CULTURAL DIVERSITY AND TEAM PERFORMANCE:
TESTING FOR SOCIAL LOAFING EFFECTS

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Deanna M. Heller, B.A., M.A.
Denton, Texas
May, 1997
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The concept of social loafing is important with regard to organizational effectiveness particularly as organizations are relying on teams as a means to drive productivity. The composition of those teams is likely to reflect the current movement of racial and ethnic minorities in the work place. The primary purpose of this research was to determine the role cultural diversity plays in enhancing performance and thereby eliminating social loafing. The research study is significant because 1) it is among the first to use culturally diverse work groups while examining the social loafing phenomenon, and 2) the groups were intact project teams, rather than ad-hoc groups commonly found in social loafing experiments. It was anticipated that the members of culturally homogeneous groups would engage in social loafing when their individual efforts were "buried." However, subjects in both culturally diverse and culturally homogeneous groups resisted social loafing behaviors. Additional statistical analysis revealed that as group orientation increased, performance levels increased as well. Group orientation, then, appears to be a more powerful
determinant of performance than group composition. It is expected that the time these groups had together and the performance feedback opportunities provided them, prior to the experiment, contributed significantly to these results. Future research suggestions were made that could help establish a causal relationship.
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CHAPTER 1

INTRODUCTION

Researchers from a number of disciplines are actively involved in the pursuit of greater understanding of individual behavior in group settings. For example, cognitive psychologists are beginning to recognize the importance of “relations among cognition, motivation and broader processes of social influence and engagement” (Levine and Resnick and Higgins, 1993). Journals and books dealing with the study of small groups line library shelves. Beyond academic curiosity, management has an intense need for answers to questions regarding how to manage their employees to create a dynamic, competitive workforce capable of accomplishing organizational goals and objectives.

Two trends are of particular concern for today’s organization: 1) the movement toward team-based processes with 2) an increasingly diverse workforce. Teams have grown in popularity over the last several decades. Today, the movement to team-based processes are greater than ever. The advantages of group problem-solving are well publicized: higher quality solutions to problems in less time and with
fewer errors (Johnson and Johnson, 1994). The high-performance team utilizes the creative talents of all group members to create a synergy that leads the organization to the attainment of goals and objectives (Buchholz, Stave and Hess, 1987).

However, the employee mix is ever-changing. Population forecasts suggest that by the year 2050, one-half of the US population will be African-American, Hispanic-American, Native-American and Asian-American (Fernandez, 1991). Academicians and practitioners alike agree: the extent to which today's organization can successfully integrate diversity in their company will in large part determine the organization's competitive edge in the market place (Copeland, 1988b; Maznevski, 1994).

Company testimonials underscore the benefits of cultural diversity in the organization. For example, a Human Resource Manager for Proctor and Gamble is quoted as saying "Diversity provides a much richer environment, a variety of viewpoints, greater productivity. And... it makes work more fun and interesting" (Copeland, 1988a). Cox and Blake (1991) outlined six dimensions of business performance directly impacted by the management of cultural diversity: costs, attraction of human resources, marketing success, creativity and innovation, problem-solving quality
and organizational flexibility. Furthermore, taking advantage of cultural diversity can help the organization deal with such issues as new EEO legislation, the slow growth of the labor market and increased globalization (Jackson, Stone and Alvarez, 1992; Abbasi and Hollman, 1991).

Unfortunately, we know that work teams do not always perform as effectively as possible. One major complaint of group-based activities is when one or more individuals refuse to do their share of the work. Process losses may occur such that individuals within the group may exert less effort on the group's behalf than they would if they were individually responsible for the task. This reduction in effort has been termed "social loafing" (Latane, Williams and Harkins, 1979). They described social loafing as a "kind of disease [that has] negative consequences for individuals, social institutions and societies" (p. 831).

Of course, social loafing is not inevitable. Situational and social factors have shown to have an important impact on the extent to which social loafing occurs (Jackson and Williams, 1985). The literature review in chapter two will address the many moderators which have been shown to reduce or eliminate social loafing. One of the purposes of this study is to investigate the role
cultural diversity plays as a potential moderator of this phenomenon.

**Statement of Problem**

The concept of social loafing is important with regard to organizational effectiveness particularly as organizations are relying on teams as a means to drive productivity. The composition of those teams is likely to reflect the current movement of racial and ethnic minorities in the workplace. The changing demographic scenario is requiring managers to develop a greater understanding of how individuals from a variety of backgrounds interact in an organizational setting.

A number of social loafing investigations use culture as a means of comparing the performance of culturally homogenous groups. Cultural diversity studies search to discover potential differences between culturally diverse groups and culturally homogenous groups in decision-making performance. After reviewing significant journals in the field, dissertation abstracts and practitioner sources, no studies were found that explore the effects of cultural diversity on social loafing. This study will attempt to fill an apparent gap in the literature.
Theoretical Basis of Research

The theoretical basis for this study is grounded in theories of group behavior at both the micro and macro levels. Social loafing investigations come out of small group research and motivation theory. Whereas, the behavior of much larger groups—whole societies—has given way to important studies of culture. Cultural diversity, then, blends these two lines of research to form the study of small groups in which individuals from diverse backgrounds interact.

Group Performance and Process Loss—Social Loafing

A number of studies indicate that, in general, groups perform at a higher level than what individuals can do alone. Groups make better decisions, with higher quality solutions to problems (Hill, 1982). Social facilitation research demonstrated that the mere presence of other co-actors or a passive audience can enhance performance (Zonjac, 1965; Levine and Resnick, 1993). However, group performance is not always maximal. For instance, motivation losses may occur to impede performance. This phenomenon was first noted by Max Ringelmann (1913, summarized in Kravitz and Martin, 1986).

Latane, Harkins and Williams (1979) called the reduction of effort when working with others, compared to
when working alone, social loafing. Latane (1981) explained social loafing in terms of his social impact theory which holds that there is a great variety of changes in "psychological states and subjective feelings, motives and emotions, cognitions and beliefs, values and behavior, that occur in an individual as a result of the real, implied or imagined pressures or actions of others." Latane explained that the individual is the target, other people represent the source of impact, and the force of the impact is a multiplicative function of the strength, immediacy and number of other people. In the case of social loafing, the source of impact is divided—diffused across group members.

The bulk of subsequent research on social loafing attempts to identify factors which can reduce or eliminate its effects on performance. Increasing identifiability of member task contributions (e.g. Harkins and Petty, 1982), member accountability (e.g. Weldon and Gargano, 1988) and potential for evaluation (e.g. Harkins and Szymanski, 1989) have all been shown to reduce loafing.

**Group Performance and Cultural Diversity**

Logically, the theoretical foundations for cultural diversity and group performance are based on culture and diversity research. Researchers have worked for decades to uncover reliable differences between cultures. As a result
of data collected from 53 countries, Hofstede (1980) identified several distinct cultural dimensions. One relevant to social loafing is his bi-polar scale of individualism-collectivism. Collectivistic societies are characterized by cooperation and the subordination of personal interests for the welfare of the group (Triandis et al., 1985; Wagner and Moch, 1986). On the other hand, individualistic societies are characterized by an emphasis on personal achievement, self-sufficiency and control (Triandis, 1988). Greeks (Triandis, 1972), east and west Africans (Kwasi, 1980), Chinese (Hsu, 1981; Bond and Fargas, 1984), Latinos (Abrahams, 1983) and Japanese (Adler, 1986) have demonstrated collectivistic tendencies. Americans, Australians and northern and western Europeans (Inkeles, 1983; Triandis, 1988) have demonstrated clear individualistic tendencies.

Though the United States has been identified as highly individualistic, subcultures within the US have been shown to be quite collectivistic in nature. Hispanic-Americans (Kagan, 1977; Triandis, Marin, Hui, Lisansky and Ottati, 1984; and Marin and Triandis, 1985), African-Americans (Kochman, 1981; Foeman and Pressley, 1987; and Washington, 1987), and Asian Americans (Triandis, McCusker, and Hui, 1990) behave consistently with their collectivistic
heritage. Likewise, Anglo-Americans demonstrate individualism in line with the Euro-Anglo tradition (Cox, Lobel and McLeod, 1991; Cox, 1993).

Empirical cultural diversity research was born out of early group dynamics research that compared homogeneous groups to heterogeneous groups. These comparisons were based on some single characteristic such as age, ability, sex and personality profiles (Shaw, 1981). Overall, heterogeneous groups outperformed their homogeneous comparison groups (Goodman, Ravlin and Arsote, 1986). Eventually, researchers began to compare culturally diverse groups to homogeneous groups. Since groups had been shown to make better decisions, perhaps the diversity of perspectives possible from a culturally diverse group would lead to similar positive results in decision making. "Cultural synergy" has been defined as "the result of positive interaction between multiple national and ethnic cultures (Adler and Jelinek, 1986). Indeed, researchers have concluded that cultural diversity has the potential to benefit group performance (Watson, Kumar and Michaelsen, 1993; Cox, 1993). However, culturally diverse groups may face a number of barriers to effective performance, particularly when they are newly formed (Watson Michaelsen and Sharp, 1991; Watson and Kumar, 1992). Synergy is
possible if group members have the time to overcome potential problems of mistrust, misunderstanding and lack of cohesions (Adler, 1986; Watson et al., 1993).

**Purpose of Research**

The purpose of this study is to examine the role of cultural diversity as a moderator on social loafing. Culturally diverse groups will be compared to non-diverse, all-Anglo groups. Specifically, this study addresses:

1) To what extent do culturally diverse groups differ from culturally homogeneous groups in terms of their team-orientation versus their individual-orientation?

2) To what extent does performance vary among members in culturally diverse groups when working collectively toward a pooled outcome compared to working alone. In other words, will culturally diverse groups socially loaf?

**Significance of Research**

This extends the research in both the areas of cultural diversity and social loafing. A few significant studies actually utilize culturally diverse groups (Cox, Lobel and McLeod, 1991; Watson et al. 1992; Watson et al., 1993). Most simply compare cultures using homogenous groups. Such is the case with the social loafing research that deals directly with culture. This research effort is the first
to use culturally diverse groups while examining the social loafing phenomenon.

This study differs significantly from others in another important way. Research has shown that newly formed groups perform differently from groups in which members have worked together for some period of time (Watson, 1991). With this in mind, the groups used for this research were not one-shot, ad-hoc groups who were meeting only once. Rather, the subjects in this study were members of on-going, intact work groups who had a significant working relationship for approximately ten weeks. The groups completed several joint projects which required planning, organizing and problem-solving. In this way, the groups in this study more closely resemble organizational project teams.

**Organization of the Paper**

This research study is organized into five chapters. This chapter provides an overview of the study including the statement of the problem, purpose of the research, its significance to the field and the methodology of the study. Chapter two provides an extensive review of the literature in the areas of social loafing, cultural diversity and related topics. Chapter two also presents a research model and hypotheses to be tested. Chapter three details each
component of the research design and methodology. Chapter four reviews the analysis of each hypothesis and summarizes the results. Chapter five discusses each hypothesis in terms of the implications of the results, explores various explanations for the findings and makes suggestions for future research.
CHAPTER 2
LITERATURE REVIEW

The literature review is presented in four sections. The first section reviews the current understanding of individual versus group performance, particularly with regard to the effects of process gains and losses on that performance. The second section classifies social loafing research into four broad categories. The third segment examines cultural diversity and its role as a potential moderator of social loafing. Finally, a summary of the relevant literature and the hypotheses to be tested are presented in the last section of this chapter.

Individual versus Group Performance

There has been a long-standing argument as to the effectiveness of group versus individual decision making. Hill's (1982) comprehensive review covered 61 years of research comparing group and individual performance on four dimensions: task, process, individual differences and methodology. Her analysis revealed that "group performance was generally qualitatively and quantitatively superior to
the performance of the average individual." A more recently published review suggests that groups learn faster, make fewer errors, recall better, make better decisions and are more productive with a higher quality product than individuals (Johnson and Johnson, 1994).

**Process Gains/Process Losses**

One example for group success over individual efforts can be described in terms of a process gain that is realized when team members interact. Group discussion stimulates the development of ideas, insights and strategies that no one member previously thought of. For example, when discussing problems, groups have been found to provide a greater number of "crucial insights" as to how to best solve problems than did individuals who were working alone (Skon, Johnson and Johnson, 1981). Groups are also more likely to identify and reject incorrect solutions to problems (Shaw, 1932).

Groups also have been found to behave in such a way as to facilitate a higher motivation to achieve. That is, the group provides a context of cooperation in which members give help and assistance in promoting each other's success. Social facilitation research suggests that positive interdependence and social support in a group leads to more effective decision making (Geen, 1980); whereas, individuals
working alone may experience greater competitiveness, evaluation apprehension, fear of punishment or embarrassment that ultimately impairs their performance (Baron, Kerr and Miller, 1992; Bond, 1982; Geen, 1980).

While groups are likely to be more productive than individuals, there is substantial evidence that groups may not be as productive as they could be. Individual efforts within a group may not be coordinated effectively nor optimally motivated to contribute to team success (Steiner, 1972). Essential to quality group decision making is positive interdependence (Johnson and Johnson, 1994). That is, team members perceive that their success depends on the success of their teammates and vice versa. Where individual team members fail to recognize the uniqueness and necessity of their contribution, groups are likely to function inefficiently and ineffectively.

