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Amber B. Keating  
*University of Richmond*

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Activation of Social

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Activation of Social Heuristics in Social Decision Making  
Tasks as a Function of Leadership Role Assignment

Amber B. Keating

Dr. Scott Allison

University of Richmond

## Abstract

The purpose of this study was to investigate the impact of assigning leadership roles implying varying degrees of social responsibility along with examining lay peoples' perceptions of these roles. Using 105 subjects, a 3 (leadership role) x 2 (resource type) design was used to examine how leaders make decisions about sharing resources in groups. First, 41 subjects rated the perceived degree of social responsibility for each of the 32 roles. In the next phase, another 64 subjects were assigned one of three leadership roles (supervisor, guide, or leader) and were asked to take that type of leader's deserved amount of resource (non-partitioned/sand or partitioned/wooden blocks). The results found that the supervisor took significantly more of either resource and also took significantly more time in deciding than did the guide or the leader. Acting more socially responsible, the guide felt more strongly about the necessity to divide equally among all members. Thus, it was concluded from this study that a person behaves significantly different merely from having a certain leadership title. Finally, results from a subsequent cluster analysis of leadership roles were described and implications for further study were examined and discussed.

### Activation of Social Heuristics in Social Decision Making Tasks as a Function of Leadership Role Assignment

When members of a group share a common resource and must choose how much of that resource to consume for themselves and how much to leave for the rest of the members in the group, how does the member decide how much he or she will consume? Research reveals that members do not act like resource-maximizing agents, but rather they use social normative rules (Collett, 1977; Allison & Messick, 1988).

A heuristic is an informal, cognitive rule-of-thumb used to categorize information. Examples of heuristics include rules in which the person would "divide equally" or go by a "first come, first served" rule-of-thumb. In support of a social heuristic model, Rutte, Wilke, & Messick (1987) conducted a study in which subjects shared a resource pool of between 5 and 55 Dutch guilders. Subjects withdrew guilders one member at a time, and if the group requested more than the amount available of the resource, then none of the subjects received anything. However, if they did not exceed the limit, each subject got what he or she requested. Rutte et. al. (1987) found that the subjects would apply social decision heuristics in situations of social interdependence as was found

previously by Messick (1986).

Social decision heuristics are often used by people in order to simplify information processing and decision making based on subjective expectancies (Tversky & Kahneman, 1974). Research has shown that human reasoning is essentially full of errors and that people need to devise methods or rules to guard against biases (that depart from normative principles of statistical reasoning) to which are all prone to error (Nisbett & Ross, 1980). These rules not only provide guidelines for behavior but also provide expectations about others' behavior. Thus, social decision heuristics provide behavior standards of others to be evaluated.

Further research supporting the evidence of the use of the social decision heuristic comes from research by Allison & Messick (1988) which examined the nature of these heuristics by using variables of payoff, divisibility of resource, perceived control over group's outcomes, and the subject's social values of cooperation. Subjects withdrew the fewest amount from the resource when it was divisible, the payoffs were low, and they were classified as cooperative, supporting that subjects base their decisions on a rough application of an equal division heuristic.

To build on this research, it is important to examine the role of the leader of the group and his or her effect on how the shared resource will be divided up. The degree of perceived social responsibility--the degree to which the leader feels responsible for others rather than himself or herself--is significantly different among different leadership titles alone. Thus, perceptions of leadership roles and social responsibility trigger different types of behavior according to the leader's already present script of the title. Investigating how different leadership titles imply varying degrees of social responsibility, Messe (1988) has conducted research on conditions where the leader of a group violates social norms in resource sharing situations. He found that the amount of work the leader does relative to other members is a function of the assigned leadership role and accompanying cognitive scripts for that particular title: The more socially responsible the role is perceived to be, the more work that the leader will do. Therefore, the amount of cooperation in a social dilemma situation depends significantly on the type of leadership role that is assigned to a leader. Also, the stereotypes arising from labels of various kinds of leaders triggers cognitive scripts, activating

cognitive categories that may lead one to act significantly different than without the assigned title (Ashmore & Del Boca, 1981; Abelson, 1976).

