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The Effect of Leadership Predictions on Actual Leadership Emergence in Small Task Groups

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THE EFFECT OF LEADERSHIP PREDICTIONS ON ACTUAL LEADERSHIP EMERGENCE IN SMALL TASK GROUPS

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Robert E. Anderson, Jr.

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THE EFFECT OF LEADERSHIP PREDICTIONS ON ACTUAL LEADERSHIP EMERGENCE IN SMALL TASK GROUPS

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At the conclusion of a project of this nature, one tends to pause and reflect on the academic path that has been taken. In looking back it is apparent the number of crossroads and obstacles that one encounters. Unfortunately, in the past, my choices at the crossroads were not always the wisest, and many times I made the obstacles look like mountains. Therefore, I wish to acknowledge three individuals who have had a tremendous impact in my life - an impact that I will probably not recognize for years to come. Their constant prodding, encouragement and advice have helped make not only this thesis, but also my graduate program a success. To them - Randy Capps, Regis O'Connor, and Carley Dodd, my deepest appreciations for making me fulfill your expectations.

My true inspirations over the years, however, have come from two individuals that have been practicing the Pygmalion effect on me all of my life, . . . and I didn't even know it. To them, this paper is dedicated with all my love, Mom and Dad.

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Robert E. Anderson, Jr. July 1979 82 pages

Directed by: Randall Capps, J. Regis O'Connor, and Carley H. Dodd

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Research has shown that prior expectations of an individual's performance can have a significant effect on others' behavior and attitudes toward that individual. This phenomenon was tested on the emergent leadership process with zero history groups. Male students in various social fraternities at a regional university were given a leadership test designed to measure their leadership abilities. The leadership tests were never scored, but the subjects were told that they were, and, one of the group members was reported as scoring exceptionally high. The group was then given one of two tasks to perform, and the emergent leadership process was observed. Both perceived leadership and the rate of interaction during the group task were ranked by four observers. At the end of the group exercise, the group members ranked themselves on their leadership behavior during the exercise. The predicted leader was given significantly higher leadership rankings in all three data categories than any other group member. In a comparison of intragroup data, for each of the ten groups, it was shown that the leadership emergence was not thrown to the predicted leader; instead, he behaved in a manner that was perceived as leader-like. Although there was a difference in the predicted leaders' rankings between the two different task groups, both tasks showed significance. The predicted individuals were observed as being one of the top interacters of

their group, however, there was not a significant difference. While the results did not indicate whether the significance in the predicted leader's rankings was due to a true Pygmalion effect, or an implied appointed leader, they do show that the effect of a leadership prediction on the group process is significant.

CHAPTER I

FACTORS AFFECTING AN INDIVIDUAL'S LEADERSHIP PERFORMANCE

Introduction

If one first starts to study the phenomenon of leadership by checking the dictionary, the diversity of the topic is readily apparent, as there are 23 definitions of the word "leader."[1] This diversity also applies to the volumes of research in the field. Ralph Stogdill, a contemporary leader in the field of leadership research, reviewed more than 5,000 abstracts in preparing his book, Handbook of Leadership.[2] Despite all the work done on the subject, there is little agreement on what leadership is and how the process occurs.

This paper does not intend to refute any of the past studies. Instead, it intends to explore one more factor that may play a subtle but important role in the leadership process, that of leader expectations. Specifically, it will explore how inducing an expectation that an individual will be a leader will affect the group's leadership emergence process. Can an individual emerge as the group's leadership choice because of the prediction, and what are the

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[1] Webster's Seventh New Collegiate Dictionary, 1965.

[2] Ralph M. Stogdill, Handbook of Leadership, (New York: Free Press, 1974), p. viii.

effects of this emergence on the group? Prior research in the field discusses in depth two areas of leadership which pertain to this study: 1) the trait approach, which focuses on certain traits that are characteristic of emergent leaders and 2) the situational approach, or studying the factors that are apparent in groups that allow certain individuals to emerge. Leadership styles will not be discussed since this study is concerned with how an individual obtained the leadership position, and not what he does while in the position.

The Trait Approach

One of the earliest theories on leadership has been the trait approach, where researchers tried to find the magic ingredients that are inherent in certain people that make them leaders. If these traits could be identified, the theorist thought, then the leaders could be separated from the non-leaders.[3] Since the early 1900's the trait approach has been studied extensively and includes such characteristics as physical energy, friendliness, intelligence, height, weight, age, and so on. Stogdill, in his review of the literature on the trait approach, compiled close to 100 such traits.[4] Cattell and Stice in a 1954 study developed a rather elaborate set of formulae for selecting leaders. At the time, they claimed that "[these formulae] appear to be the highest predictor of leadership that we

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[3] Paul E. Hersey and Kenneth H. Blanchard, Management of Organizational Behavior, 3rd ed., (Englewood Cliffs, N. J.: Prentice Hall, 1974), p. 89.

[4] Stogdill, Handbook of Leadership.

have encountered in the literature."[5]

In spite of the continued interest in the trait approach, there appeared to be few significant findings. Jennings summed up the state of the research in 1951 by saying "Fifty years of study have failed to produce one personality trait or set of qualities that can be used to discriminate leaders from non-leaders."[6] Yet some people were consistently emerging as leaders while others were not. The question still plagued the researchers however, as they attempted to understand this phenomenon of leadership. The problem possibly stemmed from their perspective of leadership, as they tried to find the answers in the individual's action instead of the group's action.

The Situational Approach

Stogdill put the problem in the right perspective when he discussed leadership traits.

> A person does not become a leader by virtue of the possession of some combination of traits, but the pattern of personal characteristics of the leader must bear some relevant characteristics, activities and goals of the followers. Thus leadership must be conceived in terms of the interaction of variables which are in constant flux and change.[7]

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[5]Raymond B. Cattell and Glen L. Stice, "Four Formulae for Selecting Leaders on the Basis of Personality," Human Relations 7 (1954): 506.

[6]Eugene E. Jennings, "The Anatomy of Leadership," Management of Personnel Quarterly, I, No. 1 (August, 1961), cited by Hersey and Blanchard, Management of Organizational Behavior, p. 89.

[7]Stogdill, Handbook of Leadership, p. 63-64.

Crockett, in 1955 also defined a leader in terms of the group process.

> [A leader is] . . . a group member who directs the group's behavior. He generally sets the group's goals, summarizes contributions of others and seeks out contributions by others.[8]

Hemphill, during the same era, defined leadership as simply "the initiation of structure in interaction."[9]

As the theorists moved to the group process view of leadership, the question of why certain leaders emerged still remained unanswered. Barnlund, in 1962, offered a possible explanation:

> . . . leadership grows out of the special problems of co-ordination facing a given group and the available talents of the participants. This is not to deny that in real life situations some persons repeatedly rise to positions of authority in one organization after another. It is rather, to explain their consistency of status by the similarity of the social contexts in which they find themselves or by their unusually wide range of social competence.[10]

It is interesting to note that Albert Murphy, in 1941, said basically the same thing, although he was about 15 years ahead of other researchers.

> Leadership does not reside in a person, but is a function of the occasion. The situation calls for certain types of action; the leader does not inject leadership, but is the instrumental factor through

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[8]Walter H. Crockett, "Emergent Leadership in Small Decision Making Groups," Journal of Abnormal and Social Psychology 51 (1955): 379.

[9]John K. Hemphill, "A Proposed Theory of Leadership in Small Groups," Columbus: Ohio State University, Personal Research Board, Technical Report, 1954 (unpublished) cited by Stogdill, Handbook of Leadership, p. 221.

[10]Dean C. Barnlund, "Consistency of Emergent Leadership in Groups with Changing Tasks and Members," Speech Monographs 29 (1962): 45.

which the situation is brought to a solution.[11]

Murphy went on to emphasize the leadership process and not the leadership quality as the important factor. It would be ludicrous to study Hitler as a leader without considering the context of the situation and the state of affairs of Germany during the 1930's.[12]

Emergent Leadership

The main concern of emergent leadership research is that which causes some individuals to become leaders. As with Hitler and Germany, one must study the entire group and the dynamics of that organism in order to effectively study a member's leadership role. In a group, the assumed leadership role by a group member is called emergent leadership. As previously noted, leadership can be viewed as the "initiation of structure in interaction."[13] Thibaut and Kelly discussed emergent leadership by stating that every member is in a leadership position if he ". . . exercises his powers efficiently, promotes organization along functional lines or has symbolic value."[14] Fred Fiedler discussed this issue also: "in [cases of emergent leadership] the primary criterion for maintaining the leadership position

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[11] Albert J. Murphy, "Study of the Leadership Process," American Sociological Review 6 (1941): 674.

[12] Ibid.

[13] Hemphill, cited by Stogdill, Handbook of Leadership, p. 221.

[14] John W. Thibaut and Harold H. Kelley, The Social Psychology of Groups, (New York: Wiley, 1959): p. 289.

is the satisfaction of group members."[15] By combining these two views, it could be hypothesized that all group members start off in a position of potential leadership. Those that maintain group members' satisfaction remain as leaders. While folklore suggests that leaders rise from the group to take over, research suggests that everyone starts at the top, and the group undergoes two stages of leadership emergence. Through a process called "residue," members fall from the leadership position until one is left.[16] In the first stage of emergence, which usually lasts only a few minutes in initial groups, approximately half of the members remain in contention for the leadership role. In time the group usually runs into some type of conflict, and the individual who can successfully pull the group through this second stage generally emerges as the leader. It is interesting to note that in groups containing two or more men, women were typically eliminated from the leadership process.[17]

With this model in mind, the answer to the basic question, What causes some individuals to emerge (or remain, as in the case of the above model) as leaders? may rest in the understanding of what motivates group members to maintain the leadership position with which they started. Hemphill, in his discussion as to why people attempt to lead, developed the following four factors:

1. There are rewards associated with group task accomplishments

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[15]Fred E. Fiedler, Leadership and Effective Management, Glenview, Ill.: Scott, Foresman & Co., 1974), p. 19.

[16]John E. Baird, The Dynamics of Organizational Communication, (New York: Harper Row, 1977), p. 247.

[17]Ibid.