There is a large body of research which illustrates how individual behavior may impair the effectiveness of the group. Individual motives may lead to behavior that is less conducive to effective group decision making. Group members may attempt to sabotage the group's effort or may be unable or unwilling to objectively evaluate the opinions of others. When this egocentrism and competition develops, groups may experience interference or production blocking.
only one person can be heard at a time, one member may prevent the participation of others and thus, lower the decision-making effectiveness of the group (Deil and Stroebe, 1987; Johnson and Johnson, 1994).

The form of process loss of particular interest in this research is social loafing. Social loafing is the reduction of individual effort when working with others on a group task (Williams, Harkins, and Latane, 1981). In general, the social loafing literature identifies a "lost in the crowd" phenomenon in which individuals are not accountable and cannot evaluate their own efforts and therefore, responsibility is diffused across all group members (Hackman and Walton, 1986; Harkins and Petty, 1982). Social loafing is also likely to occur when there is no "spirit of commitment" to the group (Hackman and Walton, 1986) and loafing is suspected or perceived of other group members (Zaccaro, 1984). Individual team members may also opt to "free ride," allowing group members to work toward the task while doing no work oneself (Olson, 1965). Group members may perceive their efforts to be dispensable and the effort required may seem too costly. Under these conditions, individuals have been found to be less likely to exert effort on the group's behalf (Kerr, 1983).
The research evidence is clear that groups generally perform at a higher level than what individuals can do alone. However, it is also clear that group membership alone does not guarantee maximal group achievement. One's inclination toward behaving in a group-oriented manner versus an individually-driven manner can either enhance or detract from the group's ability to succeed. Since organizations today are relying more and more on the effectiveness of work teams, complicated by diversity issues, it is imperative that we understand how to best manage teams in terms of their individually-focused and team-focused activities.

**Review of Social Loafing Literature**

This section reviews the historical foundations of social loafing as it developed in social psychology and management domains. Here, social loafing literature is classified in terms of 4 broad categories of moderators shown to reduce, if not eliminate social loafing: 1) performance identifiability; 2) task characteristics; 3) member characteristics; and 4) potential for evaluation.

**Historical Foundations of Social Loafing**

Early in this century, Max Ringelmann, a German psychologist, had groups of one, three or eight pull on a
rope as hard as they could. Though the study is not published, numerous researchers have reported many of the details (Steiner, 1972; Ingham, Levinger, Graves and Peckham, 1974; Kravitz and Martin, 1986). Ringelmann measured the total force and computed the average pull per person. He discovered a clear difference between the groups’ potential and actual performance. When pulling one at a time, individuals averaged 63 kg of pressure. Groups of three exerted only two and one-half times the average individual’s performance, and groups of eight pulled less than four times the individual average. This phenomenon came to be known as the Ringelmann Effect.

At about the same time, across the Atlantic, Frederick Taylor's term would have been “soldiering” which refers to the deliberate withholding of maximum effort (1911). Taylor suggested that peak performance could not be achieved where there is a lack of cooperation and the need for “workers to protect his own best interests” (pg. 15-16). Taylor's fourth principle of scientific management was designed to remove the need to soldier through “equal division of the work and the responsibility”—a notion echoed decades later.

Years after Ringelmann's discovery, researchers began to question whether the reduction in effort was due to coordination losses or motivation losses (Steiner, 1972).
For an answer, Ingham et al. (1974, experiment 2) controlled for coordination losses and found that individual motivation dropped as group size increased up to three persons and remained stable thereafter. Motivation loss was identified as the cause behind reduced group effort in the study by which the phenomenon has come to be known as "social loafing." Latane et al. (1979) coined the term after conducting a conceptual replication of the rope-pulling experiments using shouting trials. They asked participants to generate as much noise by shouting as loudly as possible. They either shouted alone or in groups of two or six. When performers believed that one other person was shouting, they yelled 82 percent as intensely as when alone. When they believed five others were shouting, they yelled only 74 percent as intensely. The researchers concluded that motivation loss was a possible result from being "lost in the crowd" or unidentifiable to experimenters when their efforts were pooled with those of group members.

Effects of social loafing have been generalized to a wide variety of tasks including shouting and clapping (Latane et al., 1979), pumping air (Kerr and Bruun, 1981); brainstorming, (Harkins and Petty, 1982; Harkins and Jackson, 1985), evaluating job descriptions (Weldon and Gargano, 1985) and solving anagrams (Latane, 1985) and mazes
(Jackson and Williams, 1985). With few exceptions, the bulk of social loafing research tests for its effects on performance by comparing group versus individual efforts under experimental conditions. Rather than asking "why" loafing occurs, researchers want to learn how to overcome the "lost in the crowd" phenomenon by actively seeking to uncover moderators which reduce or eliminate social loafing effects. The following places these moderators in four categories of social loafing research: performance identifiability, task characteristics, member characteristics and potential for evaluation.

**Performance Identifiability**

Typical social loafing research compares experimental subjects when working alone to those working collectively toward group performance. Loafing is said to occur when individuals put more effort into tasks where they have sole task responsibility than they do when they share task responsibility with other group members. As mentioned above, speculation as to why social loafing occurs often centers around the notion of a "lost in the crowd" phenomenon as first described by Latane et al. (1979). When in groups, individual outputs are "submerged in the total, separately unrecoverable by the experimenters," (Williams, Harkins and Latane, 1981). Under such circumstances of
shared task responsibility, individuals are less motivated to do well or work hard. Because their performance is unidentifiable, individuals working in groups receive neither the credit nor the blame for their effort.

Performance identifiability has been shown to moderate social loafing in a number of studies, using a variety of different experimental tasks (Petty, Harkins and Williams, 1980; Williams et al., 1981; Weldon and Gargano, 1985; and Weldon and Mustari, 1988). In cheering experiments where performance was identifiable only for those shouting alone, people made 69 percent as much noise when they thought they were shouting with one other person and 63 percent when they thought they were shouting with five others as when alone (Williams et al., 1981). Further, when individual outputs were always identifiable (even in groups), people consistently exerted high levels of effort. When outputs were never identifiable (even when alone), people consistently exerted low levels of effort across all group sizes.

Petty, Harkins and Williams (1980) manipulated performance identifiability in two different cognitive effort tasks. In the first, students generated a list of reactions to a videotape performance of a counseling psychologist. Students working alone generated more
thoughts about what they saw than those who believed they
shared responsibility for generating reactions with the
group. Social loafing was also found when students were
asked to evaluate editorials advocating comprehensive exams
as a requisite for college graduation. Similar results were
found in a pair of studies in which participants who
believed responsibility for the task was shared produced
fewer evaluations and used less complex judgment strategies
than individuals working alone on an attribute judgment
task (Weldon and Gargano, 1985; Weldon and Mustari, 1988).

This research, summarized in Table 1, has established
the important role performance identifiability plays in
eliminating social loafing. Individual performance levels
have declined when subjects believed that their efforts were
not distinguishable from that of others. The fact remains,
however, that individual performance in the work place
cannot always be distinguished. Therefore, it is imperative
for researchers to identify other moderators of social
loafing that may motivate high levels of effort, despite
performance unidentifiability. The following reviews these
efforts.
Table 1.

Performance Identifiability in Social Loafing Research

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<thead>
<tr>
<th>Author, Year</th>
<th>Task</th>
<th>Results</th>
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<tbody>
<tr>
<td>Ringelmann, 1913</td>
<td>Rope Pulling</td>
<td>Individual performance declined as more people participated in task</td>
</tr>
<tr>
<td>Ingham, Levinger,</td>
<td>Rope Pulling</td>
<td>Replicated Ringelmann effect.</td>
</tr>
<tr>
<td>Graves &amp; Peckham, 1974</td>
<td></td>
<td></td>
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<tr>
<td>Latane, Williams &amp;</td>
<td>Shouting &amp; Clapping</td>
<td>Average sound pressure produced per person decreased as group size increased.</td>
</tr>
<tr>
<td>Harkins, 1979</td>
<td></td>
<td></td>
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<tr>
<td>Petty, Harkins &amp;</td>
<td>Cognitive effort:</td>
<td>Ss working alone generated more thoughts than when they shared</td>
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<tr>
<td>Williams, 1980</td>
<td>video reactions &amp;</td>
<td>responsibility.</td>
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<td>editorial evaluation</td>
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<tr>
<td>Williams, Harkins &amp;</td>
<td>Cheering</td>
<td>Consistently high identifiable consistently low unidentifiable outputs.</td>
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<tr>
<td>Latane, 1981</td>
<td></td>
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<tr>
<td>Weldon &amp; Gargano,</td>
<td>Judgment tasks</td>
<td>Ss used less complex judgment strategies when believed they worked alone.</td>
</tr>
<tr>
<td>1985</td>
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<tr>
<td>Weldon &amp; Mustari,</td>
<td>Evaluation generation</td>
<td>Ss produced fewer evaluations when working alone.</td>
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<td>1988</td>
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Task Characteristics

A number of researchers have attempted to determine if there is a difference in the level of social loafing found in groups given some task characteristic. Social loafing researchers experiment with task difficulty, task uniqueness, task attractiveness, task visibility,
personally involving tasks and tasks which require creativity, decisions or opinions. The literature is summarized in Table 2.

**Task Difficulty:** In one of the earliest studies that uses the term “social loafing” to describe their findings, Harkins and Petty (1982) argued that if performance cannot be detected and the task itself does not enhance subjects’ motivation to perform their best, social loafing will occur. The author's conducted two different experiments using different tasks manipulated for task difficulty. In the first, subjects were asked to generate as many uses for either a knife (easy task object) or a detached doorknob (difficult task object). In the second, it was either easy or difficult to count the number of signals on a TV screen. In both cases, group members loafed on the easy task. However, there was no difference in performance between individual effort and group member effort on the difficult tasks—the loafing effect was eliminated. Harkins and Petty (1982) concluded that on challenging tasks, subjects may perceive that their contributions are not easily duplicated by someone else. Therefore, they are motivated to perform even when the subject's work remains unidentifiable. Similarly, Jackson and Williams (1985) found that when subjects worked to complete a computer maze, they did better
individually on simple mazes. However, subjects who worked collectively did better on difficult mazes.

**Task Uniqueness:** Group members may exert more effort if they are given the opportunity to make a unique contribution to the collective task, even when that contribution may not be identifiable in the final output (Harkins and Petty, 1982; George, 1992). During the same period when Harkins and Petty (1982) were testing the role task difficulty plays in eliminating social loafing, the authors also manipulated task uniqueness in a series of experiments. Even when outputs were equally unidentifiable, subjects who were given their own task (either their own quadrant to watch or their own object for which to generate uses) performed better than subjects working on the same task. Further, in a rare social loafing study set in an organization, George (1992) found that salespeople would loaf the most when their effort had low visibility and they thought they made a low contribution to their organization. However, loafing decreased considerably when salespeople believed their contribution to the organization was important, despite the low visibility of their effort. Results from these studies indicate that the opportunity to make a unique contribution to the collective effort may be
enough to warrant the best efforts of group members, reducing, if not eliminating social loafing.

**Task Involvement/Meaningfulness:** Tasks may be considered personally involving when they have high intrinsic importance, personal meaning or result in significant consequences for one's life (Petty and Cacioppo, 1979). With this in mind, Brickner, Harkins and Ostrom (1986) asked college students to provide their reactions to a proposal to require senior comprehensive exams prior to graduation. Those in the high task-involvement condition were told that the proposal was being considered at their school in the upcoming school year. Low-involvement subjects were told that the proposal was being considered at another school or at their own school in six years. Responses were either considered separately or combined as a group. Participants in the low-involvement condition were willing to work only when their responses were identifiable, otherwise they loafed. On the other hand, when subjects thought they were likely to be personally affected by the outcomes, they did not loaf, regardless of the identifiability of their outputs. Interestingly, in a series of three social loafing experiments, Williams and Karau (1991) found that subjects were willing to compensate for co-workers they expected to be either unreliable, unwilling
or unable except when they viewed the task as meaningless, in which case they loafed. These experiments are examined more closely in the "member characteristics" category.

In an effort to establish generalizability of the social loafing construct, George (1992) tested for social loafing among salespeople. The study found instances of social loafing when subjects reported personal feelings of low task meaningfulness, particularly when tasks had low visibility. But even in cases where task visibility was high, social loafing occurred when respondents experienced low task meaningfulness. On the other hand, social loafing was reduced in both low and high task visibility situations when the salespeople reported feelings of high task meaningfulness.

**Task Attractiveness:** In one study, task attractiveness was identified as a determinant of productivity (Zaccaro, 1984). As such, social loafing occurred in conditions of low task attractiveness while a social enhancement effect occurred as four-person groups outperformed two-person groups. However, it is difficult to determine what aspect of attractiveness accounted for the difference in performance. High attractiveness was manipulated in two ways. First, the subjects in this condition were given a cover story regarding the need to explain the causes of the
recent decline in the American workforce. Second, these subjects were told the high scoring group would receive extra points. Given the analysis presented, it is impossible to determine whether the cover-story, the incentive of extra points or both acted together to motivate greater levels of performance.

