his/her effectiveness as a defector.

This discussion has highlighted the potential importance of several variables on the effectiveness of defection. From the defector's point of view, defection should lead to increased outcomes (in terms of payoffs and subsequent inclusions in winning coalitions) if the defector takes non-viable payoffs, if the defector is not a traitor, and if the defector is
relatively powerful. Directly relating these hypotheses to the other members of the previously stable coalition, i.e., non-defectors, they should endure a defection more successfully if they are deserted by a traitor or if they are relatively powerful. In addition, non-defectors who had been receiving non-viable payoffs prior to the dissolution of their stable coalition should do worse subsequently than non-defectors who had been receiving viable payoffs. Rationale for this hypothesis parallels the earlier notion that alienation among the other players may increase when one receives non-viable payoffs. In addition, after receiving non-viable payoffs for several trials, a player may find it difficult to make offers to others that are tempting enough to gain re-entry into a new coalition. In other words, one's aspirations (cf., Lewin, Dembo, Festinger, and Sears, 1944; Thibaut and Kelley, 1959) may rise with success.

Finally, following Jennings (1971), defectors are predicted to be more successful following defection than they would have been without defecting. A corollary to this prediction is that defectors will be more successful than non-defectors. In summary, the following hypotheses were proposed:

1. Defectors taking non-viable payoffs will fare poorly in the long run, compared with defectors who take viable payoffs.
2. Traitors will fare poorly, compared with non-traitors.
3. Relatively powerful players, defectors or non-defectors, will fare better than relatively weak players.
(4) Non-defectors who have been deserted by a traitor will fare better than non-defectors deserted by non-traitors.

(5) Non-defectors who have been receiving non-viable payoffs will fare worse than non-defectors who have been receiving viable payoffs.

(6) Defectors will benefit from defecting.

(7) Defectors will fare better than non-defectors after their departure.

Method

Participants. The participants were 200 advanced undergraduate and graduate students, 170 males and 30 females, enrolled in either a behavioral science or a group processes course in a commerce department. To complete the project requirement in the course, students had a choice between writing a library research paper or participating in the bargaining exercises and completing a paper analyzing their own strategies in each of the games. The performance in either option accounted for 10-20% of the grade in the course. Students who participated in the bargaining exercises were informed that their performance in the games would be compared to the performance of other students in the same positions as themselves (eg., all B's in the 14(10-7-3-2) game would be compared with one another). Those scoring better than the average total points for their position would assure themselves of an "A" for that portion of the project (although they were also required to complete the paper); those scoring less than the average could still receive an "A" by doing an excellent job analyzing their strategies in the paper.
Only with a relatively poor paper and below average performance in the games would a student earn a "B" for the project.

Each of the 40 groups played each of the four games in one of the 24 different orders that were possible; each of these 24 were represented at least once in the sample. Each game was played for a total of 12 trials, where a trial was defined as the formation of a winning coalition.

Procedure. The participants were given general instructions about the coalition games in the class prior to the first session. Several examples of the use of the procedure (in games not used later) were discussed. The players were told that there would be 12 trials (where a trial was determined by the formation of a winning coalition) in each game, and on each trial, the winning coalition would divide a prize of 100 points among its members. They were instructed to do as well as they could (i.e., maximize their points) because their performance would and did determine part of their course grade.