2. Certain expectations exist that the group task can be done
3. The leader gains personal acceptance by fellow members for attempting to lead
4. The leader has previously acquired leadership status in the group [18]

Factors Affecting Emergent Leadership

One aspect of the situational approach to leadership studies is concerned with the factors within the group that affect the emergent leadership process. These factors attempt to answer the still nagging question, What causes individuals to emerge as leaders? Hemphill indicated that "group members who exhibited a high rate of activity in initiating structure and in directing activities of others"[19] tended to emerge as leaders. Geier pointed out that the member perceived as having made the most successful attempts to influence the group will emerge, while those who appear uninformed, nonparticipative, rigid, authoritarian and offensive in their verbalization will not emerge.[20] Jaffe and Lucas in their 1969 study concluded that ". . . duration of speech had a greater impact on the leadership choice than did the quality or correctness of the decision."[21] Baird in his 1977 study supported

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[18] John K. Hemphill, "Why People Attempt to Lead," in L. Petrullo and B. M. Bass (eds.), Leadership and Interpersonal Behavior, (New York: Holt, Rinehart & Winston, 1961), p. 211.

[19] Stogdill, Handbook of Leadership, p. 221.

[20] John G. Geier, "A Trait Approach to the Study of Leadership in Small Groups," Journal of Communication 17 (1967): 316-323.

[21] Cabot L. Jaffee and Richard L. Lucas, "Effects of Rates of Talking and Correctness of Decision on Leader Choice in Small Groups," Journal of Social Psychology 79 (1969): 253.

rate of participation as a key variable by citing nine other studies.[22] He went on to show the positive effect of several non-verbal elements on emergent leadership, as did O'Connor in an earlier study. Baird showed that participation (mouth movement) and dynamism (gesticulation) contributed significantly,[23] while the O'Connor study also included ". . . Individual Prominence (comments designed to further individual goals) and . . . Interpersonal Relations (comments designed to promote a friendlier behavior pattern toward other group members),"[24] as significant factors relating to leadership perception.

One study that showed the group effect on a leader's participation was York's 1969 study which concluded ". . . reinforcement of a member's behavior in the group significantly increases his verbal output and leadership status."[25] This was a significant finding as it showed the effect of a group's reaction on the leader, or potential leader's performance.

One factor was extensively researched in connection with the trait approach to leadership. As Stogdill pointed out, "results . . . indicate that having

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[22] John E. Baird, "Some Nonverbal Elements of Leadership Emergence," The Southern Speech Communication Journal 42 (1977): 353.

[23] Ibid.

[24] J. Regis O'Connor, "The Relationship of Kinesic and Nonverbal Communication to Leadership Perception in Small Group Discussion," (Ph. D. dissertation, Indiana University, 1971) p. 76.

[25] Michael W. York, "Reinforcement of Leadership in Small Groups," Dissertation Abstracts International, 1969, 30 (4A), 1643.

skill in the group provides an advantage to the individual in gaining leadership status."[26] This concurs with Carter and Nixon's 1949 study that found "scores on mechanical tests related to leadership status in groups performing mechanical tasks."[27] Stires experimented with perceived ability by convincing certain group members that they differed in an ability that was related to the group task. He found:

> those that had confidence in themselves attempted to gain leadership through modesty, while those who were uncertain, attempted to gain leadership position through self enhancement.[28]

Group size is another factor affecting emergent leadership. Bass and Norton concluded that this factor, increase in size, causes the amount of leadership opportunities to decrease,[29] while a similar study by Hemphill found that this causes group members to place demands on the leader and that they accept a higher degree of structured behavior from him.[30] The optimum size of a task group was shown by James in 1951 to be 6.5,[31] while Slater concluded that group members

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[26] Stogdill, Handbook of Leadership, p. 255.

[27] Launor F. Carter and Mary Nixon, "An Investigation of the Relationship Between Four Criteria of Leadership Abilities for Three Different Tasks," Journal of Psychology 27 (1949): 261.

[28] Lloyd K. Stires, "Leadership Designation and Perceived Ability as Determinants of Tactical Use of Modesty and Self Enhancement," Dissertation Abstracts International, 1970, 30A, 3551.

[29] Bernard M. Bass and Fay-Tyler M. Norton, "Group Size and Leaderless Discussion," Journal of Applied Psychology 35 (1951): 397.

[30] John K. Hemphill, "Relationship Between the Size of the Groups and the Behavior of 'Superior' Leaders," Journal of Social Psychology 32 (1950): 22.

[31] John James, "A Preliminary Study of the Size Determinant in Small Group Interaction," American Sociological Review 16 (1951): 476.

were more satisfied in groups of five.[32]

Appointed leaders in groups have a different effect on the process than do emergent leaders. Carter et al. concluded that "in the discussion task, and to some extent on other tasks, the leaders who emerged in the emergent situation were more authoritarian than were leaders who were appointed."[33] This finding will be applied to a group role model which will be discussed later in this paper. Goodman and Fraas, in their 1965 study, compared four different leadership conditions in task groups: 1) no leader, 2) elected leader, 3) selected leader due to past performances, 4) leader arbitrarily appointed. The group with the selected leader (group #3) performed best, while the elected leader (group #2) performed second best. As could be expected the leaderless group performed worst.[34] Note that this study also showed the difference in group reactions between emergent and appointed leaders.

Bernard Bass, another contemporary leader in the field, discussed the group dynamics process as it affects the leader:

> The more a member exhibits successful leadership, the higher his esteem among his associates, . . . and the higher will be the merit ratings he receives as a successful leader or member.

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[32]Philip E. Slater, "Contrasting Correlates of Group Size," Sociometry 21 (1958): 138.

[33]Lanuor F. Carter et al., "The Behavior of Leaders and Other Group Members," Journal of Abnormal and Social Psychology 46 (1951): 595.

[34]Morton Goldman and Louis A. Fraas, "The Effect of Leader Selection on Group Performance," Sociometry 28 (1965): 82-88.

> The higher his esteem, the more likely he is to be of further success as a leader among his associates.[35]

Bass implies that the leadership process is an upward spiral, and could be applied to George C. Homan's social systems model. In Homan's model, there are three elements that interrelate to each other: 1) Activities are the tasks (leadership) that people perform, 2) Interactions are the behaviors (esteem) that occur between people in performing these tasks, 3) Sentiments are the attitudes (merit ratings) that develop between individuals and within the groups.[36] According to the model, as any one of the elements change, the others too will change accordingly. If the initial charge is a successful leadership attempt, then the process will cause an upward spiral. It would be impossible to analyze the spiral at any one point to question what element caused the upward spiral, just as it is impossible to answer the chicken and egg dilemma.

Goldman and Fraas's study which was cited earlier showed, as did several other studies, that the leader with successful past performances tended to perform better than an elected leader. Perhaps they can all be applied to Homan's model. Borgatta et al. discussed the "Great Man" theory of leadership. While this is a relatively archaic theory, it does have some relationship to the current topic. Borgatta's study pointed out that a "Great Man" must have a fusion of the following qualities: 1) task abilities, 2) individual assertiveness, 3) social

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[35]Bernard M. Bass, "The Leaderless Group Discussion, "Psychological Bulletin 51 (1954): 492.

[36]George C. Homans, The Human Group, (New York: Harcourt, Brace, 1950), p. 33-40.

acceptability. "Great Men" are also hypothesized to be leaders over a series of sessions.[37] Applying this study to Homan's model, it is thought that possibly the "Great Man" theory occurs because of the upward spiral effect. An initial successful leadership attempt causes the so called great man to develop higher self esteem, which carries over to future leadership attempts and continues the spiral upward. The three qualities that are said to be characteristic of the great man may be the factors that give him the initial self confidence to start in the initiation of structure in the interactions of the group. Farris and Lim support this model by stating that "past performances affect most aspects of a leader's behavior, expecially his support interaction facilitiation and goal emphasis."[38] How far does the spiral go up? Fiedler suggested that there is a limit and that extensive leadership experiences correlated to group performances by a factor of -.12.[39] One may conclude that the spiral effect can be a significant factor if the group allows it to be.

Other studies relate a leader's prior performance outside the group to the group process. Chapple and Donald as early as 1946 showed that the leadership

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[37]Edgar F. Borgatta et al., "Some Findings Relevent to the Great Man Theory of Leadership," American Sociological Review 19 (1954): 757-58.

[38]George F. Farris and Francis G. Lim, "Effects of Performance on Leadership, Cohesiveness, Influence, Satisfaction and Subsequent Performance," Journal of Applied Psychology 53 (1969): 496.

[39]Fred E. Fiedler, "Leadership Experience and Leader Performances: Another Hypothesis Shot to Hell," Organizational Behavior and Human Performance 5 (1970): 10.

in groups is highly related to the group members' outside business status.[40] Supporting this, Crockett later concluded that "emergent leaders had relatively high rank and expertness in larger organizations compared with others in the same group."[41]

Summary

This chapter has reviewed three different approaches to the study of leadership. Each of these approaches contains models and findings applicable to this study.

The trait approach, the earliest of the three, attempted to study leadership, by studying the similarity of traits in known leaders. This method hypothesized that if the common leadership traits were identified, then future leaders would be chosen because they also possessed these traits. The trait approach viewed leadership in terms of an individual's behavior or characteristics. Since it did not find any identifiable traits of significance, it would be concluded that there are other factors which affect the leadership process.

The situational approach considers the group process on leadership -- that is, certain individuals lead better in certain groups, because of the situation. The studies conclude that certain individuals lead because they best work in the situation or the group atmosphere that is prevalent at the time. Under different

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[40] Eliot D. Chapple and George Donald, "A Method of Evaluating Supervisory Personnel," Harvard Business Review 24 (1946): 197-214.

[41] Walter H. Crockett, "Emergent Leadership in Small Decision Making Groups," Journal of Abnormal and Social Psychology 51 (1955): 382.

conditions or in different groups other individuals might become the leader. This approach is significant because it relates the effect of the group process to the leadership process.

Even though emergent leadership is a specific kind of situational approach, for the purpose of this study it is handled as a separate approach. The emergent leadership studies reviewed the emergent process, an individual's motivation to attempt leadership, and the effects of group perception on an individual's emergence. The findings were significant, particularly for this study as the emergent process needed to be understood before the effect of leadership prediction (or leadership perception) could be studied.

CHAPTER II

THE EFFECT OF EXPECTATIONS ON THE GROUP PROCESS AND LEADERSHIP EMERGENCE

Role Analysis Within Groups

Some of the previously cited studies have discussed the effects of such factors as member status and prior performance on the group process. In order to more thoroughly analyze these factors, one must view them in terms of roles and role expectation. Role, as defined by Hare, "refers to the set of expectations which group members share concerning the behavior of a person who occupies a given position in the group."[1] Just as individuals adjust their behavior in order to receive feedback from others, so do group members in groups.[2] Stogdill clarified expectations by defining it as "the readiness for reinforcement."[3] Fiedler pointed this out also by stating "such social roles as leadership are in fact defined by the set of expectations, which society holds for these positions."[4]

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[1]A. Paul Hare, Handbook of Small Group Research (New York: Free Press, 1976), p. 131.