Creativity Requirement of Task: A large percentage of social loafing experiments incorporate a brainstorming task which requires subjects to generate as many ideas as possible for some object, often a knife (Harkins and Petty, 1982; Harkins and Jackson, 1985; Shepperd and Wright, 1999; and Williams and Karau, 1991). Evidence suggests that asking for quality of brainstorming ideas rather than quantity may eliminate the occurrence of social loafing. To this end, subjects with either shared or sole responsibility were also placed in conditions of “quantity” instructions and “quality” instructions (Bartis, Szymanski and Harkins, 1988). When quantity was requested, individuals in the shared responsibility condition loafed, generating significantly fewer ideas than those in the sole responsibility condition, as is consistent with “typical” social loafing experiments. However, when subjects were asked to generate creative uses for a knife, there was no reliable difference in the number of uses generated between
the sole responsibility and shared responsibility conditions. Thus, social loafing did not occur.

**Decision vs. Opinion Task:** Another comparative study was done to focus on differences in productivity when individuals are asked to form an opinion versus when making a decision (Price, 1987). The author measured cognitive effort through the recall of stimulus material. The identifiability of the group members had an impact only when they were asked to express an opinion, not when they were requested to make a decision. That is, when subjects were asked to make a decision, they read the material that was presented to them more carefully, allowing them to recall information about it more successfully. The opportunity to make a decision resulted in higher performance and less social loafing even when individual effort could not be identified; whereas, individuals asked to simply form an opinion about the material were likely to loaf when their efforts could not be distinguished. Price (1987) suggests that the decision-making task may operate in much the same manner as increasing task difficulty, uniqueness of contribution or meaningfulness of the task, all of which have been found to moderate social loafing.
Table 2.

Task Characteristics in Social Loafing Research

<table>
<thead>
<tr>
<th>Author</th>
<th>Task Characteristic</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harkins &amp; Petty, 1982</td>
<td>Difficult tasks</td>
<td>Unique or Difficult tasks reduced/eliminated loafing.</td>
</tr>
<tr>
<td></td>
<td>Unique contribs</td>
<td></td>
</tr>
<tr>
<td>Jackson &amp; Williams, 1985</td>
<td>Complex computer mazes</td>
<td>Ss who worked collectively did better on difficult mazes.</td>
</tr>
<tr>
<td>Brickner, Harkins &amp; Ostrom, 1986</td>
<td>High vs Low Involvement</td>
<td>Ss personally affected by outcomes did not loaf.</td>
</tr>
<tr>
<td>Williams &amp; Karau, 1991</td>
<td>Task Meaningfulness</td>
<td>Ss compensate for others except when viewed as meaningless.</td>
</tr>
<tr>
<td>George, 1992</td>
<td>Task Meaningfulness</td>
<td>Ss loafed when experienced low task meaningfulness.</td>
</tr>
<tr>
<td>Zacarro, 1984</td>
<td>Task Attractiveness</td>
<td>Task attractiveness moderated loafing in groups of 2 to 4.</td>
</tr>
<tr>
<td>Bartis, Szymanski &amp; Harkins, 1988</td>
<td>Brainstorming Creativity</td>
<td>Ss generating creative uses for knife did not loaf while those told to generate as many as possible did loaf.</td>
</tr>
<tr>
<td>Price, 1987</td>
<td>Decision vs. Opinion</td>
<td>Ss recalled better when asked to make a decision; loafed when asked to form an opinion.</td>
</tr>
</tbody>
</table>

Member Characteristics

An established approach to social loafing research is a focus on some characteristic of the participant and/or his expectations of the co-worker(s) for the experimental task. In general, researchers have found that what subjects perceive about their co-worker will either enhance or impair their own performance (Salancik and Pfeffer, 1978). Individual attitudes may impact motivation to perform.
They may also impact how people perceive co-workers, which, in turn, influences their motivation to perform. This literature is summarized in Table 3.

**Task Commitment:** In a study aimed at discovering a link between task attractiveness and social loafing, an investigator was able to identify group members that were highly committed to the task (Zaccaro, 1984). Subjects that were in the high attractive condition were also more likely to be highly committed to the task, according to survey data collected. Group members that were highly committed to the task significantly outperformed those who were less committed.

**Interpersonal Trust:** In the first of three experiments, Williams and Karau (1991) hypothesized that levels of trust would determine whether or not social loafing or social compensation would occur. All participants worked either collectively or coactively on an idea generation task designed to be viewed as meaningful. Levels of trust were highly correlated with levels of social loafing. Low trusters were more productive working collectively perhaps because "they would tend to expect others to loaf and would feel compelled to work harder. . ." (Williams and Karau, 1991). It was argued that high and medium trusters loafed
because they "trusted" group members to carry the weight on the group task.

**Expectations of Co-worker Effort:** Studies that have manipulated expectations of co-worker performance are at odds with each other. Jackson and Harkins (1985) suggest that participants will match co-worker effort because they seek equity in effort when working together. Even when performance was individually identifiable, participants matched expected low performance levels—they loafed. But they did not loaf when co-workers were expected to try as hard as possible.

According to Kerr (1983), on the other hand, participants faced with a co-worker of equal ability will opt to either match or lag behind the co-worker's performance depending upon expectations of co-worker effort. If the co-worker is expected to perform poorly, the subject will feel exploited and will refuse to play the role of the "sucker." However, when the co-worker is expected to perform well, the participant may take the opportunity to "free-ride," allowing the co-worker to achieve success for the group. In partial agreement with Kerr's (1983) findings, Williams and Karau (1991) found that participants loafed with a co-worker who intended to work hard. However, they found that participants were willing to compensate for
one who did not. Perhaps these participants did not resent being “suckers” because the task in their experiment was “designed to be viewed as meaningful.”

**Expectations of Co-worker Ability:** Co-worker ability was important to participants only when the task itself was perceived to be meaningful (Williams and Karau, 1991). In a manipulation of both expected co-worker ability (high or low) and task meaningfulness (high or low), if participants were not convinced of the significance of the task, then they chose to socially loaf regardless of their co-worker’s ability.

Table 3.

**Member Characteristics in Social Loafing Research**

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Member Characteristic</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zaccaro, 1984</td>
<td>Task Commitment</td>
<td>Highly committed group members outperformed less committed.</td>
</tr>
<tr>
<td>Kerr, 1983</td>
<td>Co-worker Expectations</td>
<td>Loafing occurs if Ss believe a capable group member is free-riding.</td>
</tr>
<tr>
<td>Jackson &amp; Harkins, 1985</td>
<td>Co-worker Expectations</td>
<td>High expectations of co-worker efforts eliminated loafing.</td>
</tr>
<tr>
<td>Williams &amp; Karau, 1991</td>
<td>Interpersonal trust</td>
<td>High and medium trusters loafed on brainstorming task.</td>
</tr>
<tr>
<td></td>
<td>Co-worker Expectations</td>
<td>Ss loafed with co-worker who expressed intent to work hard.</td>
</tr>
<tr>
<td></td>
<td>Co-worker Ability</td>
<td>Ss loafed with high-ability co-worker; compensated for a low-ability co-worker, unless task was viewed meaningless.</td>
</tr>
</tbody>
</table>
Evaluation

Another line of social loafing research attempts to explain the phenomenon through the manipulation of internal and external evaluation potential (Stevenson, 1989). Evaluation research most often focuses on three potential sources of evaluation: the experimenter, the co-actor(s), and the participants themselves. These sources of evaluation correspond with Breckler and Greenwald’s (1986) three significant evaluative audiences which give rise to motivational facets of self: the public self, the collective self and the private self. In general, for evaluation to be possible, subjects must have access to some measure of output and some sort of standard against which this output can be compared (Szymanski, 1991). For example, in a common social loafing task, brainstorming, output might be the number of uses generated for a kitchen knife. A standard for comparison might be the number of uses generated by others in the group. According to evaluation theory, when one or both pieces of information are missing, loafing is likely to occur. That is, social loafing occurs because participants’ outputs cannot be evaluated by the experimenter, the co-actor(s) or by the participants themselves (Harkins, 1987; Szymanski and Harkins, 1987;
Harkins and Szymanski, 1989). This literature is summarized in Table 4.

Experiment as Evaluator: In "traditional" loafing research, it is argued that the experimenter is the "critical source of evaluation" (Harkins and Szymanski, 1989). When task responsibility is shared, the subjects believe the experimenter cannot determine one's contribution to the task output. However, when the task responsibility is not shared, the experimenter can evaluate productivity. In most cases, a manipulation check confirms whether or not the experimenter was able to evaluate performance. This potential for experimenter evaluation is sufficient to eliminate the loafing effect (Harkins and Szymanski, 1988).

Self as Evaluator: Other evaluation research studies analyze the potential for participants to evaluate themselves. Szymanski and Harkins (1987) found that the self-evaluation was sufficient to eliminate the loafing effect. When the participants could evaluate themselves against an objective standard, the number of signals presented in a vigilance task, they did not loaf. The following year, the researchers (Harkins and Szymanski, 1988) asked participants to generate as many uses as possible for a common knife. Outputs were either pooled or collected separately. Crossed with this manipulation of
task responsibility, one-third of the pairs were told they would be confidentially informed as to how many uses had been generated on average in a previous version; one-third were told their experiment was a replicate, but they could not be given the average from the previous experiment because it could affect the performance of later participants; and one-third were told nothing about the previous experiment. The social loafing effect was eliminated when participants knew that they would be given the average performance from the previous experiment. That is, under conditions where a social standard was provided to which participants could compare their own performance, pooled subjects with shared task responsibility generated as many uses as those whose outputs were individually identifiable due to having sole task responsibility.

Harkins and Szymanski (1988) extended this research using a vigilance task in which participants could evaluate themselves by comparing their performance to an objective standard rather than a social standard. Again, the potential for self-evaluation was found sufficient to eliminate the loafing effect.

Low task attractiveness, however, appeared to outweigh the potential for self-evaluation in one study. Zaccaro (1984) allowed group members to interact visually and
verbally while working independently on a group-assigned task--generating as many "moon tents" as possible. Each member was able to compare their performance to each other group member. Despite this identifiability and potential for self-evaluation, social loafing occurred in conditions of low task attractiveness.

**Group as Evaluator:** A third type of evaluation research with regard to social loafing has its focus on the potential for groups to evaluate their performance (Harkins and Szymanski, 1989). Goethals and Darly (1987) argue that in addition to a concern about how one's group stacks up against other groups, group members could be concerned about gaining information regarding how well one's group does at various tasks, presumably so that it might function more effectively. In two experiments, Harkins and Szymanski (1989) tested whether the potential for group evaluation would moderate social loafing behaviors, first using an optimizing task and then using a maximizing task. In each case, participants in pooled groups acknowledged that the experimenter could evaluate their group's performance, but nonetheless worked harder only when they could evaluate their group's performance.

In their discussion of sources of evaluation, Breckler and Greenwald (1986) refer to groups composed of
coworkers, religious organizations, clubs, athletic teams and family groups. In contrast, it is important to note, as Harkins and Szymanski (1989) emphasize, that though the groups used in social loafing experiments are composed of strangers and are temporary in nature, the very possibility of group evaluation is sufficient to motivate group performance and eliminate social loafing effects.

**Evaluation with Rewards and Punishments:** One might argue that in social loafing research, the experimenter has little power over the groups' outcomes. Most studies utilize student volunteers who have little at stake in their participation. Perhaps an experimenter who has more power over the groups' outcomes in terms of punishments or rewards may have a greater effect on performance of the group.

A few social loafing studies test for the specific effects of incentives and punishment threats. For example, Shepperd and Wright (1989) gave participants either the sole responsibility or shared group responsibility for generating ideas for uses of a knife. Half were offered a modest incentive for a "best" (individual or group) effort, while the rest were not. When the extra incentive was not provided, loafing was obtained. However, when the extra incentive was made available, loafing was diminished (though not eliminated). Hence, Shepperd and Wright (1989)
concluded that anonymous group members will not reduce efforts when there is sufficient justification for a high level of effort.