Students were randomly assigned to groups, with the constraint that members be unacquainted. Each group met for its sessions at the same hour each week for four weeks. The players were told which game they would be playing each week, but not which position they would hold throughout each game. Participants were told that they would be in at least one strong position and at least one weak position in each of the games. They were allowed to discuss the games with other members of their class, excluding members of their own group. In addition, the players were encouraged to formulate strategies for each position prior to each game.
During the games, the players were seated around a set of opaque partitions that shielded them from view of each other and the experimenter. At each group's first session, the experimenter read specific instructions about the procedures for the games. During the games, the players exchanged offers on each trial by means of written "offer slips", which required indicating to whom one wished to send his/her offer and a proposal regarding the division of rewards for the prospective coalition members. For example, if player X wished to form an XY coalition, s/he addressed an offer to player Y and specified a division of the rewards (e.g., 60 for X and 40 for Y) on the offer slip. A player was required to send an offer slip to each player included in the proposed coalition. Thus, if a player proposed a three-person coalition, two offer slips were sent, one to each of the proposed coalition partners. Players were also told that the two offer slips must be identical with regard to the proposed division of rewards; for example, a player could not send an offer to one person to form one coalition and a second different offer to another person to form another coalition. After the players had completed the offers, the experimenter collected, examined, and distributed them to the proper persons.

After receiving an offer, each person could accept or reject it by marking "Accept" or "Reject" at the bottom of each offer slip. Players receiving more than one offer could accept at most one offer, unless the offers proposed the identical payoff division for the same coalition. Hence, each person could only accept offers to form a single coalition on each trial. Furthermore, in determining a winning coalition, any
player's proposal, if accepted, had priority over any offer he might accept, thus committing a player to his/her own offer. After the offers had been accepted or rejected, the experimenter collected the offer slips and announced the winning coalition, if one had formed. A coalition was declared the winning one if all the proposed coalition partners accepted the offer. If no coalition formed because at least one person rejected each of the proposed coalitions, the procedure was repeated until one had formed successfully. This procedure allowed for acceptance within the group of two or three proposals on the same trial. For instance, if A sent an offer to C, D sent an offer to A, and both offers were accepted, AC would be declared the winning coalition because A was committed to his/her offer (invalidating his/her acceptance). While the offer D sent to A did not result in a coalition, it indicated the exact nature (i.e., how much s/he was willing to offer) of D's interest. If three coalitions formed in this manner, with each being invalidated by another, the players were informed of the situation and the trial was rerun.

A practice trial was conducted before the start of the first session. Immediately after the practice trial, the players were assigned to their positions for that game. Lists of the resources (i.e., votes) for each position and the set of winning coalitions were also provided. No verbal communication was permitted thereafter; hence, the players could not identify each others' positions once the session had begun.

The instructions were summarized for the players at the start of their second, third, and fourth sessions. Practice trials were not run, but assignment to one of the five positions and information about the resources for each of the positions and the set of winning coalitions were
distributed after the players were seated behind the partitions. Thus, for each game, the players were not informed of the identity of the players in the other positions.

Lengthy discussions of the games that included explicit debriefing about hypotheses in the study were conducted approximately four weeks after the data collection was completed.

Operationalizations. Stable coalitions were operationally defined as coalitions with the same members for three or more consecutive trials. Thus, if players A, D, and E formed coalitions on trials 3, 4, and 5 (or longer) the ADE coalition was stable. A defector from this coalition was defined as the common member in a stable coalition and the coalition that formed in the first trial following its breakup. Thus, if on trial 6 an AB coalition formed, then player A was viewed as a defector. Players D and E in this example were defined to be non-defectors. Traitors were defined as defectors who took a non-viable payoff (i.e., one that was larger than the best offer they could expect; that is, the maximum viable payoff, according to Komorita and Chertkoff's bargaining theory) early in the game (prior to the tenth of the twelve trials) from sophisticated players (in the second, third or fourth session the group played). The players were assumed to be sophisticated, then, after their first session and were assumed to expect defection late in the game, removing the "traitor" stigma from those who defected late. Non-traitors were defectors who took a viable payoff, defected on the tenth or eleventh trial, or defected in the first session. Relative power was defined by the players' strategic positions in relation to other strategic positions for that game.
Relatively powerful players, those who were more powerful than any other player in the game, were player A's in the 30(24-9-8-7-6) and the 14(10-7-5-3-2) games; relatively equal players were players A and B in the 27(15-14-10-8-5) game and all the players in the 20(10-9-8-7-5) game; relatively weak players included players B, C, D, and E in the 30(24--9-8-7-6) and 14(10-7-5-3-2) games and players C, D, and E in the 27(15-14-10-8-5) game. None of these concepts were mentioned to the participants during the course of the experiment.