[2]John E. Baird, The Dynamics of Organizational Communication (New York: Harper & Row, 1977), p. 190.

[3]Ralph M. Stogdill, Handbook of Leadership (New York: Free Press, 1974), p. 63.

[4]Fred E. Fiedler, Leadership and Effective Management (Glenview, Ill.: Scott, Foresman & Co., 1974), p. 50.

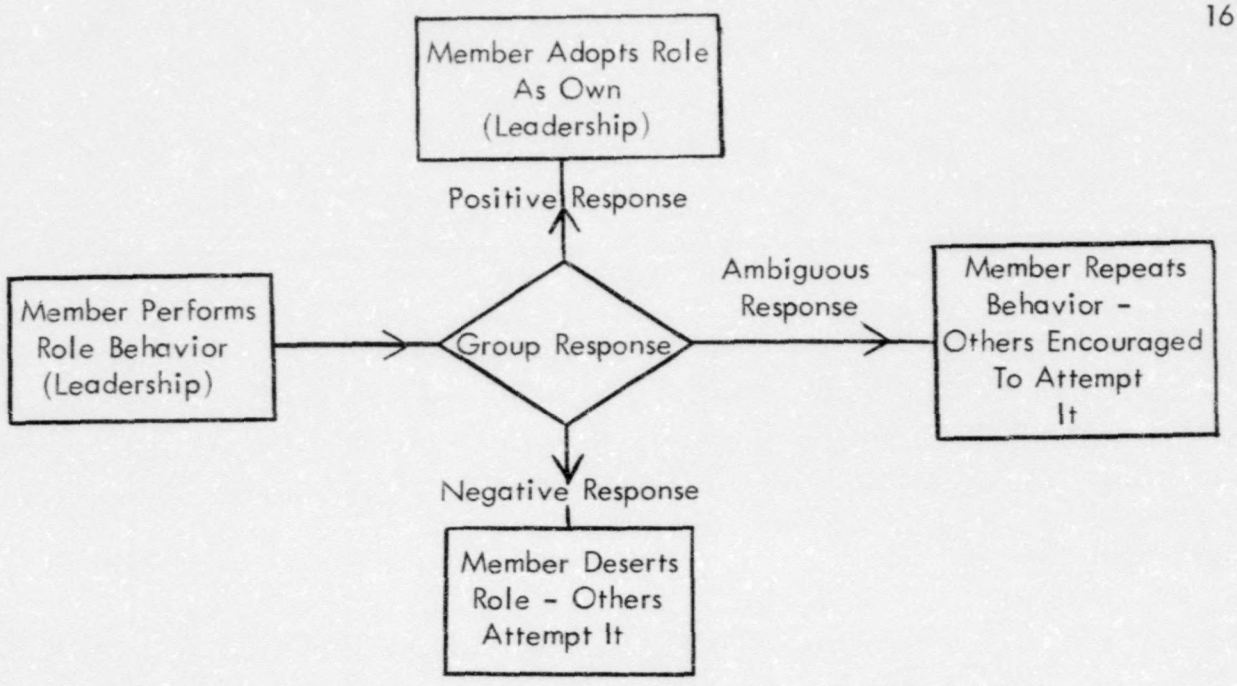

FIGURE 1. "The Emergence of Roles in Group Situations"[5]

Assume that all members in a group start off with equal leadership opportunity.[6] Applying this assumption to the above model, as one person starts to participate in a group activity and attempts to initiate structure (leadership), the group will respond in one of three ways. If the group members feel satisfied with this individual's behavior, they will give him a positive response. This will encourage him to adopt this behavior and the cycle will continue, much like Homan's spiral. Bavela et al., in their 1965 study, concluded that "positive reinforcement of verbal behavior in a task group affects the behavior in a positive way, and carries over to additional discussion without reinforcement."[7]

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[5] Baird, The Dynamics of Organizational Communication, p. 191.

[6] As hypothesized by Baird (1977), Thibaut and Kelley (1959, and Bormann (1969).

[7] Alex Bavela et al., "Experiments on Alternation of Group Structure," Journal of Experimental Social Psychology (January 1965): 55-70.

If the group feels dissatisfied with a member's initial behavior (leadership), they will give a negative response, which may cause him to become discouraged and become more careful in his next attempted behavior. If this negative cycle continues, it would have a downward spiral until the member either adopts another behavior, or is ostracized from the group. The third possible response is an ambiguous one. Possibly the group is unsure what type of behavior is needed or expected from individuals. Consequently, additional members will attempt to lead until the group informally decides to reinforce one particular member role.[8]

Bormann offered three explanations as to why groups reinforce certain member's role performance.

> 1) Accidental - with new groups, the behavior response may be positive without really knowing why, as group members are unfamiliar with each other.
>
> 2) In accordance with group needs - one member may be viewed as having certain competencies and is encouraged by the group to continue in this direction (as shown in several previous studies, those with previous successful leadership performance or higher prior status tended to emerge).
>
> 3) Individual style - emphasizing not the qualities of an individual but how the individual comes across to the group. This occurs when the concern for group goals and relative ability is less than the concern for member satisfaction.[9]

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[8]Baird, The Dynamics of Organizational Communication, p. 190.

[9]Ernest G. Bormann, Discussion and Group Methods; Theory and Practice 2nd ed., (New York: Harper & Row, 1975), p. 202-212 passim.

Gibb proposed a model to further explain this role process by defining three aspects of roles.

> 1) Role Boundary, or that boundary that encompasses the member acts the group will accept from the individual. Members respond to role actions outside of the role boundary by not seeing or hearing the behavior, by ignoring it, by subtly fighting it . . . [and] by various perceptual distortions.
>
> 2) Role Consonance - group actions once started tend to persist and even to build up strength and ongoingness as the collective goal tends to subsume and merge with individual goals.
>
> 3) Role Repertoire - range and adequacy of the role behaviors of an individual or of a small group. There are large individual differences in the number of roles that a person characteristically performs and . . . in adequacy in which they are performed.[10]

Gibb's model may help to explain certain prior studies, such as the "Great Man" theory. One can easily see the correlation between this theory and the third aspect, role repetoire. The second aspect, role consonance, implies that a group builds up a certain expectancy, which may explain Gilchrist's 1952 study which concluded that:

> the first establishment of expectations of success and failure with other individuals via labeling as individuals has a greater effect upon the strength of such expectations than do subsequent single labeling after the formation of work units.[11]

The first aspect, role boundary, can also be related to prior studies, particularly to Borgatta & Bales when they stated, "There appears to be associated with each

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[10] Jack R. Gibb, "Defense Level and Influence Potential in Small Groups," in L. Petrullo and B. M. Bass (eds.), Leadership and Interpersonal Behavior, (New York: Holt, Rinehart and Winston), p. 68-80 passim.

[11] Jack C. Gilchrist, "The Formation of Social Groups Under Conditions of Success and Failure," Journal of Abnormal and Social Psychology 47 (1952): 186.

individual's characteristic interaction rate, an upward boundary which for him appears to operate no matter how much opportunity he has to participate."[12]

First Impression Formation

Role expectations are a constant ongoing process that can occur rather quickly in groups. Stogdill suggested that ". . . status differences and leadership potential are readily perceived after short periods of observations."[13] These role expectations can be both positive and negative, and as Hare pointed out ". . . in first impression forming, generally it is reported that negative traits are given more weight than positive traits."[14] These traits,however, depend primarily on the context of the situation in which they are presented.[15] Hare continued to explain:

> however a person perceives himself, he is likely to try to project an image which will be acceptable to the other members of the group. Thus, his self presentation can vary from one situation to the next, and the perceptions which others have of him in each situation will vary accordingly.[16]

Duration of the group process does have an effect on these perceptions, as ". . . the more intimate the interactions become, the more accurate will be the

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[12]Edgar F. Borgatta, and Robert F. Bales, "Interaction of Individuals in Reconstituted Groups," Sociometry 16 (1953): 319.

[13]Stogdill, Handbook of Leadership, p. 208.

[14]Hare, Handbook of Small Group Research, p. 114.

[15]Ibid.

[16]Ibid., p. 121.

perceptions of each other."[17] If duration does not alter these perceptions, then they become attitudes.[18]

In studying the effects of these perceptions on leadership emergence, Hollander concluded that perceived ability influences emergence as a leader.[19] Prior studies in leadership traits mentioned the effect of self confidence of an individual, which in turn affects the first impressions by other group members. Stogdill cited seventeen studies that showed self confidence as an important factor in leadership,[20] and that "inexperience contributes to lack of confidence, which in turn leads to reliance on others for solving leadership problems."[21] The role expectation process, as mentioned before, is an ongoing and two-way process. We cannot view role expectations only in terms of group members' expectations of a leader. Instead we must analyze the complete content which is illustrated in Figure 2.[22]

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[17] Ibid., p. 130.

[18] Ibid., p. 115.

[19] Edwin P. Hollander, Leaders, Groups and Influence (New York: Oxford University Press, 1964): p. 11.

[20] Stogdill, Handbook of Leadership, p. 75.

[21] David Kepnis and William P. Lane, "Self-Confidence and Leadership," Journal of Applied Psychology 46 (1962): 294.

[22] Hare, Handbook of Small Group Research, p. 133.