Miles and Greenberg (1993) utilized punishment threats in the social loafing paradigm. Intact groups were formed using subsets of swim team members. Half of the participants were told the number of penalty laps they would swim if they failed to meet or exceed the stated goal time. Half were told the number of penalty laps they would swim if the entire relay team failed to meet or exceed the stated goal time. Punishment threats were either severe, moderate or none. Results suggested that punishments may be more effective in bringing about desired behavior when it threatens all group members for undesirable behaviors than when it threatens only the individual acting undesirably. Additionally, the authors make particular note of the evidence that social loafing does appear to occur even in contexts, in which participants' ongoing task-oriented relationship with others may be expected to "predispose them to avoid loafing" (Miles and Greenberg, 1993).
Table 4.
Evaluation in Social Loafing Research

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Form of Evaluation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zaccaro, 1984</td>
<td>Self-Evaluation</td>
<td>Potential to evaluate performance against others did not eliminate loafing with unattractive tasks.</td>
</tr>
<tr>
<td>Szymanski &amp; Harkins, 1987</td>
<td>Self-Evaluation</td>
<td>Self-evaluation against an objective standard eliminated loafing when brainstorming.</td>
</tr>
<tr>
<td>Harkins &amp; Szymanski, 1988</td>
<td>Self-Evaluation</td>
<td>Self-evaluation against a social standard eliminated loafing when brainstorming.</td>
</tr>
<tr>
<td>Harkins &amp; Szymanski, 1989</td>
<td>Group-Evaluation</td>
<td>Allowing a group to evaluate its performance eliminated loafing effects.</td>
</tr>
<tr>
<td>Shepperd &amp; Wright, 1989</td>
<td>Evaluation with Rewards</td>
<td>Loafing was reduced when extra incentives were offered.</td>
</tr>
<tr>
<td>Miles &amp; Greenberg, 1993</td>
<td>Evaluation with Punishment threats</td>
<td>Loafing effects reduced when Ss faced punishment.</td>
</tr>
</tbody>
</table>

The above portion of the literature review clearly identifies four different categories of moderating variables shown to reduce the effects of social loafing. As illustrated in the Figure 1, cultural diversity is best characterized as a member-characteristics moderator. The following attempts to provide a theoretical basis for the notion that the representation of different cultures within a group may serve as a moderator of social loafing.
Figure 1. Model of Social Loafing Moderators
Cross-Cultural and Diversity Research with Implications for Social Loafing

With the advent of an increasingly diverse labor market, together with a growing reliance on teams as a means of obtaining organizational goals and objectives, the relevance of social loafing and culture is apparent. Up to this point, all of the social loafing research discussed has taken place in the United States. Studies on culture suggest that one reason social loafing occurs may be due to cultural norms in American society (Triandis, 1972; Hofstede, 1980; Bandura, 1986). Yet, it could be argued that there are no generically "American" cultural norms in a society that includes people from hundreds of foreign lands. Therefore, there may be a dominant, or majority culture -- Anglo-American, and many other subcultures. The following section explores cultural diversity, its roots and its role as a possible moderator of social loafing.

Cultural Traits

Kluckhohn (1954) simply defined the study of culture as "the study of regularities distinctive of the group in question." One point of view suggests that these regularities are internalized (Parsons, 1951). Another view suggests that they are a function of situational normative
pressures (LeVine, 1973). That is, culture is an organized body of rules, recognized by all, that "operate to limit the range of variation in patterns of communication, belief, value and social behavior in a population" (LeVine, 1973, pp. 4-5).

Probably the most widely known study of culture is that of Hofstede (1980) in which he collected data from 53 countries. He identified several distinct dimensions that helped explain value differences between countries. The most relevant of these to social loafing is what Hofstede termed individualism-collectivism. According to Hofstede, people from collectivist societies such as those found in West Africa, Latin-America and Asia focused on group orientations. Those from highly individualistic countries, such as the US and Australia, focused on self-orientations. These distinctions were first introduced by Parsons and Shils (1951) in terms of self-orientation (or focus on ego-integrative morals) versus a collective-orientation (or focus on the social system.) Other researchers use collaterality versus individualism (Kluckhohn and Strodtbeck, 1961) and cooperation versus individualism (Mead, 1967).

Over the years, research has led to some basic generalizations regarding the characteristics of
collectivistic versus individualistic societies. In general, individuals in a collectivistic society value harmony and cooperation. They share a willingness to subordinate personal interests for the welfare of the group (Triandis et al., 1985; Wagner and Moch, 1986). A willingness to make personal sacrifices in order to help others was expressed by subjects from collectivist cultural backgrounds to a greater extent than those from individualistic backgrounds (Botempo, Lobel and Triandis, 1990). Group members understand his/her role and responsibility for group success and survival (Triandis, 1988). Researchers have found that collectivists are willing to shoulder the burden of group members who may fail or who take advantage of them (Ho, 1978; Hofstede, 1980).

Individualistic societies, on the other hand, emphasize self-sufficiency and control. Value and satisfaction are derived from personal achievement. Individual goals are the focus, whether or not they are consistent with those of the group. In fact, research has shown that individualists may often "drop out of in groups if membership becomes a burden or inhibits the attainment of individual goals" (Triandis, 1988). Other comparisons indicate that where collectivists may avoid confrontation that may disrupt the group, confrontation is acceptable to individualists when
differences of opinion occur (Triandis, Betancourt, Iwao, Leung, Salazar, Setiadi, Sinha, Touzard, Zaleski, 1993; Triandis, Brislin and Hui, 1988).

Collectivistic tendencies have been shown in traditional Greeks (Triandis, 1972), east and west Africans (Kwasi, 1980), Chinese (Hsu, 1981; Bond and Fargas, 1984), Latinos (Abrahams, 1983) and Japanese (Adler, 1986). Individualistic leanings have been identified in Americans, Australians and northern and western Europeans (Inkeles, 1983; Triandis, 1988). Many of these and other studies use cooperation and competition as strong, consistent correlates of collectivism and individualism. In an exhaustive review of cross-cultural studies and groups, Leon Mann (1988) revealed that cooperation under group rewards appears universal. However, only those cultures that emphasize the value of cooperation maintained cooperative behaviors when promises of individual rewards were supplied (e.g., the Mexican village, the Israeli kibbutz, the Arab village, the Korean village, tribalized Blackfoot Indians and Australian aborigines). In stark contrast, promises of individual rewards led to "competitive and non-adaptive behavior" in the US, Israel, Canada and New Zealand.

Relatively few studies have focused attention on subcultures within the United States. However, there is
evidence that Hispanic-Americans (Kagan, 1977; Triandis, Marin, Hui, Lisansky and Ottati, 1984; and Marin and Triandis, 1985), African-Americans (Kochman, 1981; Foeman and Pressley, 1987; and Washington, 1987), and Asian Americans (Triandis, McCusker, and Hui, 1990) behave consistently with their collectivistic heritage. Likewise, Anglo-Americans demonstrate individualism in line with the Euro-Anglo tradition (Cox, Lobel and McLeod, 1991; Cox, 1993). For example, in a Prisoners Dilemma task, Cox et al. (1991) found that at the individual level, Asians, Blacks and Hispanics demonstrated significantly more cooperative and collectivistic orientations than their Anglo-American counterparts. Furthermore, these minority ethnic groups did not differ significantly from each other on this dimension.

In cross-cultural comparisons, Mexican-American children have displayed a "concern for group enhancement and/or altruism" and a cooperative motivation, while the Anglo-American children in the study showed concern for superiority and/or rivalry (Kagan, 1977). Further, researchers have concluded that Mexican-American children appear to resist the pressures to acculturate over time (Kagan, 1977; Mann, 1980).

In similar studies, African-American children have demonstrated significantly greater tendencies toward
cooperation rather than competition (Kagan and Madsen, 1971; Richmond and Weiner, 1973; Johnson and Johnson, 1994). African-American adults have been described as showing a sense of community with a strong group identification (Kochman, 1981; Weber, 1985), and a high priority on "collective responsibility" (Sitiran and Cogdell, 1976; Foeman and Pressley, 1987).

**Diversity**

While cross-cultural research contributes significantly to our understanding of cultural differences, it does little to help explain inter-cultural behavior. Given the fact that diversity in the work force is often cited as one of the primary reasons for the research, it is clear that research using diverse groups is the logical next step.

Early diversity research focused primarily on the comparisons of homogeneous and heterogeneous groups (Shaw, 1981). Heterogeneity was defined in terms of a single characteristic, such as ability (Goldman, 1965; Laughlin, Branch and Johnson, 1969), age (Ziller and Erline, 1958), decision-making approaches (Ghiselli and Lodahl, 1958), sex and personality profiles (Hoffman and Maier, 1961). Heterogeneous groups on the dimensions of personality and gender produced higher quality problem solutions on several problem types than did homogeneous groups (Hoffman and
Maier, 1961). Groups (dyads) that were heterogeneous in terms of social attitudes produced more original and practical solutions to various social problems when groups were homogeneous in terms of their ability to generate ideas (Triandis, Hall and Ewen, 1965).

Heterogeneity in terms of such demographic variables as age, organizational tenure, education and functional area has been studied within top management teams. Those firms with management teams that included members who were similar in these areas were less adaptive than those whose management teams were heterogeneous (Murray, 1989). Innovation has also been reported to positively correlate with heterogeneity in top management teams (Jackson, Brett and Sessa, 1991).

Overall, heterogeneous groups performed at least slightly better, if not significantly better than homogeneous groups (Goodman, Rackin and Arsote, 1986). Shaw's (1981) review concluded that group activities requiring a variety of skills and knowledge are more effective when the group is heterogeneous because the variety of skills and information necessary are more likely to be available. Research has shown that heterogeneity can be a significant source of innovation, creativity and
quality solutions (Watson, Kumar and Michaelsen, 1993; Triandis, Hall and Ewen, 1965; Ling, 1990; Cox, 1993).

Race-based or culture-based diversity research began to emerge in the 1960s. The results are mixed. Fiedler (1966) compared "homocultural" groups of either French-speaking men or Dutch-speaking men to "heterocultural" groups composed of either a French-speaking leader with two Dutch-speaking followers or a Dutch-speaking leader with two French followers. The language differences did correlate highly with cultural differences. Yet, there were only small differences in performance. Anderson (1983) also examined leader behavior and effectiveness under conditions of wide variations in cultural (ethnic) work group composition in New Zealand. As many as five (often antagonistic) ethnic populations were represented. Results indicated that cultural heterogeneity within the work group had no effect on leader behavior or effectiveness.

When testing for performance effects, Ruhe (1972) found no differences between racially diverse and homogeneous groups. However, other studies have lead researchers to conclude that racial diversity actually inhibited group performance (Fenelon and Megargee, 1971; Ruhe and Allen, 1977). For example, Shaw (1981) suggested that, based on research conducted in the 1960s and 1970s, racially mixed
groups experience increased tension that make interaction
less effective and performance less efficient. Ruhe and
Allen (1977) found that both all-black and all-white
homogeneous groups outperformed racially mixed groups on a
ship-routing task.

Other studies have shown a group performance
enhancement effect as a result of racial diversity (Ruhe and
Eatman, 1977). Of the more recent research efforts examining
cultural diversity, the bulk of the studies include a
comparison of all-Anglo homogeneous groups to multicultural
heterogeneous groups (Watson et al., 1993; Cox, 1993; Cox et
al., 1991). Cox (1993) reported the results of an
unpublished study by Cox, Lobel and McLeod of ethnic
diversity and creativity. Diverse groups of Asians, Blacks,
Anglos and Hispanics were compared to homogenous groups of
Anglos. The results indicated that the quality of ideas
generated during a brainstorming task was significantly
higher for the diverse groups. On average, the ethnically
diverse groups generated ideas rated eleven percent higher
on both feasibility and overall effectiveness.

The expression of diverse or minority viewpoints
appears to be key in the ability of heterogeneous groups to
perform well. When minority views were expressed, Maier and
Solem (1952) found that the number of correct group answers
increased significantly. Likewise, groups that considered minority views were found to be significantly better at identifying solutions and adopting multiple strategies than other groups (Nemeth, 1986). These groups were also credited with more fully evaluating their assumptions and the consequences of their decisions.

The inconclusive nature of these results may be due, in part, to the "one-shot" nature of the studies. Watson and colleagues (Watson and Kumar, 1992; Watson et al, 1993; Watson, Johnson, Kumar, and Critelli, 1996; Watson, Johnson and Heller, 1996) have attempted to address this issue with a series of longitudinal studies comparing the performance and group orientation of culturally non-diverse and culturally diverse groups over a four-month period. The diverse groups included Anglo-Americans, African-Americans, Hispanic-Americans and foreign nationals; while the non-diverse groups were all Anglo-Americans.

Watson et al. (1993) suggested that these groups were more unified because they were on-going intact work groups involved in a wide-range of group activities during the four months. Consistent with previous findings (Watson and Kumar, 1992) the homogeneous groups reported significantly higher quality solutions and effective processes after the
first month. The diverse groups reported difficulty in agreeing on what was important and in working together. After the second month, while the homogeneous groups scored better in overall performance, the two groups scored about the same in generating a range of perspectives and multiple alternatives.

For the third and fourth months, overall performance was the same for both the diverse and homogeneous groups. This time, the diverse groups performed significantly higher on range of perspectives and multiple alternatives generated. Homogeneous groups scored higher on quality of solutions.

In another study, (Watson et al., 1996) non-diverse groups reported significantly more team-oriented behaviors than the culturally diverse groups over the first thirteen weeks of the study. However, by the end of seventeen weeks, the culturally diverse and non-diverse groups reported no significant differences in terms of team-oriented behaviors.

Taken together, Watson and colleagues have consistently found that multicultural groups often experience problems early on due to process difficulties with communication, expectations, dislike, mistrust and cohesion. More
importantly, they conclude that with time and feedback, culturally diverse groups can overcome some of the barriers of communication and integration, rapidly improve performance and begin to utilize their diversity advantage (Watson, Johnson, and Heller, 1996).

Table 5.