Dependent Variables. A number of dependent variables pertaining to the player's payoffs, offers received, and inclusion in winning coalitions were examined. Pre-defection payoffs and offers received refer to outcomes in stable coalition trials prior to the defection trial. Post-defection payoffs and offers received include the defection trial and all subsequent trials. Long-run payoffs and offers received are averaged over all trials after but not including the defection trial. Similarly, the proportion of post-defection coalition inclusions does not include the defection trial.

Results

In the forty groups and 155 games played, a total of 166 stable coalitions formed. Thus, more than a single coalition formed in several games. Of these 166 stable coalitions, 35 (21%) continued through the terminal, 12th trial. Because no defection occurred in these instances, these data could not be included in the analyses. In the 131 stable coalitions included in the sample, there were 137 defectors: In six instances, two players simultaneously defected from the coalition. Finally, due to
the common occurrence of stable coalitions of three players, there were a total of 179 non-defectors.

The basic design for analysis was a two (traitor/non-traitor) by three (relative power: strong, equal, weak) by two (defector/non-defector) completely crossed between subjects factorial. Cell sizes showed considerable variation. In particular, there were few relatively strong players who were non-defectors in a stable coalition that was abandoned by a traitor. Because this low frequency may be a direct reflection of the independent variables, least squares analyses of variance were used. The results revealed no significant three-way interactions; therefore, the cell sizes in the two-way interactions were large enough to quell any interpretation problems caused by the inconsistent cell sizes.

Prior to analyzing the data with traitor/non-traitor as one of the independent variables, a similar three-way analysis of variance was conducted with viable/non-viable payoffs for the defector as the first independent variable. The traitor variable incorporated non-viable payoffs as one condition for being a traitor, and the preliminary analysis was conducted to insure that the additional elements in the determination of a traitor (i.e., defecting early from sophisticated players) were important in determining the results of defection (and to test the first hypothesis). Although the results of the viable by relative power by defector analyses were generally in the same direction as the results in the traitor by relative power by defector analyses, the effects (and the differences between means) were noticeably smaller.
Defectors who took viable payoffs received long run mean payoffs that were almost identical (34.3 vs. 35.3; \( t(119) < 1\), ns) to those received by defectors who took non-viable payoffs. However, viable defectors received more long run offers (means of 2.22 and 1.78, \( t(119) = 2.82\), \( p < .006\), two-tailed) and were included in somewhat more winning coalitions (mean proportions of .735 and .588, \( t(119) = 1.15\), ns) than defectors who took non-viable payoffs. Thus hypothesis 1 received mixed support.

Because the traitor by relative power by defector anova revealed several significant effects for mean payoff and mean number of offers received prior to defection (see Tables 3, 4, and 5), an analysis of covariance was used, with previous payoffs as a covariate for the payoff variables and previous offers as a covariate for the offers variables. There were almost no differences between the covariance and variance analyses. Thus, because they are simpler, the least squares anovas will be discussed.

A large number of effects reached standard significance levels in the traitor by relative power by defector analyses. The significant main effects will be reported first, followed by the significant interactions. References to the hypotheses will be made as each relevant test is presented. No significant main effects were found for traitor/non-traitor or for interactions between traitor/non-traitor and relative power (except for pre-defection payoffs). The major results are summarized in Tables 2, 3, 4, and 5.
A summary of the main effects for relative power for offers received is displayed in Table 2. Relatively equal and weak players received somewhat more offers than the relatively strong players on the defection trial and prior to defection. However, after defection, particularly in the long run, relatively strong players received more offers. Post-defection trials may have been characterized by increased competition among the players, in which case it is appropriate to approach the relatively strong individual, who can single-handedly alleviate the "crisis" (if s/he wishes). The significant effect for post-defection inclusion acts almost as a manipulation check of relative power, reinforcing the notion that relatively powerful players do form more coalitions than relatively equal players, who in turn are included more than relatively weak players.