Messe's results suggest that social decision making involves norms which can be seen as the cognitive script that prescribes a sequence of appropriate behaviors in a given situation (Allison & Messick, 1988). What are the conditions under which we violate these norms in dilemma situations? Leaders can be viewed as people who define the norms and behaviorally give rise to them. Stereotypes arising from labels or titles of various types of leaders trigger cognitive scripts, activating cognitive categories that may lead one to act significantly different than without the assigned leader-type label (Ashmore & Del Boca, 1981).

The purpose of the present research was to systematically investigate the impact of assigning different roles inferring varying degrees of social responsibility and cooperation along with examining the perceptions of the different kinds of leaders. Subjects were assigned different leadership roles of varying degrees of perceived social responsibility (i.e. "supervisor," who was expected to be perceived as *less* socially responsible and more self-serving than a "guide," who was

expected to be perceived as significantly *more* socially responsible). The amount of the shared resource which were materials of different degrees of partitioning (i.e. sand, which was considered nonpartitioned and blocks, which were considered partitioned) were measured. When the blocks were the shared resource, it was more clear as to how it could be divided into equal parts, since they are more partitioned and separate from one another. Because of this quality, it was hypothesized that with a partitioned resource, the leader would be likely to use an equal division heuristic regardless of role assignment. However, under conditions in which the resource is nonpartitioned, it was hypothesized that the leader would be more disposed to violate equal division in a self-serving direction, especially if he or she was assigned the less socially responsible and more self-serving role as the supervisor. In this type of situation, it would be "easier" to take more of the resource without anyone noticing as much.

In sum, it was expected that the supervisor--the role expected to be perceived as less socially responsible--would take more than his or her share, especially with a nonpartitioned resource, the sand, because it



would be easier to get away with taking more than one's share. The guide was expected to take just his or her share or less just because the guide was merely *perceived* to be more socially responsible.

## Method

### Subjects

The subjects were 105 introductory psychology students at the University of Richmond who participated to fulfill an introductory course requirement. Forty-one subjects were used to rate the degree of social responsibility perceived in each of the leadership titles. Each of the six conditions contained approximately 10 subjects, with a total of 64 subjects in the resource-sharing phase.

### Design

A 3 (leadership title: supervisor, guide, or leader) x 2 (shared resource type: blocks or sand) between-subjects factorial design was used to examine the effects of the leadership title on the subject's sharing the common resource.

### Materials and Equipment

Materials used included 24 lbs. of sand & a sand shovel and 24 wooden

blocks. The equipment needed was a small 16 oz. scale and a measuring cup. Also, several flat boxes with lids were used to contain the resources.

### Procedure

In the first part of the experiment, a list of all possible labels for a leader was compiled (see Appendix A). These titles were then rated on a 1 to 7 Likert scale by 41 subjects according to how socially responsible the subjects perceived each type of leader to be (ranging from not at all socially responsible to extremely responsible).

The labels "supervisor" and "guide" were expected to be and were significantly different from one another in perceived social responsibility. Therefore, since they were both significantly different from each other and both were familiar and widely-used titles, "supervisor" and "guide" were chosen as the assigned titles along with the control condition's neutral title of "leader."

In the next part of the experiment, subjects were randomly assigned to be the supervisor, the guide, or the leader in a simulated group of 6 people (there was no actual group present in the experiment). The subject

was told that the purpose of the experiment was to investigate decision making in groups and that he or she was the leader and, therefore, was the first member of the group to draw from the shared resource.

The task at hand was sharing a common resource with the other members of the group. There were two different types of resources--sand (nonpartitioned) and blocks (partitioned). Asked to take as much of the common resource as he or she would like, the subject was first told that the sequential method was being used to determine the order the members got to draw from the resource. The subject was also told that each member was randomly assigned a number from 1 to 6. The member assigned to "1" would be the first person to draw from the resource and "2" was the second, etc. At this point, the subject was given false feedback that he or she was assigned the first position because of his or her leadership position. Thus, each subject believed that he or she was the first of 6 group members to take from the resource.