Summary of Diversity Literature

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Diversity</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoffman &amp; Maier, 1961</td>
<td>Personality, Gender</td>
<td>Heterogeneous groups produced higher quality solutions.</td>
</tr>
<tr>
<td>Triandis, Hall &amp; Ewen, 1965</td>
<td>Social Attitudes</td>
<td>Heterogeneous groups produced more original and practical solutions.</td>
</tr>
<tr>
<td>Fiedler, 1966</td>
<td>Culture</td>
<td>Small differences in leader performance in hetero-and homo-cultural groups.</td>
</tr>
<tr>
<td>Ruhe &amp; Allen, 1972</td>
<td>Race</td>
<td>No differences found.</td>
</tr>
<tr>
<td>Ruhe &amp; Allen, 1977</td>
<td>Race</td>
<td>All-black &amp; all-white groups outperformed mixed groups.</td>
</tr>
<tr>
<td>Shaw, 1981</td>
<td>Race</td>
<td>Tension in mixed groups lead to lower performance.</td>
</tr>
<tr>
<td>Anderson, 1983</td>
<td>Culture</td>
<td>No effect on leader behavior or effectiveness.</td>
</tr>
<tr>
<td>Murray, 1989</td>
<td>Demographics</td>
<td>Heterogeneous top management teams were more adaptive.</td>
</tr>
<tr>
<td>Jackson, Brett &amp; Sessa, 1991</td>
<td>Demographics</td>
<td>Heterogeneous top management teams were more innovative.</td>
</tr>
<tr>
<td>Watson &amp; Kumar, 1992</td>
<td>Culture</td>
<td>Homogeneous groups had higher quality solutions and better interaction.</td>
</tr>
</tbody>
</table>
Table 5, continued

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Diversity</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cox, 1993</td>
<td>Culture</td>
<td>Ideas by diverse groups rated higher on quality, feasibility and overall effectiveness</td>
</tr>
<tr>
<td>Watson, Kumar &amp; Michaelson, 1993</td>
<td>Culture</td>
<td>No differences in overall performance after 4 months; diverse groups performed higher on range of perspectives and multiple alternatives.</td>
</tr>
</tbody>
</table>

**Diversity and Social Loafing Research**

To date, there are no studies which examine both cultural diversity and social loafing in a small group setting. The study reported above (Cox, 1993) using diverse and homogeneous groups to compare the creativity of ideas generated by the two groups is most similar to the study mentioned earlier by Bartis, Szymanski and Harkins (1988). Bartis et al. found no evidence of social loafing when subjects were asked to generate creative uses for a knife rather than generating as many uses as possible. However, Cox's study did not explicitly test for social loafing effects. Therefore, what we know about social loafing and
diversity can only be extracted from the cross-cultural research that we have, as described in the following.

Social loafing is known to vary significantly across cultural settings (Harcum and Bandura, 1990). However, results from early cross-cultural studies were inconsistent as to the moderating effects of culture on social loafing. For instance, in the first of a series of cross-cultural social loafing studies, Gabreyna, Latane and Williams (1981) identified “social striving” (Kerr and Bruun, 1981) in the group-based performance for Taiwanese and Hong Kong students attending college in the United States. These subjects performed better when in groups with shared responsibility than when they had sole responsibility for task performance. They fully expected similar results among Taiwanese school children in Taiwan. However, in an attempt to replicate the clapping and shouting task experiments conducted by Latane, Williams and Harkins (1979), Gabreyna, Latane and Wang (1983) found evidence of social loafing rather than striving. In a subsequent study, the researchers changed the task to a counting task and found no evidence of social loafing among the Chinese participants. Indeed, performance was better under shared responsibility conditions than under sole responsibility conditions (Gabrenya, Wang and Latane, 1985). The authors suggested
that perhaps the sound production tasks were not sensitive to group-oriented culture differences.

Collectivistic tendencies of Japanese students was argued to be responsible for the superior performance of individuals working in groups compared to that of those working alone (Matsui, Kakuyana and Onglatco, 1987). Likewise, collectively-oriented individuals did not exhibit social loafing in a cross-cultural study of 48 American managers and 48 Chinese managers (Earley, 1989). However, in this study, the researcher found no significant relationship between the country variable and performance. Collectively-oriented Americans did not loaf, but individualistically-oriented Chinese did. Individualists performed better if they were held accountable, whereas collectivists performed comparably well regardless of their accountability. In a sample of 569 managers from 80 firms, Viega (1991) revealed that highly collectivistic people performed better under conditions of high shared responsibility, regardless of accountability.

Research Model and Proposed Hypotheses

Based on the literature, the research model below is proposed. The independent variables are group composition and task performance responsibility. Social loafing
occurs in the shared task responsibility condition. When present, group members are more productive when working alone than with a group. As the model indicates, this study examines cultural diversity as a means of reducing social loafing, and thereby enhancing performance. Group composition is manipulated by the racial/ethnic makeup of the group. Culturally diverse groups will contain representatives from three or more different racial/ethnic groups, including African-Americans, Hispanic-Americans, Asian-Americans, Native Americans and foreign nationals. Culturally homogeneous groups will contain all Anglo-American members. The dependent variable is performance, measured by the number, utility and uniqueness of brainstorming ideas generated.

![Figure 2. Research Model](image-url)
Group Orientation Hypotheses

It is important to determine if the group members in this study demonstrate cultural tendencies consistent with the research on individuals from various cultural backgrounds. The literature suggests that, in general, African-Americans, Hispanic-Americans and Asian-Americans are collectivistic in nature, while Anglo-Americans are more individualistic (Cox, Lobel and McLeod, 1991; Cox, 1993). But where groups are truly multicultural, containing individuals from at least three different ethnic/racial backgrounds, including Anglo-Americans, attitudes and behaviors may vary. A number of studies have indicated inconsistencies. Watson and colleagues found that, at least early on, non-diverse, Anglo groups were significantly more team-oriented in their behaviors than diverse groups (Watson and Kumar, 1992; Watson et al, 1993; Watson, Johnson, Kumar, and Critelli, 1996; Watson, Johnson and Heller, 1996). The following two hypotheses will test group orientation in terms of reported behavior on a group style description instrument and philosophical outlook in terms of collectivistic preferences. The groups in this study are expected to respond in similar manner as those in mixed-group diversity studies.
**Hypothesis 1a:** Culturally homogeneous groups will score higher on team-emphasis than culturally diverse groups.

**Hypothesis 1b:** Culturally homogeneous groups will score higher on the collectivism scale than culturally diverse groups.

**Diversity Hypotheses**

Organizations often report higher levels of productivity as a direct benefit of the integration of employees from a wide variety of racial and ethnic backgrounds in the workplace (Copeland, 1988a, 1988b, Maznevski, 1994). In addition, creativity and innovation are often listed as two other benefits of cultural diversity in organizations (Copeland, 1988; Cox and Blake, 1991). Culturally diverse groups provide a variety of perspectives not found in homogeneous groups. Different points of view may allow diverse groups to generate innovative alternatives that are more useful to the organization. However, it is far from evident that overall performance or productivity of culturally diverse groups is superior to that of nondiverse groups. Unpublished results reported by Cox (1993) revealed that while culturally diverse groups generated higher quality solutions, they did not produce more ideas than the culturally homogeneous, Anglo groups. Therefore, it is expected that the culturally diverse groups in this study
will outperform the culturally homogeneous groups in terms of the utility and uniqueness of the ideas generated, but homogeneous groups will produce more ideas.

**Hypothesis 2:** Culturally homogeneous groups will generate significantly more ideas on the brainstorming task than culturally diverse groups.

**Hypothesis 3:** Culturally diverse groups will generate more unique, or unusual ideas on the brainstorming task than homogeneous groups.

**Hypothesis 4:** Culturally diverse groups will generate significantly more useful ideas on the brainstorming task than homogeneous groups.

**Social Loafing Hypotheses**

Social loafing is tested by comparing the performance of groups working under a shared responsibility condition to that of groups working under a sole responsibility condition. When working in groups under a shared responsibility condition, group members can receive neither credit nor blame for their efforts. It is this lack of identifiability that has been blamed for the reduction in effort that leads to social loafing (Latane, Williams and Harkins, 1979; Williams, Harkins and Latane, 1981; Weldon and Mustari, 1988). No differences in performance indicates a lack of social loafing; greater group
performance in the shared condition is demonstrative of social striving.

Hypothesis five tests for differences on performance between members of culturally diverse groups whose ideas were combined or pooled in a shared responsibility condition to those whose ideas were kept separate in a sole responsibility condition. People who come from collectivistic societies such as China (Earley, 1989; Gabrenya, Latane and Williams, 1981, 1985), Taiwan (Gabrenya, Latane and Williams, 1981) and Japan (Matsui, Kakuyama and Onglatco, 1987) have demonstrated superior performance when their efforts were pooled than when they worked alone (Viega, 1990). Though social loafing studies have not been conducted with African-Americans or Hispanic-Americans, they have been shown to prefer cooperative efforts over competitive ones (Foeman and Pressley, 1984; Triandis et al., 1984). In addition, while culturally diverse groups may be less group-oriented than their non-diverse counterparts (as suggested in hypothesis 1a), they still may exhibit enough team orientation to overcome social loafing. Therefore, it would be expected that these culturally diverse groups would behave similar to those collectivistic groups with regard to social loafing.
Hypothesis 5: Culturally diverse groups will generate as many ideas on the brainstorming task under conditions of shared responsibility as sole responsibility.

Hypothesis six tests for differences in idea-generating performance between members of culturally homogeneous groups working under shared conditions to those working alone. Studies of intact, ongoing project teams (like the ones in this effort) indicate that non-diverse groups exhibit a greater team orientation than culturally diverse groups (Watson et al, 1993). A high level of group-orientation might suggest that these groups would be less likely to exhibit social loafing behaviors whether group members shared performance responsibility or not. However, Miles and Greenberg (1993) identified social loafing among swim team members despite their ongoing, task-oriented relationships that would otherwise “predispose them to avoid loafing.” Further, the vast majority of social loafing research conducted has taken place in the United States. It can be argued that the groups in these studies are similar to the culturally homogeneous groups in this one. Strong evidence suggests that control group members that do not have the benefit of an experimental manipulation will exhibit social loafing.
**Hypothesis 6:** Culturally homogeneous groups will generate more ideas in the brainstorming task under conditions of sole responsibility than shared responsibility.

**Chapter Summary**

This chapter provided a review of the literature on group performance process gains and losses, social loafing and diversity. The first section was a general overview of the current thinking on group performance compared to individual performance. The second section provided a historical review of social loafing research and categorized the current literature into four main research streams. The third section looked at cultural traits of ethnic/racial backgrounds, the evolution of diversity from homogeneous to heterogeneous cultural samples and the role of diversity as a potential moderator of social loafing. Finally, a research model and hypotheses were proposed.
CHAPTER 3
RESEARCH METHODOLOGY

The purpose of this chapter is to provide an in-depth review of each component of the research procedure and methodology of this study. Included in this section is consideration of the research population and sample, experimental design, variable manipulation and measures, reliability and validity issues and statistical analysis.

Research Population and Sample

The sample for this study was made up of upper-level management undergraduate students enrolled in a principles of management course at a large university in the southwestern United States. Three sections of this course provided an original sample of approximately 500 individual subjects. A preliminary power analysis was used to determine the minimum required sample for a 2 x 2 factorial design. In conformance with Cohen (1988), the power will be set at .80 with a medium effect size of .50. Directional hypotheses will have an alpha (one-tailed) level of .05. Given these parameters, the minimum recommended sample size is 50 subjects. When comparing groups, a minimum of 13
groups was required in each of the four cells of the study (Kirk, 1968).

The groups were formed with five to six members each. Group size literature indicates that small groups of approximately five members are "optimal" (Slater, 1958; Hare, 1962; Hackman and Vidmar, 1970). Research indicates that members of groups this size are generally more satisfied with group discussion than members of larger (12/15-person) groups (Hare, 1952). In his review of group-size literature, Hare (1976) finds that as size increases, there is a tendency toward a more mechanical method of introducing information, a less sensitive explanation of the point of view of the other, and a more direct attempt to control others and reach a solution whether or not all group members indicate agreement. Further, "real-life" groups charged with decision-making responsibility generally contain at least five members (Hare, 1976).

Culturally diverse and culturally non-diverse teams were formed through a 2-step process. This process was modeled after the group decision-making and cultural diversity work of Watson and his colleagues (Watson and Kumar, 1992; Watson, Kumar and Michaelsen, 1993). Demographic information (Appendix A) was collected from each student at the beginning of the semester. Students were
pooled based on their race/national origin creating four culturally homogeneous subject groups of Anglo-Americans, African-Americans, Hispanic-Americans and foreign nationals. For the purposes of this study, culturally diverse groups were composed of five or six members from three or more racial/national backgrounds. These diverse groups were formed by randomly assigning one or two individuals from each of the four pools to teams until the non-Anglo pools were exhausted. The remaining Anglo-American subjects were then randomly assigned to culturally non-diverse teams of five or six members. Both diverse and non-diverse teams were balanced in terms of gender.