The main effects for relative power for the payoff variables can be easily observed in the means in Table 4. Relatively strong players received significantly larger pre-defection, post-defection, and long run payoffs than relatively equal or relatively weak players. (The $F$-ratios in each case exceeded 41.89, $p < .001$.) Hypothesis 3, then, receives strong support.

The main effects for defector are shown in Table 3. Prior to the defection trial, defectors were receiving higher payoffs and more offers than non-defectors. This result suggests that prosperity may have led to defection. Clearly, the defectors received more offers on the defection trial, and obtained higher payoffs and more offers after the stable coalition had been broken up. While long run payoffs also were better for the defectors, long run offers and post-defection inclusion did not yield significant advantages for the defector. This result suggests the possibility that, as the
trials continued, the defector may have been losing his/her dominant position. In particular, though, it is noteworthy that post-defection and long run payoffs and offers were less than pre-defection payoffs and offers for both defectors and non-defectors. Yielding to the temptation to defect appears to have clear negative consequences compared with the outcomes obtained in a stable coalition. Thus, hypothesis 6 is not supported, while hypothesis 7 receives some support, although the continued superiority of defectors may be questionable.

Relative power by defector interactions were significant for each of the payoff variables (see Table 4). The lone main effect for pre-defection payoffs for defectors is accounted for almost completely by the differences in payoffs for the relatively strong defectors versus the relatively strong non-defectors. Post-defection payoffs highlight the superiority of the defector: If a defection is going to occur, it pays to be the defector. From the point of view of the defector, then, defection is better than non-defection, supporting hypothesis 7. From the non-defectors viewpoint, however, relatively equal players did as well in the long term as did the defectors. This was not the case for the relatively powerful players, who continued to hold a significant advantage over non-defectors.

Several interactions between traitor and defector were significant (see Table 5). The results for the three payoff variables are suggestive of increasing fortunes for non-defectors who have had to deal with a traitor. In particular, such non-defector's payoffs approached the long run payoffs of traitorous defectors, thus yielding some (not significant) support for hypotheses 2 and 4.
Stronger effects in these interactions were found for the offers variables. Whereas traitors received somewhat more offers on the defection trial and prior to defection, their post-defection offers, particularly in the long run, were significantly fewer than non-traitorous defectors. Also, non-defectors faced with a traitor received considerably more offers after defection than non-defectors faced with a non-traitor. This effect also reversed the pre-defection trend. Finally, it is noteworthy that non-defectors faced with a traitor received significantly more long run offers than traitors, and were also included in more (not significantly) winning coalitions after defection than traitors. These findings again support hypothesis 4.

Finally, hypothesis 5 was not supported. Non-defectors who had been receiving non-viable payoffs had long run payoffs, offers, and inclusions that were not significantly different (t < 1 in each case) from those of non-defectors who had been receiving viable payoffs.

Discussion

Seven hypotheses were presented; several dependent variables were utilized to test these hypotheses. Two perspectives were used to evaluate the results, one from the point of view of the defector and one from the point of view of the non-defector.

It is interesting to note that the strongest support for the hypotheses was provided by the offers and inclusions variables rather than by payoffs. Even though the games in this study continued for twelve trials, there could be, at most, nine post-defection trials. Typically, there were less than nine. Thus, the decreasing trend in
defectors' offers and inclusions, if one assumes that offers and inclusions are necessary for obtaining payoffs, might not have had long enough to affect the defectors' payoffs. Future research, then, might use more trials to augment the suggestive findings in this study.