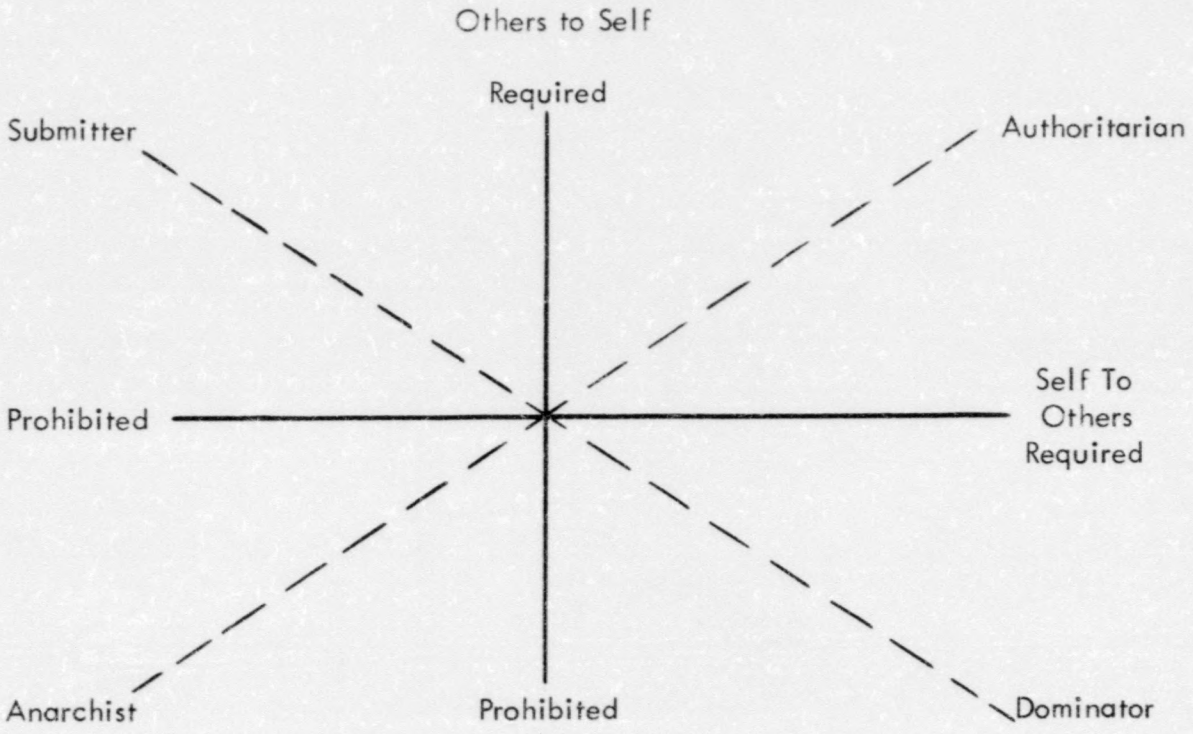

FIGURE 2. "Paradigm for Role Analysis in the Control Area"

The expected behavior of each of the two roles, of leader by group and of group by leader, extends along the axis from a prohibited end to a required end. Applying this model to emergent leadership, one could theorize the following: as a group member attempts leadership behavior, the group places certain expectations on him. To fulfill these expectations, he moves upward along the Y axis (others to self) toward the required end. As the group reinforcement cycle starts, (assuming this individual is accepted as a leader), the leader begins to develop certain expectations of the group. If the group is to perform its task, the members fulfill their role and shift along the X axis (self to others) toward the required end. By following these two shifts into the upper right quadrant, the type of relationship that has developed through emergent leadership,

is authoritarian. As previously mentioned, Carter et al. concluded that "the leaders who emerged in the emergent situations were more 'authoritarian' than were the leaders who were appointed."[23] It was previously stated that the role expectation/role fulfillment by the group to the leader operated in a spiral effect. Hare's model enhanced that spiral by adding another spiral effect of role expectation/role fulfillment by the leader to the group.

The Effect of Expectations on Group and Individual Performance

To this point, we have discussed the effects of role expectation of an individual by a group on that individual's performance. This role expectation however can be broadened to include everything from job performance to personal health.

One of the first scientific studies regarding expectations was that of a horse named Clever Hans who could do simple math problems, spell, read and answer personal questions. The secret of Hans' success was attributed to the questioner himself. It was discovered that almost imperceptible body cues from the questioner tipped off the horse to stop tapping. This was in effect fulfilling the questioner's prophecy or expectation that the horse knew the answer.[24]

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[23]Launor F. Carter et al., "The Behavior of Leaders and Other Group Members," Journal of Abnormal and Social Psychology 46 (1951): 595.

[24]Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart & Winston, Inc., 1968), p. 36.

Other studies have shown similar results with groups. Asch, in 1946, had two separate groups judge the qualities of a person based on a description. The descriptions were identical except the word "warm" in the first group was changed to "cold" in the second group. The first group perceived the person favorably in more traits than did the second group.[25]

A similar study varied the first impression of a new high school teacher by changing his description. Those students who initially heard the positive description actually rated the teacher more positively after meeting him than did the other group.[26] Another first impression study told half of the subjects that they would like the partner that was to be assigned, while the other half was told they would not. The role expectation was fulfilled, as after the group exercise those who were told they would like their partner did and those who were told they would not did not.[27]

Role expectation can also affect job satisfaction as was shown by Aronson and Carlsmith's 1962 study. Half of the subjects was told that they would perform well on a mechanical task, while the other half was told that they would not. One half of each of these groups was led to believe they

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[25] Solomon E. Asch, "Forming Impressions of Personality," Journal of Abnormal and Social Psychology 41 (1946): 258-290.

[26] Harold H. Kelley, "The Warm-Cold Variable in First Impressions of Persons," Journal of Personality 18 (1950): 431-439.

[27] Stanley Schachter et al., "An Experimental Study of Cohesiveness and Productivity," Human Relations 4 (1951): 229-238.

performed well, while the other half was lead to believe the opposite. Those subjects that performed poorly, and expected to do so, actualiy rated higher in task satisfaction than the subjects that performed well, but didn't expect to.[28]

An interesting study on the role expectation of personal feedback was done by Harvey & Clapp in 1965. They found that subjects expecting to hear unpleasant things about themselves, and did, reacted more favorably than those who expected to hear unpleasant feedback but instead heard positive.[29] Korman in a 1971 study on expectations, reported five studies which supported ". . . the general proposition that high expectancies of competence by others is positively related to performance."[30]

The Pygmalion Effect

W. I. Thomas, a leader of American sociology set forth a theorem that has widespread implications. "If men define situations as real, they are real in their consequences."[31] Pygmalion was a sculptor in Greek mythology,

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[28]Elliot Aronson and J. Merrill Carlsmith, "Performance Expectancy as a Determinant of Actual Performance," Journal of Abnormal and Social Psychology 65 (1962): 182.

[29]O. J. Harvey and W. F. Clapp, "Hope, Expectancy, and Reaction to the Unexpected," Journal of Personality and Social Psychology 2 (1965): 45-52.

[30]Abraham K. Korman, "Expectancies as Determinants of Performance," Journal of Applied Psychology 55 (1971): 218.

[31]Robert K. Merton, Social Theory and Social Structure (New York: Free Press, 1968), p. 475.

who carved a statue of a beautiful woman, Galatea, with which he fell in love. Venus granted Pygmalion's request by giving life to Galatea.[32] He had become so infatuated with the statue that he wanted it to become real, so it did -- hence the name Pygmalion for an event that occurs due to a self-fulfilling prophecy.

The classic example of a self-fulfilling prophecy occurred in 1932. The Last National Bank was a flourishing institution, and the President, Cartwright Millingville, was content and proud. One day he noted that business was unusually brisk for a Wednesday as long lines formed at the tellers' windows. Depositors had heard a rumor that the bank was insolvent - despite its strong financial position. The rumor caused concern for some and they withdrew their money. The cycle started - as money was withdrawn more rumors started, more concern for the alleged insolvency and more depositors withdrew money. The result was an insolvent bank that crashed within one day.[33] Men had defined the situation as real (insolvency) and their actions caused it to happen.

The Pygmalion effect had been around long before that dreaded Wednesday in 1932. As early as 1889, the Pygmalion effect was applied to medicine and through the early 1900's most medicines and home remedies were a self-fulfilling prophecy. If a patient thought that a medication would be effective,

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[32] J. Sterling Livingston, "Pygmalion in Management," Harvard Business Review 47 (1969): 92.

[33] Merton, Social Theory and Social Structure, p. 415.

regardless of its actual healing power, then it was. Such drugs were called placebos which Moll observed would cure "hysterical paralysis, insomnia, nausea, impotence and stammering."[34] One interesting area was hypnosis. Prior to hypnosis, subjects were told certain behavior would probably happen while they were in a trance. As predicted, the subjects performed as they had been expected to while hypnotized.[35]

Jastrow was the first person to apply this effect to industry. In 1900, workers at the census bureau were told they probably could not process more than 550 cards per day, and those that surpassed that amount suffered much anxiety and mental health problems. New workers were brought in and were not told what performance was expected. Instead they were encouraged to work as hard as they could. After initial training, the new workers surpassed the original workers by processing three times the original number of cards per day.[36]

In 1965 Bavalas tested the effects of a foreman's expectations on female workers. Half of the subjects supposedly did very well on the employment test, the other half did average. Later evaluations showed that the test scores of the workers had altered the perceptions of the foreman. Those that scored

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[34]Rosenthal, Pygmalion in the Classroom, p. 11.

[35]Ibid.

[36]J. Jastrow, Fact and Fable in Psychology (Boston: Houghton Mifflin, 1900), cited in Rosenthal, Pygmalion in the Classroom, p. 5.

high on the test were rated more favorably.[37]

One of the most comprehensive studies undertaken on the effect of managerial expectations on productivity was done in 1961 by the Metropolitan Life Insurance Company. A District Manager put together some of his top assistant managers and salesmen and labeled them as superstaff. Indeed their performance far surpassed the company's most optimistic expectations. The men were motivated to work beyond normally expected capacities because their superiors and their environment made those high expectations a reality. The surprising result, however, was not what happened to the so-called superstaff, but what happened to the men labeled as below average. Their performance actually declined, and their attrition rate increased. The self-fulfilling prophecy had worked both in a positive and negative direction.[38]

Additional tests and studies have shown that ". . . the way a manager treats his subordinates, not the way he organizes them, is the key to high expectations and high productivity."[39] Research by Atkinson has shown the relationship between motivation and expectations, as in Figure 3.

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[37] Alex Bavalas, Personal Communication. December 6, 1965. cited in Rosenthal, Pygmalion in the Classroom, p. 6.

[38] Livingston, "Pygmalion in Management," p. 93.

[39] Ibid., p. 95.

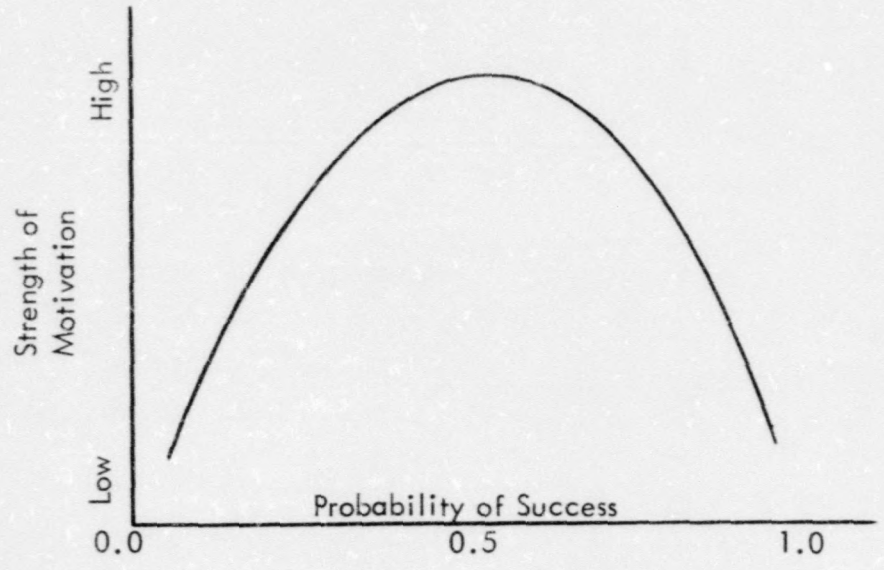

FIGURE 3. "Success Motivation Curve"[40]

The degree of motivation and efforts are at their highest when the probability of a particular task is approximately 50%. No motivation or response occurs when a goal is either virtually certain or impossible to obtain.