The task then began. The formal instructions went as follows, depending on which condition the subject was in (these sample

instructions were for the supervisor in the sand condition:

1. Open up the first container with the number 1 on the lid. Inside this container, you will find 24 lbs. of sand. The object of this task is to take the amount of sand out that you want and put it in the empty box, keeping in mind that you are the supervisor and that you are the first of six persons to do the same. Each pound you take is worth one dollar. At the end of this experiment, a lottery will be held, and the subject who wins the lottery will be given the money earned from the amount of sand taken.
2. Put your selected amount of sand in the empty box. Upon completion of this set of instructions, an assistant will measure the amount you have taken so you can be considered in the lottery.
3. Exit the room and sit down at one of the large tables to complete the questionnaire.

Again, the subject was told that it would be possible that he or she may receive money through a lottery according to how much of the resource that he or she took. During the drawing of the resource, the experimenter inconspicuously timed the amount of time the subject took to draw from the resource, and, after the subject left, the experimenter measured the amount of resource taken.

After the task was completed, the subject was asked to leave the room and to complete a questionnaire pertaining to the subject's perceptions of the experiment (see Appendix B for the sample

questionnaire for the supervisor). Upon completing this, the subject was debriefed. Each subject was eligible for the lottery which was held at a later time to determine who would receive cash in exchange for the amount of resource taken. A cluster analysis of all of the leadership roles was conducted to determine the similarities and differences between the different leadership roles.

## Results

### Ratings of the Leaders:

The cluster analysis of the 32 leadership roles resulted in nine different clusters (see Figure 1). The criteria determining which would

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Insert Figure 1 about here

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be their particular cluster group included the degree of social responsibility, group type (i.e., political, organizational, or educational), group size (small to large), degree of leadership teamwork needed (the leader can be the only leader or part of a larger team), group member type (i.e., members of a country, educational system or of differing

equality--either equal to the leader or subordinates to the leader), and the degree of specialization involved (i.e., an advisor would overlook only those in his area of specialty). Overall, the clusters ranged from a high degree of social responsibility to a low degree of social responsibility. The members of the first cluster (principal, leader, guide, advisor, facilitator, mentor) were all perceived to have a high degree of social responsibility and are usually one of a team of decision makers. The main characteristic of the second cluster (prime minister and president) was that of a democratic political perspective, leading over a country and socially responsible politically. This type of person is held accountable by a sub-group. The third cluster (chairman, and captain) consisted of an unusual pair of leaders who usually lead over a small group in a specialized area and probably have had to work their way up the ladder. A manager and supervisor made up the fourth cluster, both of these types of leaders head up a small group of workers in a hierarchical or organizational structure. The fifth group (head, headmaster, superintendent) consisted mainly of educational leaders in the administrative arena. The members of the sixth group (director,

conductor, commander, chief, and authority) were all specialized leaders of a smaller type of group. Organizational leaders made up the seventh cluster (boss, employer, executive, and superior) and are usually involved in a corporation. Cluster eight consisted of only one member (skipper), a leader in a class of its own. And, finally, the ninth cluster, made up of the leaders who were perceived as the least socially responsible, consisted of several leaders who are more totalitarian and lead over a geographical area. This type of leader is usually the sole decision-maker of the group and thus has more power.

The means of the perceived degree of social responsibility revealed that the supervisor was perceived to be significantly less socially responsible than the guide, who was perceived to be the most socially responsible or the leader who was neutral,  $F(31, 1311) = 7.34, p < .0001$ . See Appendix C for the list of all of the leadership roles and their mean degree of social responsibility.

#### Analysis of the Resource Sharing and the Social Decision Making:

An Analysis of Variance on the amount of resource taken revealed that the supervisor took significantly more of the resource than either the

guide or the leader,  $F(2, 58) = 4.95, p \leq .05$  (see Table 1). The supervisor also took significantly more time to decide how much to take than either

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Insert Tables 1, 2, & 3 about here

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the guide or the leader,  $F(2, 58) = 5.78, p \leq .005$  (see Table 2).

The degree of how much a particular leader felt that it was important to divide equally among all of the members was also significant with the guide feeling the strongest for its importance,  $F(2, 58) = 55.23, p \leq .0001$  (see Table 3).