**Dependent Variable**

**Performance**

Performance was measured in three ways. First, performance was measured by the number of ideas generated on a brainstorming task. Each subject was asked to generate as many ideas as possible for a common household kitchen knife in a 15-minute session. Prior social loafing research consistently used this outcome to test the presence or absence of social loafing (e.g., Harkins and Petty, 1982; Harkins and Jackson, 1985; Brickner, Harkins and Ostrom, 1986; Peterson, Zaccaro and Daly, 1986; Szymanski and

The second measure of performance is the utility and uniqueness of ideas generated. It is possible that subjects may exert high task effort by spending more time trying to think of particularly unique or unusual uses for the object, despite instructions to the contrary. Since culturally diverse groups have been credited with providing a variety of perspectives and innovative alternatives, these measures are of particular relevance in this study. Therefore, all ideas were rated in terms of relative uniqueness and relative usefulness by two independent sets of raters. The ratings for each idea was averaged across raters to create a "uniqueness" weight and a "utility" weight which was applied to the ideas generated by each performer. The sum of each performer's weighted ideas was then divided by the number of ideas they generated to create a "uniqueness index" and a "utility index" (cf. Harkins and Petty, 1982; Stevenson, 1987). Each index will provide an alternative measure of task effort, or performance.
Independent Variables

Group Composition--Cultural Diversity

As detailed above, cultural diversity was manipulated by the formation of culturally diverse and culturally non-diverse groups. Culturally diverse groups are those groups having members from three or more different racial/national backgrounds including Anglo-Americans, African-Americans, Hispanic-Americans and foreign nationals. Non-diverse groups were composed entirely of Anglo-Americans.

Task Responsibility

Groups were randomly assigned to either a sole responsibility or a shared responsibility condition. In the sole responsibility condition, group members were informed that they, alone, were responsible for the work they produced (idea generation). In the shared responsibility condition, subjects were informed that they shared the responsibility with their group members. Social loafing occurs when individuals in the shared responsibility condition exert less cognitive effort than those in the sole responsibility condition (Harkins, Latane and Williams, 1980; Williams, Harkins, Latane, 1981; Harkins and Petty, 1982; Jackson and Williams, 1985; Weldon and Gargano, 1985; Price, 1987; Szymanksi and Harkins, 1987; Weldon and Mustari, 1988; Weldon and Gargano, 1988; Shepperd and
Wright, 1989; Harcum and Bandura, 1990; Williams and Karau, 1991; Miles and Greenberg, 1993).

**Procedure**

Subjects for this study were members of three 50-minute, back-to-back sections of a principles of management course at a large university in southwestern United States. All subjects completed a consent form, as approved by the Office of Research Administration at the University of North Texas (Appendix B). Based on demographic information, subjects were be pooled into Anglo-American and non-Anglo categories. Non-Anglos were randomly assigned to culturally diverse groups. Anglo-Americans were randomly assigned to culturally diverse groups and non-diverse groups. These groups were assigned at the beginning of the term and worked together throughout the semester.

The experiment will took place mid-semester. Though they did not interact during the course of the experiment, the groups did have approximately ten weeks of shared group history. They completed several joint projects which required planning, organizing, and problem solving. In this way, the groups in this study more closely reflect organizational teams.
Subjects were asked to select one 9" x 12" manila envelope from a set of envelopes. The envelopes were marked "Brainstorming Task" (sole responsibility condition) or "Group Brainstorming Task." In the sole responsibility condition, subjects were lead to believe that they were selecting a unique brainstorming object by randomly picking one envelope. In the shared responsibility condition, subjects were told that all members of their group received the same object in their envelope. In actuality, all subjects were asked to generate uses for a knife. The contents of each envelope included: a set of instructions (Appendix C and D) and one hundred slips of blank paper.

Participants in both conditions read the following instructions:

We are interested in studying the performance of groups and individuals on what is called a "brainstorming" task. You will be given the name of an object and your task will be to come up with as many uses for this object as you can. Don't be concerned about the quality of the uses you come up with. The uses can be ordinary or unusual. It is, however, important that you write down as many uses as you can in the time allotted. If you finish before time is called, simply wait quietly.
The next portion of written instructions varied depending on the task responsibility condition. Participants in the *sole responsibility* condition read the following:

I will ask you to write one use on each slip of paper, fold the slip, set it aside and then write the next use on a second slip and so on. At the end of the time period, your ideas will be placed back into the manila envelope you received. It is not important if you happen to come up with the same uses as your group members. I want to see how many uses each of you can come up with. Thus, each of you bears the full responsibility for generating as many uses as you can.

Participants in the *shared responsibility* condition read the following:

I will ask you to write one use on each slip of paper, fold the slip, set it aside, and then write the next use on a second slip and so on. At the end of the time period, your ideas will be combined with your group’s in a single envelope. It is not important if you happen to come up with the same uses as your partners. I want to see how many uses your group can come up with. Thus
you share the responsibility with your partners for coming up with as many uses as you can.

Once it was clear that all subjects understood, they were asked to begin writing their ideas. Participants were given 15-minutes for idea generation, an amount of time determined to be ample for this exercise (Harkins and Petty, 1982; Harkins and Jackson, 1985; Szymanski and Harkins; 1987). At the end of the 15-minutes, all subjects were asked to complete post-experimental questionnaires.

Subjects in the sole responsibility condition were asked to place all materials back into their envelope, including all slips of paper, the post-experimental questionnaire and the instruction sheet. Subjects in the shared responsibility condition placed their brainstorming ideas in a common group envelope marked with their group number. All other materials were placed back in their individual envelope. The experimenter was able to determine how many ideas were generated by each person by counting the number of blank slips in the envelope and subtracting that number from 100. After all materials were collected, subjects were thanked and dismissed. On a following class period, the participants were debriefed as to the purpose of the research and thanked once again for their participation.
Post-Experimental Measures

Group Style Description

Upon completion of the brainstorming task, each subject completed the Group Style Description instrument (Watson, Kumar and Michaelsen, 1992). The 26-item instrument (Appendix E) was designed to identify specific group behaviors that either inhibit or promote effective group problem-solving. A combined score identified groups that interact and process information consistent with a team emphasis (more collectivistic) or an individual emphasis. Watson et al. (1993) used the instrument to assess group processing over time. Their reported reliabilities over four time periods using Cronbach alphas were: time 1, .78; time 2, .76; time 3, .72; and time 4, .79. These reliabilities appear acceptable (Nunnally, 1978).

Collectivism

In addition to the Group Style Description, four questionnaire items will be included to measure collectivism (Appendix F). Earley (1989) used these items to reflect the aspect of collectivism, as defined by Hofstede (1980), that is "relevant for social loafing, namely the pursuit of collective action needed for work-group success." Earley reported a principal-components analysis demonstrating that
all items loaded on a single factor, accounting for 83 percent of the variance and a reliability (Cronbach’s alpha) of .88. It was expected that these items will positively correlate with the team-emphasis items in the Group Style Description instrument.

The items include: 1) Working with a group is better than working alone; 2) One should live one’s life independent of others as much as possible (reverse score); 3) Individuals are responsible for the successes or failures of work groups; 4) Each worker is responsible for the outcomes of his/her company. Responses will be on a 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).

Manipulation Check

In order to verify the task responsibility condition, participants were asked to rate the extent to which they had sole responsibility for the outcome or to which their outputs would be pooled with their group members’. In addition, they were asked to tell how well their group performed and to what extent the experimenter could tell how well their group performed. Each rating scale was anchored by “not at all” (1) and “know exactly” (11) (see Harkins and Szymanski, 1989).
Reliability Issues

As noted above, the Group Style Description instrument (Watson, Kumar, and Michaelsen, 1993) has 26 items which measure the extent to which an individual/team has a team-oriented or individual-oriented emphasis. The instrument is revised from Watson and Michaelsen, (1988) with fewer items to remove redundancy in the series of questions. Their reported reliability over four time periods using Cronbach alphas were: time 1, .78; time 2, .76; time 3, .72; and time 4, .79.

The collectivism items were adapted by Earley (1989) from Erez and Earley (1987). They are conceptually related to Triandis et al.'s (1985) dimension of subordination of personal and in-group goals. Based on Hofstede's (1980) description of individualism-collectivism, Erez and Earley (1987) found the items to discriminate. Using only the collectivism items, Earley (1989) reported a principal-components analysis demonstrating that all items loaded on a single factor, accounting for 83 percent of the variance and a reliability (Cronbach’s alpha) of .88. It is expected that these items will positively correlate with the team-emphasis items in the Group Style Description instrument.
Data Analysis

First, descriptive statistics were used to assure that all data satisfied the assumptions of the regression models. Then, all groups were tested for equivalence in terms of age, gender, and any other factors suspected of a possible effect on the dependent variables. Hierarchical logit regression was used to test each hypothesis. According to Hair, et al. (1992), many researchers prefer logit analysis, even when all assumptions of normality are met, due to its straightforward statistical tests, the ability to incorporate nonlinear effects and its wide range of diagnostics.
Chapter Summary

This chapter consists of a review of the research methodology to be used in this experiment. Over 500 upper-level undergraduates at a large university in the southwestern United States was used for the sample. Approximately 30 culturally diverse groups and 38 culturally non-diverse groups were formed. The study is a 2 (culturally diverse v. non-diverse groups) x 2 (shared v. sole task responsibility) factorial design. Subjects performed a brainstorming task for which they were asked to generate as many ideas for uses of a knife as possible. The dependent variables were performance measured by the number, usefulness and uniqueness of ideas generated. One-half of the subjects in the culturally diverse and non-diverse groups had sole responsibility for idea generation. The remaining one-half were in the shared responsibility condition. The Group Style Description was used to determine the team-emphasis or individual-emphasis of groups. The data was analyzed using logit regression analysis. While the study was conducted in the “tradition” of social loafing research, its greatest weakness is the use of a student sample in an artificial setting.
CHAPTER 4

DATA ANALYSIS AND RESULTS

The data analysis and results of the study are presented in two sections in this chapter. First, the characteristics of the data are presented with preliminary data analysis. Second, the hypotheses are tested and results are presented. Implications and limitations of these results are discussed in Chapter 5.

Data Characteristics and Preliminary Data Analysis

Of the 500 subjects, 384 subjects formed 68 groups (30 diverse, 38 non-diverse) for this study. The remaining 116 subjects were members of all-Anglo, all-male groups and were, therefore, eliminated from the analysis. Diverse groups included 165 subjects; non-diverse groups included 219 subjects. The shared responsibility condition included 16 diverse groups and 20 non-diverse groups. The sole responsibility condition included 14 diverse groups and 18 non-diverse groups. The need for at least 13 groups in each cell of the design, as determined by the preliminary power analysis was still met, even with the elimination of a substantial number of subjects.
The respondents ranged in age from 18 to 55 years. The mean age was 22.7, (s.d. = 4.421). The groups were balanced on gender with 189 (49.2%) males and 195 (50.8%) females. Diverse groups contained 83 men and 82 women; while non-diverse groups included 106 and 113 men and women, respectively. Equality of the culturally diverse and non-diverse groups was determined by comparing the groups in terms of age, gender and course performance using multiple regression analysis. The overall model revealed no significant differences between the two types of groups (F=.225, sig. of F= .879) on these characteristics. Despite randomly assigning groups to experimental conditions, performance varied significantly among the three class sections (F=6.186, sig. of F=.0133). Therefore, "section" was covaried out of all relevant statistical tests, thereby removing its effect.

**Manipulation Check**

In order to verify the experimental condition of task responsibility, the participants were asked to rate the extent to which their performance could be identified. Analysis of variance revealed that the task responsibility condition was believable (F=32.93, sig. of F = .0000). Subjects in the shared responsibility condition reported that the experimenter could not determine how many ideas
they generated (mean = 2.8); while subjects in the alone responsibility condition reported that the experimenter could identify the number of ideas generated (mean = 3.7).

Data Analysis

Logit regression models were used to test each of the six hypotheses. The first two hypothesis tested the team and collectivistic orientation of the culturally diverse and culturally homogeneous groups. Hypotheses two, three and four are characterized as "diversity" hypothesis. The analysis tested for differences between diverse and homogeneous diverse groups on performance, as measured by the number of ideas generated, as well as the uniqueness and usefulness of those ideas (hypotheses two, three and four, respectively). The last set of hypotheses tested for social loafing in the diverse groups (hypothesis five) and the homogeneous groups (hypothesis six).

Group Orientation Hypotheses

Group orientation was measured by a Group Style Description instrument (hypothesis 1a) and a Collectivism scale (hypothesis 1b). As expected, the two instruments were positively correlated with a correlation coefficient of .2551 (p=.0000). Likewise, there was support for both hypotheses which stated that culturally homogeneous groups would score higher on both instruments than the culturally
diverse groups. Homogeneous groups scored slightly higher on the Group Style Description instrument (homogeneous mean=3.53, diverse mean =3.51). The differences between the two groups were stronger in terms of collectivism (homogeneous mean = 3.75, diverse mean = 3.68). In each case, demographic considerations such as age and gender as well as the class section had no significant effect. The results of the two hypotheses are combined in Table 6, below.