Berlew and Hall pointed out that if the above model is not scrutinized, and a subordinate fails to meet his manager's expectation, he will "lower his personal performance goals and standard, his . . . performance will tend to drop off, and he will develop negative attitudes toward the task activity or job."[41] Sterling Livingston, an expert in the field of employee

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[40] John W. Atkinson, "Motivational Determinants of Risk-Taking Behavior," Psychological Review 64 (1957): 365.

[41] David E. Berlew and Douglas T. Hall, "The Socialization of Managers: Effects of Expectations on Performance," Administrative Science Quarterly 11 (1966): 209.

motivation, has pointed out that "the superior manager's record of success and his confidence in his ability give his high expectations credibility. As a consequence, his subordinates accept his expectations as realistic and try hard to achieve them."[42]

Perhaps the classic example of self-fulfilling prophecy in industry was Sweeney's miracle. Sweeney, an industrial management and psychiatry professor at Tulane University, was also responsible for the Biomedical Computer Center. He believed that he could teach a poorly educated person to become a computer operator and proceeded to select a janitor, George Johnson, at the Center to be his subject. Johnson was a poorly educated black and scored very low on an I. Q. test. Sweeney placed his job on the line when the administration insisted that computer operators have a certain I. Q. that Johnson failed to show. Sweeney persisted since he believed that he could train Johnson, and he did. Johnson now runs the main computer room and is responsible for hiring new employees.[43]

This stunning effect of a manager's expectations on employees can become a major concern for new college graduates. Research has concluded that "the .72 correlation between how much a company expects of a man in his first year and how much he contributes during the next five years is too compelling

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[42]Livingston, "Pygmalion in Management," p. 96.

[43]Rosenthal, Pygmalion in the Classroom, p. 4.

to be ignored."[44]

Education is another field in which the self-fulfilling prophecy has astonishing effects. Robert Rosenthal, a sociology professor at Harvard, in his extensive research on Pygmalion effect, tested students working with laboratory rats. One half of the students were convinced that their rats were a special breed with high intelligence and would be easier to train. The other half of the students thought they had ordinary laboratory rats. The rats, however, were all identical and the "highly intelligent" ones were simply chosen at random. After training, "the dumb rats refused to budge from the starting point 29% of the time, while the smart rats were reclacitrant only 11% of the time."[45] Rosenthal hypothesized that since the self-fulfilling prophecy worked with laboratory rats, would it not also work with children in the classroom?

Rosenthal and Lenore Jacobs set out to prove that it would. They tested 18 different classes in an elementary school, three sections of each of the six grades. At random they selected 20% of the children as intellectual bloomers and informed their teacher as such. Eight months later, the children were retested and the "intellectual bloomers" had increased on the average of four I. Q. points over the so-called regular

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[44] "Some Determinants of Early Managerial Success," Alfred P. Sloan School of Management Organization Research Program #81-64 (Cambridge, MIT, 1964): 13-14, cited by Livingston, "Pygmalion in Management," p. 97.

[45] Robert Rosenthal, "The Pygmalion Effect Lives," Psychology Today (1973): 58.

student. "The supposed bloomers blossomed, at least modestly."[46]

In spite of the cynics, Rosenthal persisted in his belief of the Pygmalion effect. He stated in his 1973 report that:

> 242 studies have been done, with all sorts of subjects and situations. Of these, 84 found that prophecies, i. e. the experimenter's or teacher's expectations, made a significant difference. But we must not reject the theory because "only" 84 studies support it. According to the rules of statistical significance, we could expect five percent of the 242 studies (about 12) to have come out as predicted just by chance. The fact that we have 84, seven times more than chance would dictate, means that the Pygmalion effect does exist in certain circumstances.[47]

After carefully reviewing all the studies, Rosenthal proposed a four-factor theory of the influences that cause the Pygmalion effect:

> 1) Climate - or the warmth, attention and emotional support. By creating a more positive socio-emotional climate, the subjects were more apt to do what was expected.
>
> 2) Feedback - or how much active, positive interaction occurs between the student and teacher. The amount of encouragement and the lack of criticism is the key ingredient of feedback.
>
> 3) Input - or the amount of expectations given to the subject. By expressing the confidence through more challenges, the input into the subject cause the subject to believe they can do better.
>
> 4) Output - by encouraging more interaction from the subjects, they in turn gained more confidence and attempted harder material. Teachers who ask questions to so-called poor students waited, on the average, one second before going on to the next students. They didn't expect a response, so in essence then, made sure they didn't get one.[48]

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[46] Ibid.

[47] Ibid., p. 59.

[48] Ibid., p. 60-62 passim.

Why do people fall into the self-fulfilling prophecy trap? Rosenthal offered the explanation that people inherently hate to be wrong. If they feel that they can't succeed at something, they will do anything they can (usually in a subconscious state) to make sure they don't. Teachers who suspect that one student is smarter than another will subconsciously support that smarter student, perhaps because they don't want to be deceived. They were told so, they believe so, and therefore would make sure that it was so.[49]

Just because an event occurs doesn't mean the self-fulfilling prophecy took place. Rosenthal contended that:

> to show that a prophecy is accurate does not necessarily show that the prophecy lead to its own accuracy . . . When a prophecy is based on prior observations of the event prophesied, the prophecy, is, in a sense, "contaminated with reality." The prophecy may or may not play a role in its own fulfillment . . . If school children who perform poorly are those expected by their teachers to perform poorly, it might be that the teacher's prophecy is accurate because it is based on knowledge of past performances or it might be accurate because it is self-fulfilling.[50]

In order to determine whether or not the self-fulfilling prophecy caused an event to happen because it was indeed self-fulfilling, experiments must be careful to vary only the prophecy itself.

In order to clarify the amount of influence the self-fulfilling prophecy has on an event, the following categories have been established regarding the

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[49]Rosenthal, Pygmalion in the Classroom, p. 25.

[50]Ibid., p. 25-26.

relationships between the prophecy and the event. Examples follow for each of seven cases.

Type I No Relationship Between Prophecy and Event

A. No relationship claimed

Example 1. A roulette player realizes that winning is based strictly on statistics.

B. A relationship is claimed

Example 2. A roulette player feels lucky and consistently wins, and therefore feels he can prophesize at roulette.

Type II Some Relationship Between Prophecy and Event

A. The relationship is negative

1. Not due to the prophecy

Example 3. A worried physician predicts a patient will die (without telling him) but because of the physician's competency and experience, the patient becomes healthy.

2. Due to the prophecy

B. The relationship is positive

1. Not due to the prophecy

Example 4. A worried physician predicts a patient will die (without telling him) and becomes more conscientiously concerned with the patient, and the patient responds by becoming healthy.

a. Coincidental

Example 5. An optimistic teacher predicts high achievement for a poor student and the student responds. However, the response was due to other outside factors -- elimination of a physical handicap, improved health, improved family situations, etc.

b. Prophecy due to related past events

Example 6. Teacher feels that students will do well on a test, and they do, but the prophecy was really only a prediction based on past performances.

2. Due to the prophecy

Example 7. The prophecy is instrumental in the fulfillment of subsequent events.[51] This is the type of relationship with which this thesis will concern itself.

Summary

This chapter has reviewed two major areas of the group process: role analysis and the effects of expectations in the emergence of leadership.

Role analysis studies have developed several models that explain the development of an individual's role within a group. The effects of the group's feedback were seen as essential to the individual's acceptance of these roles. A specific aspect of role development is first impression formation, or the initial perception of an indidual's status. It was shown that

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[51] Ibid.

these first impressions play an important part in emergent leadership.

Expectations by group members also have an impact on the group process of leadership. When individuals expect something to occur, their belief in the outcome will actually affect the outcome itself. Specifically, the Pygmalion effect or the self-fulfilling prophecy can be seen in many facets of life, from medicine to education. These prophecies can also be seen in the group process as group members' expectations of an individual's behavior can actually affect his behavior.

Rationale and Hypothesis

Much research has been done on factors that affect the leadership process. These factors include personality traits and physical characteristics of leaders, the needs of the group, the interaction of group members, the reinforcement by group members on an individual's behavior, and the effect of expectations or prophecy on group performance. In essence, these studies have shown that an individual's behavior may be perceived as leadership behavior. For example, in one model, all group members start off as potential leaders, and only a few will have acceptable behavior that will allow them to remain a leader. This theory suggests that the individual initiates leadership behavior and that group members reinforce that individual who behaves in a way which the group members will accept.

This thesis, however, will explore why an individual's behavior produces leadership behavior. This approach is similar to the research on role expectations within groups. However, instead of suggesting that an

individual initiates leadership behavior, this study suggests that the group process causes a member to initiate leadership behavior. For example, if the group members expect certain behavior from an individual, the group atmosphere will set the stage, so to speak, for that individual to behave in the expected manner. If this is possible, what are the causes of these group expectations, and can the group be manipulated to hold certain expectations? Research on first impression formation, role expectations, group expectations, and Pygmalion or self-fulfilling prophecy, suggests that leadership relates to the principle of prior expectations. As a whole, these research findings suggest the following sequentially ordered set of key concerns:

1) First impression formation of an individual establishes a certain expectation by the group of that individual's behavior

2) An individual will either adopt the expected behavior or change his behavior within the group, depending on the type of reinforcement from group members

3) Group members' expectations have a significant effect on the group process

However, no research has been done on the effects of group expectations on emergent leadership. A logical extension of this summary is a test of the following hypothesis:

H_1: The predicted leader of a zero history task group will emerge as the group's leadership choice.