### Discussion

The results from the cluster analysis agree with that of the rest of this research: the degree of social responsibility differs greatly from leader to leader. The range of the clusters were surprisingly wide and complex, implying that the perceptions of a leader are also very complex and varied. This cluster analysis revealed a new dimension of how leaders can be grouped together--not whether the leader is task-oriented or relationship-oriented, although these qualities are included in some of the



cluster groups. The clusters can *all* be placed into the three categories that Fiedler & Chemers (1974) found in their leader-members categories of (a) the degree of loyalty and commitment between the leader and followers (leader-member relations), (b) task structure, and (c) authority and position power. However, the cluster analysis of this study was more descriptive in that it broke down Fiedler & Chemers' (1974) three broad categories into nine smaller clusters that are much more distinct and descriptive.

The results from the resource sharing phase of this study demonstrate that the leader who was merely *perceived* as being more socially responsible (the guide) took significantly less than the leader who was perceived as being less socially responsible (the supervisor) and who took significantly more of the resource than his or her share of the resource, regardless of the resource's degree of partitioning. The differences for all three leaders were quite strong: The supervisor not only acted much more greedily than the guide, who acted socially responsible, but the supervisor also took significantly longer to decide than the guide (perhaps some cognitive dissonance was occurring in this

social dilemma?). These findings confirm past research that found that members of a group tend not to act like resource-maximizing agents but rather use social normative rules or heuristics (Allison & Messick, 1988; Collett, 1977). It was apparent that the guide used the "equal division" heuristic, while the supervisor acted in a self-serving direction and used a "first come, first served" heuristic.

These results reveal the significant impact that one's title and position have on resource-sharing and decision making. The leader does indeed affect the group and its members, depending on the leader's title and subsequent perceptions of that type of leader and on how that certain leader would act. Our findings suggest that this occurs regardless of the resource type.

These findings also suggest that people enter into situations with biases and errors in reasoning. These biases are usually magnified when the person is in a situation where he or she is the leader with a prominent position, and in charge of making the decisions. In effect, one's perceptions alone largely determine one's behavior and decision making.

One implication from this research is that one's title alone has a

significant effect on one's behavior and decision making (positive or negative). This is highly applicable to companies and other organizations in that it is wise to be aware of this particular effect and the possible effect on employee performance. Perhaps there may be steps that organizations can take to prevent a leader from being self-serving at the cost of others.

Possible limitations of this study include it looking at only three different leaders, and examining only the perceived degree of social responsibility and not other personality characteristics. Future research might utilize the Myers-Briggs personality inventory to determine other traits involved. The reasons for the delay in the decision making for the supervisor should also be examined, and the other 32 titles should be further investigated to see how other leaders share resources.

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Appendix A

1. chairman
2. manager
3. executive
4. boss
5. employer
6. head
7. dictator
8. monarch
9. skipper
10. captain
11. mentor
12. chief
13. guide
14. director
15. conductor
16. commander
17. authority
18. superintendent
19. ruler
20. president
21. master
22. emperor
23. adviser
24. superior
25. prime minister
26. supervisor
27. principal
28. leader
29. chancellor
30. facilitator
31. headmaster
32. czar

Appendix B  
Sample Supervisor Questionnaire

Please briefly answer the following questions with regard to the experiment you just participated in. Answer the questions in order and once you have answered a question, please do not refer back to it or change your answers.

1. What do you think the preceding experiment was examining?
2. How much of the shared resource do you think you took?
3. How would a supervisor think differently about the task of taking one's share from a common resource than a guide?
4. As the supervisor of a group of 6 members, how important (on a scale from 1 to 7) was it to divide the resource equally among the members of your group?

|            |   |   |   |   |   |           |
|------------|---|---|---|---|---|-----------|
| 1          | 2 | 3 | 4 | 5 | 6 | 7         |
| not at all |   |   |   |   |   | extremely |
| important  |   |   |   |   |   | important |

5. As supervisor, how much did you feel (on a scale from 1 to 7) that you deserved more or less than the rest of the group?

|            |   |   |   |   |   |           |
|------------|---|---|---|---|---|-----------|
| 1          | 2 | 3 | 4 | 5 | 6 | 7         |
| not at all |   |   |   |   |   | extremely |
| important  |   |   |   |   |   | important |

6. If you had a different role in the group, would you have taken a different amount? If so, how much?
7. How do you perceive the supervisor of a group and what do you perceive to be his/her responsibilities in the group?
8. If the other members of your group were present, would you have taken any more or less?