Table 6.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyp. la: Group Orient. Diversity (1)</td>
<td>-.2797</td>
<td>.2084</td>
<td>1.8013*</td>
</tr>
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<td>Hyp. lb: Collectivism Diversity (1)</td>
<td>-.3894</td>
<td>.2144</td>
<td>3.2983**</td>
</tr>
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</table>

*p<.1, ** p<.05

Diversity Hypotheses

This set of hypotheses compared the performance of culturally diverse groups and culturally homogeneous groups on a brainstorming task in which the subjects were asked to generate as many uses as possible for an ordinary kitchen knife. There was support for hypothesis two which stated
that the homogeneous groups would generate more ideas than the culturally diverse groups. Subjects in the homogeneous groups generated an average of 30.17 ideas (s.d.=12.08) while their culturally diverse counterparts generated an average of 26.75 ideas (s.d.=12.19). Class section and experimental condition (task responsibility) were entered in the logit regression model in a hierarchical manner in order to covary out any effects they might have had. Table 7 provides the results of the overall model.

Table 7.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S. E.</th>
<th>Wald Statistic</th>
</tr>
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<tbody>
<tr>
<td>Section (1)</td>
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<td>0.2691</td>
<td>8.8324**</td>
</tr>
<tr>
<td>(2)</td>
<td>0.3662</td>
<td>0.2518</td>
<td>2.1152</td>
</tr>
<tr>
<td>Task Responsibility</td>
<td>0.2496</td>
<td>0.2135</td>
<td>1.3661</td>
</tr>
<tr>
<td>Diversity (1)</td>
<td>-0.4212</td>
<td>0.2143</td>
<td>3.8641*</td>
</tr>
</tbody>
</table>
| Overall Model Chi-Square=3.888, Sig.=.0243 *p<.05, **p<.01

For hypotheses three and four, two independent sets of raters evaluated the ideas generated in terms of uniqueness and usefulness. In each case interrater reliability is strong. Interrater r was .85 for uniqueness and .87 for usefulness. The rater's scores were averaged to provide a uniqueness or usefulness score for each idea. The mean
scores were then applied to the original list of ideas generated by each group. A group score was then determined by averaging the scores for each group. There was no support found for either hypothesis, which predicted that culturally diverse groups would outperform culturally homogeneous groups on these two dimensions. Diverse groups scored an average of 2.18 on the uniqueness scale, compared to an average of 2.21 by homogeneous groups. The mean usefulness score for culturally diverse groups was 3.37; while the score was 3.51 for homogeneous groups. As with hypothesis two, section and task responsibility were covaried out in a hierarchical manner. The overall results for hypothesis three are in Table 8 and the results for hypothesis four are in Table 9, below.

Table 8.

| Uniqueness of Ideas by Culturally Diverse and Culturally Homogeneous Groups |
|-----------------------------|--------|--------|-----------------|
| Variable                    | B      | S.E.   | Wald Statistic  |
| Section (1)                 | -1.0060| .6470  | 2.4174          |
| (2)                         | .3674  | .6201  | .3510           |
| Task Responsibility         | -.7324 | .5238  | 1.9554          |
| Diversity (1)               | -.4650 | .5681  | .7926           |
| Overall Model Chi-Square    | .798   |        | .1858           |
Table 9.

Usefulness of Ideas by Culturally Diverse and Culturally Homogeneous Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
<td>0.0347</td>
<td>0.6345</td>
<td>0.0030</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>-1.8357</td>
<td>0.7055</td>
<td>6.7703*</td>
</tr>
<tr>
<td>Task Responsibility</td>
<td>0.7485</td>
<td>0.5544</td>
<td>1.8229</td>
</tr>
<tr>
<td>Diversity (1)</td>
<td>-0.5500</td>
<td>0.5530</td>
<td>0.9894</td>
</tr>
</tbody>
</table>

Overall Model Chi-Square = 1.003, Sig. = .1583  *p<.05

Social Loafing Hypotheses

The social loafing hypotheses were designed to test whether or not culturally diverse groups or culturally homogeneous groups would demonstrate social loafing behaviors. That is, would they generate more ideas when working under conditions of sole responsibility for performance than when working collectively, under conditions of shared task responsibility? The reliability of this test depends upon whether the subjects believed the experimental conditions. As reported earlier, the manipulation check confirms the believability of the task responsibility conditions. Hypothesis five stated that there would be no significant difference in the number of ideas generated by culturally diverse groups when working in shared versus sole task responsibility conditions. There was support for this
hypothesis. In other words, the members of culturally diverse groups did not indulge in social loafing, even when their individual performances could not be identified. Members in culturally diverse groups generated an average of 26.9 ideas under sole responsibility compared to an average of 26.6 ideas under shared responsibility. The variables section, age and gender were covaried out in the logit regression model, as done previously. The results of the overall model are in Table 10.

Table 10.

| Culturally Diverse Groups under Shared versus Sole Task Responsibility Conditions |
|---------------------------------|----------------|----------------|----------------|
| Variable                        | B              | S.E.           | Wald Statistic |
| Section (1)                     | -.4122         | .4201          | .9629          |
| (2)                             | .8781          | .3981          | 4.8647*        |
| Age                             | -.0051         | .0342          | .0227          |
| Gender (1)                      | .2661          | .3284          | .6563          |
| Task                            | -.2148         | .3344          | .4125          |

Overall Model Chi-Square=.414, Sig.=.5200 (2-tailed) *p<.05

Hypothesis six stated that members of culturally homogeneous groups would generate more ideas when working under sole task responsibility conditions than when working collectively. In other words, they would exhibit social loafing behaviors, when they believed that their efforts were not individually identifiable. However, group members
generated an average of 30.76 ideas when working collectively under conditions of shared task responsibility compared to an average of 29.52 ideas when working alone under sole task responsibility conditions. Consistent with their group orientation, these subjects did better when working toward a collective end. The variables section, age and gender were covaried out in the logit regression model. The results of the overall model are in Table 11.

Table 11

Homogeneous Groups under Shared versus Sole Task Responsibility Conditions

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section (1)</td>
<td>-.7574</td>
<td>.3580</td>
<td>4.4762*</td>
</tr>
<tr>
<td>(2)</td>
<td>.3315</td>
<td>.3360</td>
<td>.9736</td>
</tr>
<tr>
<td>Age</td>
<td>.0409</td>
<td>.0354</td>
<td>1.3336</td>
</tr>
<tr>
<td>Gender (1)</td>
<td>.2841</td>
<td>.2846</td>
<td>.9965</td>
</tr>
<tr>
<td>Task Responsibility</td>
<td>-.6754</td>
<td>.2877</td>
<td>5.5101*</td>
</tr>
</tbody>
</table>

Overall Model Chi-Square = 5.633, Sig. = .0088  *p<.05

Post-Hoc Power Analysis

Due to lack of statistical significance with respect to hypothesis three and four, it is important to determine if this failure to detect an effect at a given alpha occurred primarily due to the employment of too small a sample (Rosenthal and Rosnow, 1984). Each of these hypothesis had
a sample size of 68 groups and an alpha set at .05. According to Cohen (1988) the minimum convention for adequate power is approximately .80. Hypothesis three had an adequate power of .8145; however, hypothesis four had a power of only .2288. Further investigation revealed that a sample of 355 groups would be required to obtain a power of .80. Further discussion of these hypotheses is in Chapter Five.
Chapter Summary

The results of this study were presented in this chapter. The sample included 384 subjects divided into 68 groups of which 30 were culturally diverse and 28 were culturally homogeneous. There were two Group Orientation hypotheses, three Diversity hypotheses and two Social Loafing hypotheses. Each were tested using a logit regression.

The experimental conditions were confirmed in a manipulation check. Both group orientation hypotheses were supported. Culturally homogeneous groups reported a higher group orientation and a higher collectivism score than the culturally diverse groups. Of the diversity hypotheses, only hypothesis two was supported. Culturally homogeneous groups did generate more ideas on the brainstorming task than the culturally diverse groups. Hypothesis three and four were not supported. A post-hoc power analysis was conducted and revealed adequate power for hypothesis three but inadequate power for hypothesis four. Neither culturally diverse nor culturally homogeneous groups exhibited social loafing. Table 12 gives a summary of these results.
Table 12

**Summary of Tests of the Hypotheses**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group Orientation Hypotheses</strong></td>
<td></td>
</tr>
<tr>
<td>H1a: Culturally homogeneous groups will score higher on team-emphasis than culturally diverse groups.</td>
<td>S</td>
</tr>
<tr>
<td>H1b: Culturally homogeneous groups will score higher on the collectivism scale than culturally diverse groups.</td>
<td>S</td>
</tr>
<tr>
<td><strong>Diversity Hypotheses</strong></td>
<td></td>
</tr>
<tr>
<td>H2: Culturally homogeneous groups will generate significantly more ideas on the brainstorming task than culturally diverse groups.</td>
<td>S</td>
</tr>
<tr>
<td>H3: Culturally diverse groups will generate more unique, or unusual ideas on the brainstorming task than homogeneous groups.</td>
<td>NS</td>
</tr>
<tr>
<td>H4: Culturally diverse groups will generate more useful ideas on the brainstorming task than homogeneous groups.</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Social Loafing Hypotheses</strong></td>
<td></td>
</tr>
<tr>
<td>H5: Culturally diverse groups will generate as many ideas on the brainstorming task under conditions of shared responsibility as sole responsibility.</td>
<td>S</td>
</tr>
<tr>
<td>H6: Culturally homogeneous groups will generate more ideas on the brainstorming task under conditions of sole responsibility than shared responsibility.</td>
<td>NS</td>
</tr>
</tbody>
</table>

S = Supported
NS = Not Supported
CHAPTER 5
DISCUSSION OF RESULTS

This chapter includes four areas of discussion. First, each hypothesis is revisited for a discussion of the results as presented in Chapter 4. Second, the validity issues relevant to this study are addressed. Third, the contributions to the body of literature regarding cultural diversity and social loafing are illustrated. Finally, needs for future research are suggested.

Discussion of Hypotheses

This section of Chapter 5 presents a discussion of the results of each hypothesis based upon the findings detailed in Chapter 4. Implications of the results are also addressed.

Group Orientation Hypotheses

These two hypotheses attempted to measure two different aspects of the same construct—group orientation. The first tested group orientation in terms of specific reported behaviors of the current group members. The Group Style Instrument includes 26 items, 16 of which cluster together on the team orientation factor (Watson and Michaelsen, 1988; Watson et al., 1993). These items include: “We organize our
time well," "We delegate our group work," and "Everyone participates in discussions." The other ten items cluster together on an individual-orientation factor. These items include: "There is conflict and hostility among members," "Sometimes people with good ideas don’t seem to speak up enough," and "Some members interrupt when another is speaking." Members of culturally homogeneous groups reported a slightly higher degree of team orientation than the culturally diverse groups, as expected. These findings reinforce those of previous mixed-diversity studies (Watson and colleagues, 1992, 1993, 1996) in which all-Anglo groups consistently reported high team orientation scores over time. In these studies, the culturally diverse groups reported more individual-orientation behaviors at first with increasing team-orientation behaviors over time. The fact that this data was collected after the groups had worked together for approximately ten weeks may explain why the culturally diverse groups reported relatively high team orientation behaviors, though still not as strongly as those of culturally homogeneous groups.

A collectivism scale was the second means of testing group orientation. This particular instrument gauges a more philosophical outlook in terms of group preferences, rather than specific behaviors. For example, the items ask
respondents to reflect on whether working alone is better than working with a group and the extent to which one should live independent of others. Earley (1989) based these items on Hofstede's (1980) collectivism construct and found them reliable. The conventional wisdom, according to numerous studies, is that Anglo-Americans are individualistic (a low score on collectivism) and Asians, Hispanics, and African-Americans are collectivistic. Yet, here, the culturally homogeneous groups (all Anglo) reported highly collectivistic attitudes toward group efforts, and significantly higher collectivism scores than the culturally diverse groups (p<.05).

There are several reasons that may explain these results. First, it was expected, and supported, that the collectivism scores would be positively correlated with the team-orientation scores. Therefore, it could be expected that the team-oriented culturally homogeneous groups of previous mixed-diversity studies would also report collectivistic attitudes toward group efforts. Second, with regard to culturally diverse groups, these members may well have experienced the process problems of communication and understanding often reported in mixed-group research (Watson et al, 1996). If so, these possibly otherwise collectivistic individuals may alter their attitudes toward group efforts.
It should be noted that while culturally homogeneous groups scored higher on both group orientation measures, culturally diverse groups still reported relatively high collectivism and team orientation scores. Moreover, both homogeneous and diverse groups reported almost identically low individual-orientation mean scores of 2.28 and 2.26, respectively. This may indicate that the culturally diverse groups and non-diverse groups are more alike than different in terms of team orientation. This possibility is explored later in the chapter.