Prior research shows that impressions and expectations of an individual

in a group can alter the entire group's process. Since emergent leadership has been shown to be a product of the group process, it is projected that group members expecting a certain individual to establish leadership behavior will alter the group process so that the individual can indeed emerge as the leader. For the purpose of this study, leadership will be defined as "as a process in which one group member exerts positive influence over other group members."[52]

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[52] Marvin E. Shaw, Group Dynamics: The Psychology of Small Group Behavior, (New York: McGraw-Hill, 1971), p. 477.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to delineate the procedures for the study and the method of data analysis. The first section discusses the subjects and procedures to be used, while the second section explains the measurements of the results and data analysis.

Subjects and Procedures

Undergraduate students who were members of various fraternities at Western Kentucky University were given a leadership questionnaire said to be able to measure an individual's task orientation (how well one works on a task) and people orientation (how well one works with others) in a problem solving group.[1] The questionnaires were not scaled, reviewed or examined in any way, except to record the names of the students who participated. Consequently, the validity and reliability of the questionnaire were of no concern, as long as the participants believed it was a valid measure.

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[1] J. William Pfeiffer and John E. Jones, A Handbook of Structured Experiences for Human Relations Training, 5 vols. (San Diego: University Associates, 1975) 1: 7.

Approximately one week later, ten groups of five students were randomly selected from the pretested students to participate in the experiment. The only qualification necessary was that the students were not acquainted with other group members prior to the group task (zero history group). While the experimenter recognizes the college environment may have made it impossible to select groups with an absolute zero history, every effort was made in selecting subjects who had never met.

Prior to the group formation, one of the five group members was randomly selected as the predicted leader, obstensibly because of his scores on the leadership questionnaire. At this point, the group members were assembled around a conference table and instructed to carefully follow these directions placed in front of them:

> The large envelope in front of you contains four smaller envelopes that are sequentially numbered from 1 (one) to 4 (four). Please follow the directions inside each envelope carefully, and do not open up the next envelope until the prior one is finished.
>
> Envelope #1 Enclosed are five name tags and a marker. Please take a few minutes to introduce yourself to each other, and write your first name only on the name tag. The sequential numbers on the name tags are for identification purposes. When you are finished, please go on to envelope #2.
>
> Envelope #2 The T-P Leadership Questionnaire that you recently completed has been widely used by leadership experts for many years. Moreover, in my studies with groups, it has been one of the most accurate of all short objective leadership questionnaires. It is an excellent measure of how people react toward TASK orientation (how well one works on a task) and PEOPLE orientation (how

well one works with others). [2]

The experiment in which you are about to participate in is designed to discover if the questionnaire scores can accurately determine optimum group composition, that is, can the scores on the T-P Leadership Questionnaire select out of approximately 200 students, five that best work together ON A TASK RELATED PROBLEM.

The following individuals scored exceptionnaly high in the T-P Leadership Questionnaire for TASK RELATED PROBLEMS:

Five randomly selected names were listed, one of which was one of the five group members. The process was repeated for each group. At the bottom of the sheet, the group was then instructed to identify anyone in their group that was on the list. Upon completion of envelope #2, the group was instructed to go on to envelope #3.

Prior research showed that the type of group task can affect the emergence of leadership as does a group member's task competency.[3] In order to check the effect of pygmalion on leadership under various group conditions, two different group tasks were used. Half of the groups tested was given one task, and the other half was given the second task.

The first task (envelope #3A) was a group information sharing problem that required some basic mathematical computations with rate, distance and time measurements. The other task (envelope #3B) was a group building exercise, which required more group organization and cooperation. It was felt that the results of these two different tasks may indicate some possible parameters in which

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[2] Elliot Aronson and J. Merrill Carlsmith, "Performance Expectancy as a Determinant of Actual Performance," Journal of Abnormal and Social Psychology 65 (1962): 182.

[3] Ralph M. Stogdill, Handbook of Leadership, (New York: Free Press, 1974), p. 224.

the Pygmalion may affect emergent leadership.

Envelope #3A Contains 27 information cards with the following instructions.

1. Enclosed are 27 information cards that have bits of information regarding the following problem.

2. The Problem: Pretend that Lutts and Mipps represent a new measure of distance, and that Dars, Wors and Mirs represent a new way of measuring time. A man drives from town A through town B and C to town D. THE TASK OF YOUR GROUP IS TO DETERMINE HOW MANY WORS THE ENTIRE TRIP TOOK.[4] Your group is being timed, so work as quickly as you can. (See Appendix 1)

3. Deal out all of the information cards, one at a time.

4. Do not let anyone else see your cards.

5. You may share your information orally.

6. One worksheet is provided for your use. Do not write on anything other than the worksheet.

7. When the group is finished, go on to envelope #4.

Envelope #3B Contained the following instructions:

Your group has a set of Tinkertoys with which you are to build the TALLEST POSSIBLE FREE STANDING STRUCTURE in the shortest amount of time. Your group must abide by the following rules:

1. The group is to distribute the pieces so that each group member receives all of one kind of piece. Since there are more than five different types of pieces, some group members will have more than one type of piece.

2. Once members have their pieces, only they can attach the piece to the structure.

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[4]Pfeiffer and Jones, Handbook of Structured Experiences, Vol. 2, p. 24.

3. Once placed on the structure, no piece may be removed.

4. All pieces must be attached to the structure.

5. The structure is to have at least three sides to it.

6. Your group is being timed, so work as quickly as you can.

7. One worksheet is provided for you to plan your structure on if you desire.

8. Go on to envelope #4 when you are finished.

Envelope #4 Contained five identical forms (See Appendix 2) which instructed the group members to:

List all of the names of the participants, including your own. Next to the list, privately rank the leadership position of each of the group members, according to whose participation was most beneficial, in other words, rank them according to their leadership performance in this exercise. Be sure to rank yourself. The person who you felt was most beneficial to the group, place a 1 (one) after his name. The person that you felt was the least beneficial to the group, place a 5 (five) after his name, and so forth. When you are finished, place your sheet back in the envelope. This concludes the experiment.

Measurements

Leadership studies show conclusively that the group process is a major determinant of emergent leadership. Since the effect of Pygmalion on leadership is untested, it is desirable to determine what part of the group process it affects. These are just three of the possibilities:

1. The predicted leader's self concept alone causes the individual to have greater confidence and poise.

2. Group's impression of the predicted leader's ability causes the group to rationalize that since the test indicated the individual to be a leader, then he must be a leader.

3. The entire group process, both #1 and #2 above, allowing the individual predicted to emerge as the true leader.

In order to observe the actual group process, four observers were incorporated, none of whom were aware of the predicted individual. Studies[5] have shown that rate of participation is an important factor in emergent leadership. It was felt that students with proper instructions could sufficiently record the rate of interaction, or participation of each one of the group members. This data could then be compared with observed leader rankings and group leader rankings. The literature suggests then that the individual with a high rate of participation would probably emerge as leader.

The four observers were seated on the opposite side of a one way mirror from the group members. Two observers were given the "Leadership Ranking Scale" (See Appendix 3), and the other two observers were given a "Group Interaction Grid" (See Appendix 4). The four observers were then given a brief orientation session to the proper use of the scales. Each observer completed his given form for a five minute interval. After the initial five minute interval, observers who recorded the rate of participation were given the leadership ranking exercise for the second five minute interval, and vice versa for the other two observers. The alternating of the observation process was continued for two more five minute intervals, for a total of four intervals, or twenty minutes of observation time. This technique was employed to prevent observer bias and fatigue.

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[5] John E. Baird, "Some Nonverbal Elements of Leadership Emergence," Southern Speech Communication Journal 42 (1977): 352.

Data Analysis

The results from this experiment consisted of the following three sets of data:

1. Observed leadership ranks of group members by two observers for four consecutive five minute intervals.
2. Observed interaction frequency of group members by two observers for four separate five minute intervals. These interaction totals are then ranked for each interval, from highest rate (1) to lowest rate (5).
3. Group members' leadership rankings as perceived by group members at the completion of their group task.

The above data is compared in Chapter 4 in two different manners. Initially, the data from all 50 subjects were analyzed with a one way analysis of variance. This analysis compared the number of top (1) leadership rankings of the ten predicted leaders with the forty other group members. With four time intervals, the observers' rankings of both leadership and interaction rate totaled eight, while the five group member rankings made it possible for any one member to have a maximum of thirteen top leadership rankings. Also, an analysis was run comparing the five groups that performed the Tinkertoy structure building with the five groups that performed the information sharing exercise.

Since each experimental group's data are ordinal measures, the

coefficient of concordance[6] was used to compare the three rankings' agreeability. Also, the Kolmogorov-Smirnov[7] Test was used to compare all of the observed and group member rankings with chance. With chance alone, it would be expected that each individual group member would receive an equal number of first place, second place, etc., rankings. The above test will show whether the number of rankings of the predicted leader is significantly more than what would be expected through chance.

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[6] Allen L. Edwards, Statistical Methods for the Behavioral Sciences, (New York: Holt, Rinehart and Winston, 1966), p. 402-411.

[7] Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences, (New York: McGraw-Hill, 1956), p. 47.

CHAPTER IV

RESULTS

The first section of this chapter reports the combined findings of all ten experimental groups. Next, a comparison of the rates of interaction of the various groups to the predicted leader is examined. Finally, the various rankings within each of the ten groups are isolated and examined. A comprehensive discussion of the results is primarily reserved for Chapter 5, which includes conclusions drawn from the results and some research implications.

Leadership Rankings of Predicted Leaders

The effect of leadership prediction on leadership rankings was examined by combining the totals of all three sets of data for all groups. Only number one rankings were counted,[1] and as mentioned in Chapter 3, the maximum number of first place rankings any one group member could receive was thirteen. These combined rankings were then tested with a one way analysis of variance to compare the ten predicted leaders with the forty other group members. Table 1 presents a summary of the results.

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[1] The observed frequency of interaction by the two observers were averaged and then ranked ordered. The group member that spoke the most during an interval would therefore receive a number one rank for that interval. The observed leadership rankings for each interval were likewise averaged, and these scores then ranked.

TABLE 1

NUMBER OF TOP LEADERSHIP RANKINGS

ONE WAY ANALYSIS OF VARIANCE

	Predicted Leader	All Other Group Members
All Groups	$\bar{X}$= 7.1947	$\bar{X}$= 1.4513
Information Sharing	$\bar{X}$= 8.7894	$\bar{X}$= 1.0526
Tinkertoy Structure Building	$\bar{X}$= 5.6000	$\bar{X}$= 1.8500

Source of Variance	SS	d.f.	MS	F	p
Information Sharing	239.4286	1	239.4284	42.657	0.0000
Tinkertoy Structure Building	56.2498	1	56.2498	4.764	0.0395
Within Error (All Groups)	696.3633	48	9.0099		
All Groups*	263.8898	1	263.8898	29.289	0.0000

*This computation represents an analysis of all 10 predicted leaders to the 40 other group members. It is not to be combined with the other three sources of variance.