Appendix C  
Leadership Titles and Mean Social Responsibility

|                    |      |
|--------------------|------|
| 1. chairman        | 4.42 |
| 2. manager         | 3.63 |
| 3. executive       | 3.76 |
| 4. supervisor      | 4.12 |
| 5. boss            | 3.32 |
| 6. prime minister  | 4.78 |
| 7. employer        | 4.00 |
| 8. principal       | 4.27 |
| 9. leader          | 4.37 |
| 10. head           | 3.03 |
| 11. dictator       | 3.02 |
| 12. monarch        | 3.95 |
| 13. skipper        | 4.12 |
| 14. czar           | 3.73 |
| 15. captain        | 3.76 |
| 16. mentor         | 5.10 |
| 17. chief          | 4.54 |
| 18. guide          | 5.20 |
| 19. facilitator    | 4.42 |
| 20. director       | 4.42 |
| 21. conductor      | 3.15 |
| 22. commander      | 4.46 |
| 23. authority      | 4.07 |
| 24. headmaster     | 3.66 |
| 25. superintendent | 4.56 |
| 26. chancellor     | 3.49 |
| 27. ruler          | 4.34 |
| 28. president      | 4.05 |
| 29. master         | 3.39 |
| 30. emperor        | 3.90 |
| 31. adviser        | 4.54 |
| 32. superior       | 3.65 |