The comparison between the results for defectors versus non-defectors yielded fairly strong evidence that, at least in these situations, defectors did better than non-defectors. The irony of this result, and the most striking result in this study, is that both defectors and non-defectors do worse after defection than they had been doing prior to the defection. In these games, the winners after defection were the players who had been excluded from the stable coalition. Jennings' hypothesis, at least in this study, was not supported, even for the relatively strong. This suggests the possibility that the factors which lead to mobility may also be influential in reaching success. The differentiation of the effects of factors leading to mobility and the effects of mobility by itself offers a difficult challenge to future researchers.

For a player who is a member of the stable coalition, the prospect of defection offers a clear case of an approach-avoidance conflict (Lewin, 1951). Continuing the stable coalition is the best for everyone included, but if someone is going to defect, it pays to be the defector. Again, it is ironic that players may learn not only that stable coalitions are effective in obtaining higher payoffs, more offers, and consistent inclusions, but also that being the defector is better than being the non-defector. The present research also documents the fact that defecting as a traitor is less effective, especially in the long run, than defecting as a non-traitor.
The application of these results to career mobility appear to say that career immobility is best, both for the potential defector and for his/her organization. However, the intense competition that resulted in the coalition games in this study may not be representative of all or even most organizational systems. However, in extremely competitive, fast-paced industries, the defection of a key employee may be disfunctional for the defector and, at least in the short term, for the defector's previous company. Further research in less competitive atmospheres is necessary to establish the generality of the present results.

This study attempted to highlight one facet of coalition bargaining, defection, that has clear organizational implications. As Weick and Penner (1966) persuasively argued, the dynamics of coalition bargaining can be excellent analogies for organizational interactions. Indeed, the complexities of n-person coalition situations have the potential to offer greater opportunities for modeling the diversities of organizational interactions than the more prevalent research on two-person bargaining. This study pursued but one area of coalition bargaining relevant to organizations. Other research might fruitfully investigate the use of threats when one is vulnerable to competing coalitions, responses to exclusion, intercoalition bargaining, etc. As Weick and Penner (1966) noted, coalition research (triads in their paper) "afford an excellent model for the investigation of organizational phenomena (p. 192)". Research on larger groups, with their potential for even more complex interactions, may provide even better models than triads (cf., Murnighan, Komorita, and Szwajkowski, 1977).
References


Table 1

The Games, Their Strategic Representation, The Players' Maximum Viable Payoffs, and The Minimum Winning Coalitions in Each Game

<table>
<thead>
<tr>
<th>The Games</th>
<th>A Strategic Representation Of The Games</th>
<th>Maximum Viable Payoffs</th>
<th>Minimum Winning Coalitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>20(10-9-8-7-5)</td>
<td>3(1-1-1-1-1)</td>
<td>(45-43-40-35-33)</td>
<td>ABC, ABD, ABE, ACD, ACE, ADE, BCE, BDE, CDE</td>
</tr>
<tr>
<td>27(15-14-10-8-5)</td>
<td>4(2-2-1-1-1)</td>
<td>(67-50-50-33-33)</td>
<td>AB, ACD, ACE, ADE, BCD, BCE, BDE</td>
</tr>
<tr>
<td>14(10-7-5-3-2)</td>
<td>5(3-2-2-1-1)</td>
<td>(54-52-33-33-33)</td>
<td>AB, AC, ADE, BCD, ACE</td>
</tr>
<tr>
<td>30(24-9-8-7-6)</td>
<td>4(3-1-1-1-1)</td>
<td>(80-50-50-50-50)</td>
<td>AB, AC, AD, AE, BCDE</td>
</tr>
</tbody>
</table>
Table 2