The one way analysis of variance showed that the predicted leader received significantly more first place votes than all other group members. With all ten groups combined, the F value of the predicted leader's number of first place ranks to non-leaders was 29.289, which was highly significant ($p < .0000$). On the average, the predicted leaders received 7.1947 first place ranks out of a possible 13. The other group members received, on the average, 1.4513 first place ranks.

Since two different group tasks were used, the groups performing the information sharing problem were compared to the groups performing the Tinkertoy structure building. This comparison is also shown in Table 1. The information sharing exercise showed a much higher F value (42.657) than did the Tinkertoy structure building exercise (4.764). While there is a difference in these F Values, both are highly significant, the first one beyond the .0000 level and the second one better than the .05 level.

Interaction Frequency of Predicted Leaders

It has been shown that the rate of interaction (duration) in a small group discussion has a great impact on emergent leadership.[2] The predicted leader's total observed frequencies during the four intervals by the two observers are listed in Table 2, as percent of total interaction, and are compared with other group members within their groups. The rank value indicates the rank of

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[2] John E. Baird, "Some Nonverbal Elements of Leadership Emergence," Southern Speech Communication Journal 42 (1977): 352.

TABLE 2

INTERACTION FREQUENCY OF PREDICTED LEADERS

PERCENT OF TOTAL INTERACTIONS

Group Member	Group Number 1	2	3	4	5	6	7	8	9	10	$\bar{X}$
1	35.8	39.2	33.5	27.4	19.7	31.8	27.4	40.9	28.2	18.0	28.2
2	10.8	20.6	25.7	28.5	23.7	31.8	23.7	13.2	12.6	27.5	
3	9.9	6.2	18.2	20.2	17.6	17.2	13.4	10.5	16.5	16.8	
4	24.5	17.5	14.5	16.2	18.1	12.7	15.6	9.5	34.0	24.0	
5	18.9	16.5	7.8	7.6	21.3	6.2	19.9	25.7	8.7	13.8	
Predicted Leader's Rank	1	1	1	2	3	1	1	1	2	3	
Chi Square*	5.62	7.46	2.23	25.54	11.75	6.46	17.87	7.51	15.49	8.21	
p	N.S.	N.S.	N.S.	0.013	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	

*Chi Square analyzed from raw data. Percentages were used for ease of comparison

the predicted leader's interaction to the other group members.

The results indicate that six out of the ten predicted leaders had the highest rate of interaction within their groups. Out of the other four groups, two of the predicted leaders were second highest, and the other two were third. Specifically, the average percent of interaction for all ten predicted leaders was 28%. The theoretical distribution of interaction for a five man leaderless group would be 20% for each member. The 28% figure shows that the predicted leader, while being one of the top interactants, did not dominate the group process.

A Chi square analysis was done on each group, with the results posted in the last row. No significant difference was found in any of the groups except for group 4, which resulted from one subject's extremely low frequency rate rather than the predicted leader's high rate of interaction. The predicted leader is designated as group member #1 for identification purposes only, regardless of his leadership rank.

Comparison of Intragroup Rankings

The three sets of data, observed leadership rankings, observed interaction frequency (ranked), and group leadership rankings[3] of all group members

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[3]A mean score was taken for each of the three data categories and these scores then ranked. This resulted in three separate rankings of the five group members, one ranking for observed leadership, one ranking for observed interaction rate, and one ranking for group member's self ranking.

were then compared for each group to determine the agreement among them. The coefficient of concordance was used for three judges and five rankings, for each of the ten groups, with p set at the .01 level. The results show that 80% of the groups had a significant level (.01) of agreement among the three sets of leadership rankings. This is to say that the three separate measures of leadership, regardless of their actual value, coincided with each other at a highly significant level. Therefore, no one measure was any more accurate than the others in measuring leadership. (See Table 3).

Comparison of Predicted Leader's Rankings

The predicted leader's rankings were then compared to chance rankings, using the Kolmogorov-Smirnov test, with two separate categories. First, the rankings of the observed scores for each interval (both observed leadership and observed interaction rates) were tested.[4] Secondly, the five group members' self leadership rankings were tested. Two of the groups required only 15 minutes to complete the task which resulted in having only three intervals observed. Therefore for these groups, a total of six observed rankings of the predicted leader were used. Two other groups had one member fill out the group leadership ranking scale inaccurately which gave these two groups only four group member rankings of the predicted leader.

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[4] During each interval, the two observers for each category either ranked leadership, or counted frequency of interaction. The two observed leadership ranks, and the two observed interaction rates for each interval were averaged and then ranked.

TABLE 3

COEFFICIENT OF CONCORDANCE

Group Number	W	Significance p<
1	.956	.01
2	.651	N.S.
3	1.000	.01
4	.910	.01
5	.867	.01
6	.956	.01
7	.911	.01
8	.956	.01
9	.844	.01
10	.644	N.S.

The predicted leader's rankings are tabulated in Table 4, with the above exceptions indicated. The results of the Kolmogorov-Smirnov test are listed in Table 5. A highly significant result would only indicate the consistency of the predicted leader's score, regardless of the rank. That is, a predicted leader with all fifth place ranks would be more significant than a predicted leader with both first and second rankings. Therefore, it is important to compare the results in Table 5 to the ranks in Table 4. It is noted in Table 5, six out of the ten observed rankings were significant at the .01 level, while two more were significant at the .05 level. However, only three out of the ten group rankings were significant at the .01 level, with four more significant at the .05 level. In comparing the ranks from Table 4 with the consistency scores in Table 5, it is interesting to note that of the three groups that were not significant in either sets of rankings in Table 5, (group #4, #5, and #10), their average leadership rank from Table 4 were 1.8, 2.6, and 3.8 respectively. The remaining seven groups that did show a significance of at least .05, had a mean average rank of 1.4.

Summary

The purpose of this chapter was to present the results of the study. Several significant results were obtained. The next chapter will discuss these results in depth and possible implications of the results.

TABLE 4

PREDICTED LEADER'S RANKS

		Observed Leadership				Observed Interaction Rate				Other Group Member's					
Group #		Interval # 1	2	3	4	Interval # 1	2	3	4	Group Member # 1	2	3	4	5	Avg. Rank
I	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1.1
T	2	1	1	1	*	1	1	1	*	1	1	1	1	1	1.0
I	3	1	1	2	1	1	1	1	2	1	1	1	2	1	1.2
I	4	1	1	2	2	1	1	2	2	1	3	**	3	2	1.8
I	5	4	2	1	*	4	2	2	*	1	2	3	5	3	2.6
T	6	1	2	2	2	1	1	2	2	2	2	1	2	1	1.6
T	7	1	1	2	2	1	2	2	3	1	1	2	1	1	1.5
I	8	1	2	1	1	1	1	1	1	1	1	1	1	1	1.1
T	9	1	3	2	2	1	2	2	4	2	2	2	1	2	2.0
T	10	5	3	4	*	4	3	3	*	5	**	5	2	4	3.8

* Group completed exercise in 15 minutes, or 3 intervals.

** Group member inaccurately filled out group member leadership ranking form.

I = Information Sharing Exercise

T = Tinkertoy Structure Building

TABLE 5

KOLMOGOROV-SMIRNOV TEST OF
PREDICTED LEADER'S RANKINGS

Group #	Observed Rankings of Predicted Leader Significant at:	Group Rankings of Predicted Leader Significant at:
1	.01	.01
2	.01	.01
3	.01	.05
4	.01	N.S.
5	N.S.	N.S.
6	.01	.05
7	.05	.05
8	.01	.01
9	.05	.05
10	N.S.	N.S.

CHAPTER V

DISCUSSIONS, CONCLUSIONS, AND IMPLICATIONS

Results in the previous chapter initially indicated a significant confirmation of this study's hypothesis; predictions have an effect on emergent leadership. This chapter will discuss certain conclusions that may be drawn from the results. In addition, this study has raised some concerns and questions about the emergent leadership process. Therefore, this chapter will also point out some of these specific areas that future research should examine.

Discussion

The highly significant results of this study point to three possible theories that may explain why the Pygmalion effect worked.

Theory #1: The individual that actually emerged as the leader of his group was, by chance, initially selected as the predicted leader.

Theory #2: The prediction of an individual to be a leader caused the group to automatically accept him as the leader.

Theory #3: The Pygmalion effect really did work.

With 50 subjects tested, the chances of Theory #1 occurring are 1 in 10,000. Theory #2 is similar to the group's labeling the predicted leader as a type of appointed leader, and then ranking his leadership abilities according to his

predetermined label. Theory #3, on the other hand, is the true Pygmalion effect. This theory explains that certain influences on the group and on the individual's behavior causes the individual to act and then be ranked as a leader. With these three theories in mind, the specific results of the study will now be discussed.

Leadership Rankings of Predicted Leaders

The results of the one way analysis are the most conclusive and supportive of the research hypothesis. With such a high F value for all 50 subjects, it would indicate that Theory #1 could be rejected because of the extremely small p value. While the information sharing exercise was significantly higher than the Tinkertoy structure building, the fact that different group activities showed similar results also support the rejection of Theory #1. The difference in the results between the two exercises may indicate that the Tinkertoy task did not allow as much opportunity for any individual to clearly emerge as the leader in the group process. Therefore, it may be concluded that different group tasks may cause a difference in how clearly an individual emerged within a group. Because of the high significance of the results, both Theory #2 and #3 are supported.

Interaction Frequency of Predicted Leaders

With six out of ten predicted leaders having the top rate of interaction for their group and the other four predicted leaders second or third, it may be concluded that the prediction of an individual to be a leader would affect his behavior and cause him to be one of the top interactants of the group. More generally, the prediction may cause his behavior to at least fit the expectations of a leadership

role. Regardless of the other group members' reactions, the predicted leader did show a strong tendency to try and behave as a leader.

The Chi Square test, as mentioned in the previous chapter, did not show any significance in the predicted leader's interaction rate. Specifically, the average percent of interaction for all ten predicted leaders was 28%. Since the theoretical distribution of interaction for a five man leaderless group is 20% for each group member, the 28% figure indicates that the predicted leader, while being one of the top interactants, did not dominate the group process. This relates to Carter's study, which showed that the emergent leader tends to behave in a more authoritarian way and that the appointed leader tends to be more democratic.[1] While leadership styles are not related to interaction frequency, the lack of dominance by the predicted leaders in their groups may suggest that they behaved in a more democratic style, as though they were appointed. Since leadership styles were not measured, this point may well be disputed, but it does suggest a possible "appointment syndrome."