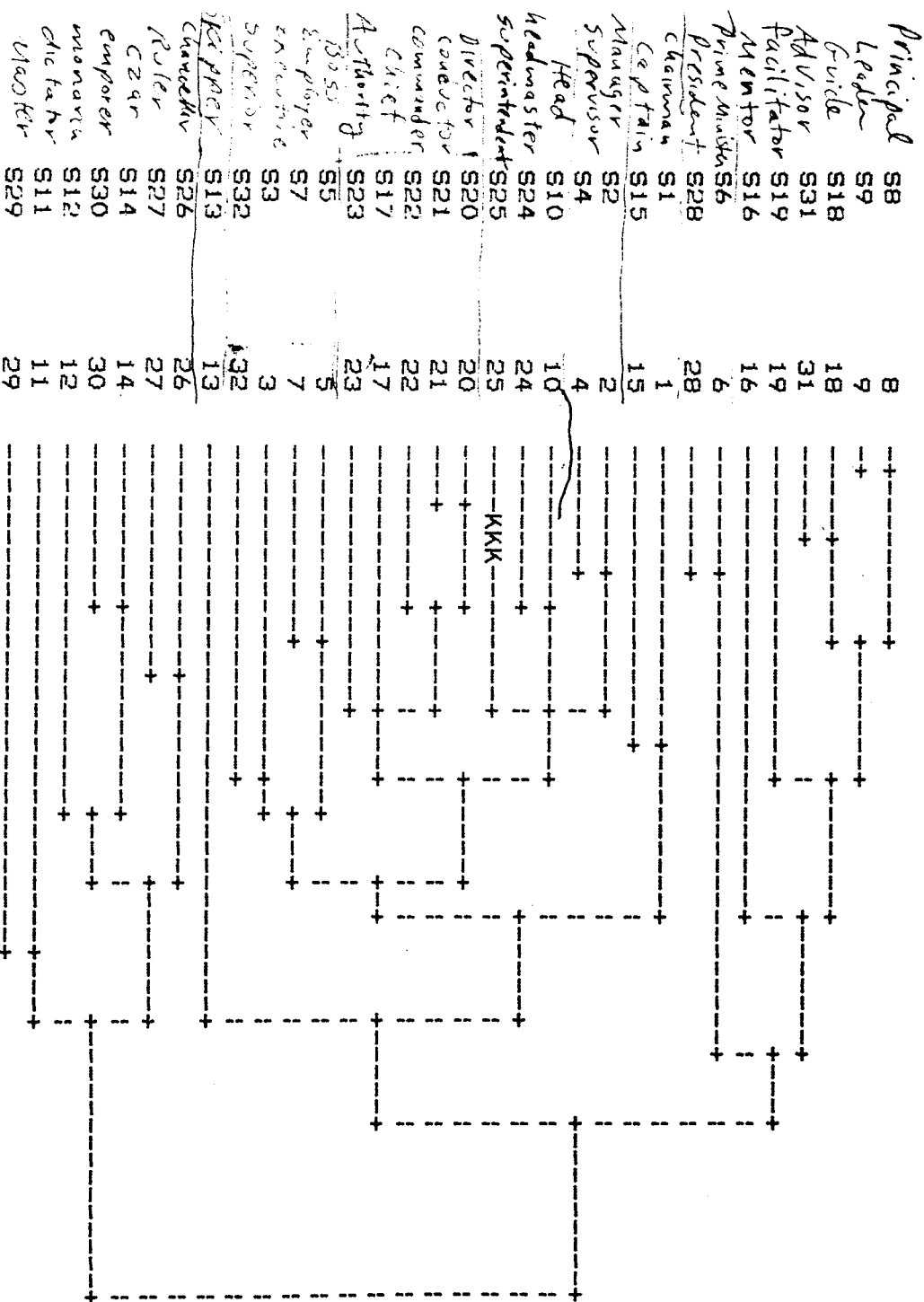
Figure Captions

Figure 1. Cluster analysis of leadership titles and their degree of perceived social responsibility.

# Dendrogram using Average Linkage (Between Groups)

## Rescaled Distance Cluster Combine

| CASE  | Seq | 0 | 5 | 10 | 15 | 20 | 25 |
|-------|-----|---|---|----|----|----|----|
| Label |     |   |   |    |    |    |    |



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PRECEDING TASK REQUIRED 1.49 SECONDS CPU TIME; 4.87 SECONDS ELAPSED.

Table 1

**Means of the Amount of Resource Taken**

| <u>LEADERSHIP</u><br><u>TITLE</u> | <u>RESOURCE</u>    |                  | <u>TOTALS</u> |
|-----------------------------------|--------------------|------------------|---------------|
|                                   | <u>24 LBS SAND</u> | <u>24 BLOCKS</u> |               |
| Supervisor                        | 5.962              | 6.100            | 6.022         |
| Guide                             | 4.082              | 4.300            | 4.186         |
| Leader                            | 3.930              | 4.400            | 4.165         |
| <u>TOTALS:</u>                    | <u>4.756</u>       | <u>4.933</u>     | <u>4.839</u>  |

Table 2

**Means of the Amount of Time Taken to Decide  
(seconds)**

| <u>LEADERSHIP</u><br><u>TITLE</u> | <u>24 LBS SAND</u> | <u>24 BLOCKS</u> | <u>TOTALS</u> |
|-----------------------------------|--------------------|------------------|---------------|
| Supervisor                        | 181.00             | 24.10            | 112.78        |
| Guide                             | 142.36             | 27.60            | 87.71         |
| Leader                            | 74.70              | 26.20            | 50.45         |
| <u>TOTALS:</u>                    | <u>137.24</u>      | <u>25.97</u>     | <u>85.08</u>  |

Table 3

**Means of the Degree of Importance to Divide Equally  
(On a 1 to 7 Likert Scale)**

| <u>LEADERSHIP</u><br><u>TITLE</u> | <u>24 LBS SAND</u> | <u>24 BLOCKS</u> | <u>TOTALS</u> |
|-----------------------------------|--------------------|------------------|---------------|
| Supervisor                        | 4.308              | 4.800            | 4.522         |
| Guide                             | 6.091              | 6.200            | 6.143         |
| Leader                            | 5.300              | 5.600            | 5.450         |
| <u>TOTALS:</u>                    | <u>5.176</u>       | <u>5.533</u>     | <u>5.344</u>  |