Summary of Main Effects
For Relative Power on Offers

<table>
<thead>
<tr>
<th>Relative Power</th>
<th>Strong</th>
<th>Equal</th>
<th>Weak</th>
<th>F</th>
<th>df</th>
<th>p^&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Pre-Defection Offers</td>
<td>2.39</td>
<td>2.50</td>
<td>2.59</td>
<td>1.07</td>
<td>2.304</td>
<td>ns</td>
</tr>
<tr>
<td>Offers on the Defection Trial</td>
<td>1.93</td>
<td>2.24</td>
<td>2.28</td>
<td>.44</td>
<td>2.304</td>
<td>ns</td>
</tr>
<tr>
<td>Mean Post-Defection Offers</td>
<td>2.02</td>
<td>1.97</td>
<td>1.81</td>
<td>1.60</td>
<td>2.304</td>
<td>ns</td>
</tr>
<tr>
<td>Mean Long-Run Offers</td>
<td>2.08&lt;sub&gt;a&lt;/sub&gt; 1.85&lt;sub&gt;ab&lt;/sub&gt; 1.62&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.58</td>
<td>2.288</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Post-Defection Inclusions</td>
<td>.817&lt;sub&gt;a&lt;/sub&gt; .579&lt;sub&gt;b&lt;/sub&gt; .437&lt;sub&gt;c&lt;/sub&gt;</td>
<td>10.17</td>
<td>2.288</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Means in each cell are unweighted. Means sharing a common subscript within a main effect are not significantly different from one another at the .05 level using the Newman-Keuls procedure.
Table 3

A Summary of the Defector/Non-Defector

<table>
<thead>
<tr>
<th></th>
<th>Defector</th>
<th>Non-Defector</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>Pre-Defection</td>
<td>47.26</td>
<td>43.90</td>
<td>3.43</td>
<td>1,304</td>
</tr>
<tr>
<td></td>
<td>Post-Defection</td>
<td>42.19</td>
<td>20.44</td>
<td>80.23</td>
<td>1,304</td>
</tr>
<tr>
<td>Payoffs</td>
<td>Long Run</td>
<td>34.89</td>
<td>24.91</td>
<td>12.11</td>
<td>1,288</td>
</tr>
<tr>
<td></td>
<td>Pre-Defection</td>
<td>2.59</td>
<td>2.40</td>
<td>3.25</td>
<td>1,304</td>
</tr>
<tr>
<td>Mean</td>
<td>Defection Trial</td>
<td>2.80</td>
<td>1.50</td>
<td>72.97</td>
<td>1,304</td>
</tr>
<tr>
<td>Offers</td>
<td>Post-Defection</td>
<td>2.13</td>
<td>1.74</td>
<td>10.86</td>
<td>1,304</td>
</tr>
<tr>
<td></td>
<td>Long Run</td>
<td>1.92</td>
<td>1.78</td>
<td>1.10</td>
<td>1,288</td>
</tr>
<tr>
<td>Mean</td>
<td>Post-Defection</td>
<td>.642</td>
<td>.580</td>
<td>&lt; 1</td>
<td>1,288</td>
</tr>
</tbody>
</table>

**Note:** Means in each cell are unweighted.
Table 4

A Summary of the Significant
Relative Power by Defector Interactions

| Dependent Variable | Relative Power | Defector | Non-Defector | F   | df | P <  
|--------------------|----------------|----------|--------------|-----|----|------
| Mean Pre-Defection | Strong         | 71.78    | 59.92        |     |    | .02  
|                    | Equal          | 39.52    | 41.44        | 3.98| 2,304 | .02  
|                    | Weak           | 30.49    | 30.34        |     |    |      
| Mean Post-Defection| Strong         | 69.33    | 32.40        |     |    | .001 
|                    | Equal          | 31.25    | 19.81        | 7.67| 2,304 | .001 
|                    | Weak           | 26.00    | 9.11         |     |    |      
| Mean Long-Run     | Strong         | 64.49    | 38.42        |     |    | .001 
|                    | Equal          | 22.50    | 24.58        | 6.92| 2,288 | .001 
|                    | Weak           | 17.68    | 11.72        |     |    |      