It may be concluded from the above results that rate was important, at least in maintenance of the leadership role, but it was not the only factor in the predicted leaders' high leadership rankings. While prior studies have shown that the rate of interaction and not content of the speech is effective in determining

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[1] Launor F. Carter et al., "The Behavior of Leaders and Other Group Members," Journal of Abnormal and Social Psychology 46 (1951): 595.

leadership emergence,[2] content analysis may be a valuable tool in determining whether or not the predicted leader was establishing or maintaining his leadership role. If his interaction content indicated that he was maintaining his role, this may suggest that the Pygmalion effect had already established him as the leader of the group and that he was fulfilling the prediction.

These results support Theory #3, that the prediction influenced the individual's behavior. Had the groups simply labeled the individual as a type of appointed leader, this alone would not have necessarily caused six out of ten predicted leaders to be top interactants. Therefore, these results refute Theory #2. While the Chi Square test showed no significance, the results still tend to refute Theory #1, that the top interactants were by chance the predicted leaders.

Comparison of Intragroup Rankings

Since these results indicate agreeability of the three sets of rankings, close scrutiny would indicate whether the leadership prediction would affect only a certain aspect of the group process; observed leadership, observed interaction rate, or preceived leadership by the group. By using the correlation of coefficient, it was found that the three rankings in eight out of ten groups were agreeable at the .01 level. With such a high level of correlation,

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[2]Cabot L. Jaffe and Richard L. Lucas, "Effects of Rates of Talking and Correctness of Decision on Leader Choice in Small Groups," Journal of Social Psychology 79 (1969): 253.

it would indicate that the rankings, regardless of the predicted leader's score, were valid. Specifically, the group member who had a relatively high rate of interaction was also observed as a leader and was also perceived by his group as a leader. This high correlation would refute Theory #2, that the group members "threw" the group exercise to the predicted leader. However, the high correlation would not indicate whether or not the group members perceived the predicted leader as being appointed by the experimenter. If this so called appointment were the case, then it occurred consistently throughout all ten groups, and in all facets of the group process. With these highly significant results, Theory #1 may be refuted, and all indications would show that Theory #3 would be supported.

It is noted that two of the groups did not have a significant correlation (group #2 and #10). Further investigation shows that in group #2, the predicted leader consistently received top leadership rankings, and low correlation is attributed to the discrepancy in the other member's ranks. Group #10, on the other hand, apparently did not interact enough to establish group roles so that no one in the group clearly emerged as the leader.

Comparison of the Predicted Leader's Rankings

By using the Kolmogorov-Smirnov test, the observed scores of the predicted leader (both leadership and interaction rate) and the group's self leadership rankings were compared to chance. A highly significant result would

only indicate the consistency of the predicted leader's score, regardless of the rank. The results indicate six out of the ten observed rankings were significant at the .01 level, and only three out of the ten group rankings were significant at the .01 level. It would be difficult to draw any strong conclusions from these, since the sample size for the Kolmogorov-Smirnov test was so small and only one ranking difference would cause a shift in the significance level. Yet the tendency of the group rankings to be lower than the observed rankings may indicate some type of perceptual difference in true leadership behavior. It is important to keep in mind, however, that the observers did not know which one of the group members was predicted to be the leader. This would indicate that the group viewed the predicted leader in a different light. Ideally true leadership should only be measured by the group themselves and not the observers, as the group members are the ones being lead.

It is interesting to note that eight out of ten predicted leaders were ranked as the number one leader in the first time interval for both observed leadership and observed interaction (See Table 4). This fact would strongly indicate an initial acceptance by the predicted leader of the leadership role, as theorized by Baird in his emergence role model[3]. As discussed in Chapter Two, this model assumes that all members in a group start off in equal leadership opportunities. The announcement of the predicted individual to the group caused the

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[3] John E. Baird, The Dynamics of Organizational Communication, (New York: Harper and Row, 1977), p. 191.

predicted individual to grasp onto the initial leadership role. Regardless of what happens afterwards in the group process, the prediction has caused the individual to initially have a better than equal opportunity to become the group leader. This in itself is a powerful aspect of the group process. To continue with Baird's model, as shown on page 16 of this thesis, the group may later respond in a negative manner which will cause the leader to abandon the leadership role. Yet the predicted leader is undeniably placed in an advantageous position. These results tend to support Theory #3, that the prediction did indeed have an effect on the entire group process. However, Theory #2 is not refuted or supported, as the group may be subconsciously giving the leadership roles to the predicted individual. Because of the highly significant results, Theory #1 is again refuted.

Conclusion

While the end results of the experiment are definite, the effect of a prediction on how the group perceives the predicted individual is still unanswered. By reviewing the three possible theories of the results, it may help to shed light on the Pygmalion process within the group. Theory #1 was disputed in all four areas of the results, because of the high significance of the data. Theory #2 was refuted by "Interaction Frequency" and "Intragroup Rankings," was supported by "Leadership Ranks of Predicted Leaders," but was neither supported or refuted by the "Comparison of Predicted Leader's Rankings." Theory #3 was supported by all four sets of results and appears to be the most conclusive of all theories.

By combining those areas that the above theories supported, potential Pygmalion models may be developed for the group process. Possibly, the predicted individual has been given confidence, which he expresses to the group. On the other hand, he may begrudgingly accept this so called leader role because he feels he is expected to accept it. In the same light, the group itself may be caught up in the confidence of the individual and reinforce his leadership behavior in a positive manner. This causes him to gain more confidence and therefore hold onto the leadership role. As mentioned before, another possible model of the group's behavior was their view of the predicted leader as an appointed leader. In this paradigm, the group develops a "better you than me" (negative) attitude toward the predicted individual and, therefore, turns over the leadership role to him. Nevertheless, the end results are the same, the predicted leader ends up as the leader.

The results strongly support the hypothesis of this thesis; the predicted leader of a zero history task group will emerge as the group's leadership choice. The various correlations and comparisons strongly indicate that the group did not throw the leadership role to the predicted individual. Whether or not the prediction caused a true Pygmalion effect, or an induced appointed leader effect, will be difficult to decipher and should be the topic of future research. Initially, it would appear that there is a fine line between the two concepts. A true Pygmalion effect would cause both a higher confidence factor within the group toward the leader, and in the leader of himself. This would cause a higher degree of positive reinforcement and perception of the leader's behavior by the group. On the other hand,

the induced appointed leader effect causes the individual to feel he is fulfilling a role because it is expected of him. This expectation may be a by-product of the prediction and possibly self induced. The group members, therefore, allow him to maintain this role regardless of their impressions or reactions to his attempted leadership behavior.

It would appear that the best possible explanation of the results is a combination of Theory #2 and #3. That is, the leadership predictions caused the group to shift the normal emergence process toward the predicted individual, on a subconscious level--a combination of the Pygmalion effect and the appointment syndrome. It is suggested that this shift tends to affect the entire group process: the individuals self confidence, the group's perception of the predicted leader, and the interactions between them. However, the Pygmalion effect may have influenced one aspect of the group process more than another. Nevertheless, the effect was significant, it was subconscious (it was not overtly discussed in the group), it was induced, and may have affected the group process in either a positive or negative manner.

Implications for Future Research

Future research needs to focus on the specific aspect of the group process that is affected by the prediction of leadership. In addition, a comparison of the type of leadership styles that a predicted leader and a true emergent leader exhibit may shed some light on the group's perception of the predicted individual. As

mentioned before, content analysis of the group interactions may also give some valuable insight as to the type of role the predicted leader and emergent leader portray. By better understanding what aspect of the group process Pygmalion affects, it may be used as a powerful tool in such fields as education, group dynamics and counseling, and especially in the treatment of communication apprehension. Management training and development programs may also benefit tremendously by utilizing the Pygmalion effect. This study has uncovered a subtle but important aspect of the group process that can not be ignored.

APPENDIX 1

Group Problem-Solving Task
Information Sharing Exercise

LUTTS AND MIPPS INFORMATION CARDS

How far is it from A to B?

It is 4 lutts from A to B.

How far is it from B to C?

It is 8 lutts from B to C.

How far is it from C to D?

It is 10 lutts from C to D.

What is a lutt?

A lutt is 10 mipps.

What is a mipp?

A mipp is a way of measuring distance.

How many mipps are there in a mile?

There are 2 mipps in a mile.

What is a dar?

A dar is 10 wors.

What is a wor?

A wor is 5 mirs.

What is a mir?

A mir is a way of measuring time.

How many mirs are there in an hour?

There are 2 mirs in an hour.

How fast does the man drive from A to B?

The man drives at the rate of 24 lutts per wor.

How fast does the man drive from B to C?

The man drives from B to C at the rate of 30 lutts per wor.

How fast does the man drive from C to D?

The man drives from C to D at the rate of 30 lutts per wor.

Hint: The correct answer will be a fraction of a wor.

ANSWER: 23/30 wor

J. William Pfeiffer and John E. Jones, Handbook of Structured Experiences for Human Relations Training, 5 vols. (San Diego: University Associates, 1976), Vol 2, p. 24.

APPENDIX 2

Group Member Participation Inventory

List all of the names of the participants, including your own. Next to the list, privately rank the leadership position of each of the group members, according to whose participation was most beneficial, in other words, rank them according to their leadership performance in the exercise that you have just completed. Be sure to rank yourself. The person that you feel was most beneficial in the group, place a 1 (one) after his or her name. The person that you felt was least beneficial, place a 5 (five) after their name, and so forth. When you are finished, place your sheet back in the envelope. When all group members are finished, please go on to envelope #5.

Group Member's Name	Leadership Ranking
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Please place a check mark in front of your name.

APPENDIX 3

Name _____ Sheet Number _____

Leadership Ranking Scale

During this five minute interval, you are to observe all group members and determine the degree of leadership that each group member exhibits. Leadership for this experiment is defined as the amount of positive influence an individual exerts on the group.

You will be notified when the five minute interval is over, at which time please rank order the group members leadership performance by placing their number in the appropriate space.

Best Leader _____

Second Best Leader _____

Third Best Leader _____

Fourth Best Leader _____

Fifth Best Leader _____

APPENDIX 4

Interval # _____ Group# _____

Group Interaction Grid

Your responsibility for this 5 minute interval is to observe the amount of communication used in the experimental group that you are to observe. On the tally sheet below, indicate with a slash mark (/) in the appropriate box, each time a group member interacts.

Group Member #

1	2	3	4	5

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