Note: Means in each cell are unweighted. Means sharing a common subscript within an interaction are not significantly different from one another at the .05 level using the Newman-Keuls procedure.
Table 5

A Summary of the Traitor by Defector Interactions

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Defector</th>
<th>Non-Defector</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Pre-Defection</td>
<td>Non-Traitors</td>
<td>46.05</td>
<td>43.76</td>
<td>&lt;1</td>
<td>1,204</td>
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<tr>
<td>Payoffs</td>
<td>Traitors</td>
<td>48.48</td>
<td>44.04</td>
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</tr>
<tr>
<td>Mean Post-Defection</td>
<td>Non-Traitors</td>
<td>42.60</td>
<td>16.93</td>
<td>2.60</td>
<td>1,304</td>
</tr>
<tr>
<td>Payoffs</td>
<td>Traitors</td>
<td>41.78</td>
<td>23.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Long-Run</td>
<td>Non-Traitors</td>
<td>35.90</td>
<td>20.76</td>
<td>3.23</td>
<td>1,288</td>
</tr>
<tr>
<td>Payoffs</td>
<td>Traitors</td>
<td>33.88</td>
<td>29.05</td>
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<tr>
<td>Mean Pre-Defection</td>
<td>Non-Traitors</td>
<td>2.46</td>
<td>2.48</td>
<td>3.71</td>
<td>1,304</td>
</tr>
<tr>
<td>Offers</td>
<td>Traitors</td>
<td>2.72</td>
<td>2.32</td>
<td></td>
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<tr>
<td></td>
<td>Non-Traits</td>
<td>Traitors</td>
<td>Non-Traits</td>
<td>Traitors</td>
<td>Non-Traits</td>
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<tr>
<td>--------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Offers on Defection Trial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Traits</td>
<td>2.58\text{\textsubscript{b}}</td>
<td>1.60\text{\textsubscript{c}}</td>
<td>4.22</td>
<td>1,304</td>
<td>.05</td>
</tr>
<tr>
<td>Traitors</td>
<td>3.01\text{\textsubscript{a}}</td>
<td>1.41\text{\textsubscript{c}}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Post-Defection Offers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Traits</td>
<td>2.27\text{\textsubscript{a}}</td>
<td>1.65\text{\textsubscript{c}}</td>
<td>4.46</td>
<td>1,304</td>
<td>.04</td>
</tr>
<tr>
<td>Traitors</td>
<td>1.98\text{\textsubscript{b}}</td>
<td>1.84\text{\textsubscript{bc}}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Long-Run Offers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Traits</td>
<td>2.19\text{\textsubscript{a}}</td>
<td>1.62\text{\textsubscript{c}}</td>
<td>9.52</td>
<td>1,288</td>
<td>.002</td>
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<tr>
<td>Traitors</td>
<td>1.65\text{\textsubscript{c}}</td>
<td>1.93\text{\textsubscript{b}}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Post-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Traits</td>
<td>.716\text{\textsubscript{a}}</td>
<td>.505\text{\textsubscript{c}}</td>
<td>5.77</td>
<td>1,288</td>
<td>.02</td>
</tr>
<tr>
<td>Traitors</td>
<td>.568\text{\textsubscript{bc}}</td>
<td>.656\text{\textsubscript{ab}}</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Means in each cell are unweighted. Means sharing a common subscript within an interaction are not significantly different from one another at the .05 level using the Newman-Keuls procedure.
Footnotes

1. Due to scheduling difficulties, six groups missed one session and completed the games in five weeks. Two groups also participated in two games the same day.

2. Technical difficulties led to errors in the conduct of five sessions. The play in these games could not be analyzed.

3. Multivariate analyses of variance were not used because, even though the dependent variables were intercorrelated, the evaluation of effectiveness from the perspectives of the defector and the non-defectors necessitated the use of separate univariate analyses. Indeed, the possibility that the defector would benefit from defection and the non-defectors would successfully endure was possible.