Diversity Hypotheses

Three different dependent variables were used to determine the effects diversity may have on performance. The first dependent measure was simply the number of ideas generated by members of both culturally diverse and homogeneous groups. There was support for this hypothesis that projected that the homogeneous groups would produce a greater number of ideas than the diverse groups. Their strong group orientation may have given these homogeneous groups a performance edge. Perhaps more importantly, the culturally diverse group members may have been slowed by the nature of the task which required them to communicate their ideas on paper.
The second and third dependent performance variables were uniqueness and usefulness of ideas generated. Previous research studies (Harkins and Petty, 1982; Stevenson, 1989) suggested the possibility that some group members may utilize a high level of task effort but generate fewer ideas due to spending more time thinking of unique or unusual ideas, despite instructions to the contrary. This was considered particularly relevant for this study since culturally diverse groups have been credited with providing a variety of perspectives and innovative alternatives not found in homogeneous groups. However, there was no support found for the notion that the culturally diverse groups generated more unique or useful ideas than culturally homogeneous groups. Indeed, these findings are consistent with the previous social loafing studies of Harkins and Petty (1982) or Stevenson (1989) mentioned who also reported no main effects with regard to creativity of ideas.

One possible reason for a lack of support for these hypotheses is that the subjects might have paid close attention to the instructions and simply tried to generate as many ideas as possible without regard the quality of those ideas. Also, the nature of the task may not be sensitive to tapping into potential differences between culturally diverse and homogeneous groups with regard to uniqueness or
usefulness. Finally, these 384 subjects generated over 2,400 different ideas. Despite high interrater reliability, it may be that there were too many ideas generated for raters to be sensitive to subtle differences with regard to uniqueness or usefulness. Perhaps reducing the number of ideas to be rated through a categorization process and more intensive rater training would have been useful in identifying a pattern.

Social Loafing Hypotheses

As hypothesized, subjects in culturally diverse groups generated as many ideas when working collectively as when working alone (hypothesis 5). Despite lower overall idea production relative to homogeneous groups, these subjects did not indulge in social loafing, even when they believed their individual efforts were unidentifiable. Likewise, subjects in culturally homogeneous groups did not indulge in social loafing behaviors, which is counter to what was hypothesized (hypothesis 6). Indeed, homogeneous group subjects demonstrated social striving behaviors by generating significantly more ideas working collectively than when working alone.

The results of the manipulation check verifies that these subjects believed that their individual efforts were unrecoverable when working in the shared condition. Yet, these subjects, whether in culturally diverse or non-diverse
groups avoided engaging in social loafing. Therefore, cultural diversity alone cannot explain the elimination of social loafing.

Clearly, other factors were at work. High group orientation is probably the most compelling. Further statistical investigation revealed that the number of ideas generated by each group varied significantly due to group orientation scores. Those groups with the highest group orientation scores (over 3.5) generated an average of 30.03 ideas, while groups with lower group orientation scores (under 3.5) generated an average of only 26.85 ideas. The regression analysis removed the effects of section, diversity and task responsibility condition. The results are presented in Table 13, below.

Table 13.

Group Orientation and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
<td>2.3535</td>
<td>1.1896</td>
<td>1.978*</td>
</tr>
<tr>
<td>Diversity</td>
<td>3.0186</td>
<td>1.8917</td>
<td>1.596*</td>
</tr>
<tr>
<td>Task Responsibility</td>
<td>.0546</td>
<td>1.8896</td>
<td>.029</td>
</tr>
<tr>
<td>Group Orientation</td>
<td>3.3192</td>
<td>1.9002</td>
<td>1.747*</td>
</tr>
</tbody>
</table>

Overall all Model F=2.37559, Sig. of F=.0307 *p<.05

High group orientation perhaps is best explained by the context in which these groups worked. The data for this study
was collected ten weeks into the semester, during which time
the groups worked together weekly on various projects,
receiving group grades and other performance feedback.
Therefore, these groups established a history of working in a
performance-oriented mode. Yet, these subjects were
volunteers—they were not "obligated" to the experimenter,
instructor or group members to perform at any particular
level. They were aware that their performance in this
experimental exercise would not reflect on their grade for the
course. Nevertheless, individual attitudes toward group
performance did not change. These subjects had the
opportunity to loaf, and did not.

Some explanation may be found in the fact that these
student subjects may simply be accustomed to working with
groups. As university juniors and seniors, they were likely
to have had numerous opportunities to work in groups in
previous class situations both in college and high school.
More and more university courses, particularly business
courses, are utilizing a variety of group projects as a major
component of the class. Clearly, this is a means of preparing
students for the reality that the use of autonomous work
groups is growing among organizations. Perhaps universities
are doing a good job of acclimating students to a group
environment and thereby eliminating potentially dysfunctional activities, such as social loafing.

Validity Issues

Validity issues are outlined below. Threats to statistical conclusion validity, internal validity, external validity and construct validity are addressed. Cook and Campbell (1979) serve as a guide for the discussion.

Statistical Conclusion Validity

Reasonableness of presuming covariation given a specified alpha level and the obtained variances is the focus of statistical conclusion validity (Cook and Campbell, 1979). Statistical power, reliability of measures and threats with regard to the experimental setting are the most relevant to this study. Statistical power was tested after the analysis determined a lack of support for three hypotheses. A post-hoc power analysis revealed that there was adequate power for all hypotheses except hypothesis four. An adequate power of .80 would have required a sample of 355 groups. Reliability of measures is not a concern for this study because the reliability scores exceeded 0.70, which is considered acceptable (Nunnally, 1978).

Because the experiment took place in three different class sections and the sample was a convenience sample, random
irrelevancies in the experimental setting, reliability of treatment implementation and random heterogeneity of respondents are of greatest concern in this study. Careful controls were in place to assure that the experimental settings were the same for all the class sections. No major deviances or disruptions were observed during the experimental activity. A written script was read by the same experimenter for all three consecutive class sections, on the same day. Equivalence of groups and class sections was controlled through randomization of experimental task conditions. However, as noted in Chapter 4, performance varied significantly by class section. This suggests that some factor was at work that was neither anticipated nor controlled for prior to the experiment. The first class began at 9 a.m., the second at 10 a.m. and the third at 11 a.m.. The 10 a.m. section generated the most ideas (mean = 31.28) followed by the 11 a.m. section (mean = 29.11) and the 9 a.m. section (mean = 25.10). A Bonferroni test of means revealed that the 10 and 11 a.m. sections did not vary significantly, but both sections varied significantly from the earlier 9 a.m. section at the .05 level. It is possible that students who register for a 9 a.m. class are different from those who register for the later times or that the time of day itself may contribute to lower performance. However, it is impossible to know for
sure what accounts for these differences. All relevant tests controlled for these section effects statistically.

Internal Validity

The history threat was minimized by collecting all data in three consecutive morning class periods. Historical events will thereby affect all groups equally. This should also minimize any selection-history threat. However, because randomization with respect to time of day, day of week and week of semester was not feasible, intra-session history could be a threat to internal validity.

Maturation, the threat of an affect due to the respondents' growing older, wiser, stronger or more experienced is minimal in this study. The time involved for a maturation effect is limited since the experiment took place in a very short amount of time, less than 30 minutes. The only impact maturation may have is in terms of selection-maturation. However, all groups were together for an equivalent amount of time. Therefore the selection-maturation threat should also be minimal. Likewise, because the experiment was relatively short, respondents did not drop out, minimizing any threat of mortality to internal validity. There is the possibility, however, that some subjects simply stopped producing ideas and could not be detected.


Testing is the threat when an affect might be due to the number of times participant responses are measured. In this case, testing should have no impact. The brainstorming task was unusual and it is unlikely that the participants were previously involved in a similar experience. Testing should be manifested equally between groups.

Instrumentation was controlled by providing all respondents within each treatment condition the same written instructions and materials. The procedures were the same for all respondents/groups. It is only the collection of the ideas generated that differed (pooled or individually), which is not expected to carry with it an instrumentation affect.

Statistical regression is not a factor in this study since the groups are not formed on the basis of extreme pretest scores. Selection is a threat when an effect may be due to the difference between the kind of people in one experimental group as opposed to another. This threat was controlled by the random assignment of individuals from culturally homogeneous pools into groups. Further, the task-responsibility treatment was randomly assigned to diverse and non-diverse groups. All groups were statistically compared. The groups were found to be statistically equivalent, except for differences found based
on class section. These significant differences were partialled out as covariates.

**Diffusion or Imitation of Treatments** could be a threat in this study since students from one section may have had the opportunity to communicate with those of the remaining sections. Earlier respondents may pass on ideas for the brainstorming task. To control this threat, participants were made to believe that different groups/individuals generated ideas for different objects.

**Compensatory equalization, compensatory rivalry and resentful demoralization** occur when participants perceive treatments to differ in desirability. This is not expected to have an impact on this study. Participants did not know if or how their participation was different from that of other participants'. However, if individual's did come to realize a difference, it is not expected that one treatment was perceived as "less desirable" than the others to the extent that it lead them to consciously alter their performance.

**External Validity**

One of the major weaknesses of experimental designs in general, and this study, specifically, is the use of a "captive audience." The study was set in a classroom with student subjects. The experiment did take place in the
course of a "normal" class day, which should reduce the artificiality of the experience and any effect due to experimental demand (Wanous and Youtz, 1986). Still, it is unclear how these groups might compare to those found in organizational settings. In an effort to improve generalizability, these particular class sections were utilized because the students were required to participate in on-going groups that worked together on various projects, just as organizations are utilizing short- and long-term project teams. These groups also included individuals that represent a variety of career interests, cultures, socioeconomic backgrounds, and life experiences. Further, though perfect generalizability is impossible, there is some evidence in support of the use of student samples such as the ones in this study. Locke (1986) suggests that college student populations and organizational employees share some work experience, common values and respond similarly to incentives and participation.

Finally, the vast majority of research in the social loafing arena is conducted in an artificial laboratory with ad hoc groups. Close replication of procedures is important in order to facilitate discussion and understanding. The value is in the support of a theoretical prediction, while controlling for extraneous confounding factors (Mook, 1983).
This study was designed to replicate the procedures as closely as possible while attempting to come, perhaps, one step closer to generalizability.

Construct Validity

Construct validity is defined as the degree to which operational variables accurately measure the constructs of interest (Cook and Campbell, 1979). As noted in the discussion of hypotheses 3 and 4, inadequate preoperational explication of the constructs "uniqueness" and "usefulness" may explain a failure to identify performance variance between culturally diverse and culturally homogeneous groups. However, well-formulated, operational definitions of team orientation, collectivism, diversity and social loafing were outlined prior to the collection of data.

Mono-method bias is a threat in this study because all attitudinal data was collected through the use of questionnaires. However, this threat was minimized by varying the use of both negative and positively worded statements. Mono-operation bias was also reduced because group orientation was measured by two different instruments and performance was measured by the number of ideas generated, the uniqueness of ideas generated and the usefulness of ideas generated.
Hypothesis guessing is a possible threat to this study. Student subjects may wonder why they were engaging in a brainstorming activity. However, the experiment did take place within a normal class period as one of many class activities. Further, they probably did not “guess” that the experimenter was interested in differences in performance based on the ethnic/cultural makeup of the groups.

The threat of evaluation apprehension is defined by the notion that subjects may react in ways that may not be typical under “normal” circumstances. That is, the subjects may feel the need to please the researcher or hide their real feelings for some reason. The nature of social loafing studies makes this a complicated issue. In the manipulation check, subjects working in the alone condition acknowledged that their performance was identifiable. Also, with regard to attitudes toward group orientation, there may be a “norm” established in these classes where group activity is emphasized that would lead these subjects to respond to the questionnaires that may not accurately reflect their true feelings. However, they knew that their specific identities were not known—they did not put their name or otherwise identify themselves on the questionnaires or on the envelopes in which they placed their ideas. The envelopes only identified their group number and a letter,
such as 20a, 20b, or 20c, etc. This level of anonymity was designed to reduce the threat of evaluation apprehension. The researcher also read from a script and gave no personal feedback to subjects in order to reduce evaluator expectations.

Finally, interaction of testing and treatment is a threat in this study due to the somewhat artificial nature of the experimental setting. Artificiality was reduced for these subjects since the experiment was conducted in the course of a regular class day and because the subjects maintained their existing group assignments. Despite these efforts, however, the reactions to the treatments may be spurious.

Contributions of the Study

This study adds to the body of social loafing research by introducing two specific dimensions. First was the use of mixed-culture groups as a means of reflecting the reality of diversity in the workplace. The majority of social loafing research provide no control as to the racial/ethnic composition of the groups used. Other social loafing studies utilize cross-cultural comparisons of groups. While cross-cultural comparisons are important in understanding potential differences between people, organizations must focus on how to best utilize a complex workforce in capturing a competitive
advantage. Managers must understand the potential negative effects of diversity. This study indicates that social loafing may not be one of them.

The second new dimension included in this study was the use of established groups rather than ad-hoc experimental groups common in the majority of social loafing research. In most of these studies, individuals are placed in a room and simply told they are a member of a group. In contrast, the groups in this study were intended to reflect organizational reality in at least three ways. First, group members had to work together weekly on various projects to be completed by a certain deadline. Members of organizational teams often meet periodically on project updates while also working independently on other efforts. Certainly, organizational teams face deadlines for the completion of projects. Second, like organizational teams, the groups in this study had a relatively high level of interaction and decision making which included project planning, implementation and evaluation. Third, the groups in this study were compensated, at least in terms of a course grade, based on performance over the evaluation period of a semester.

The most important finding of this study is the role group orientation appears to play as a means of enhancing performance. High group orientation alone may be enough to
eliminate tendencies toward loafing. This is highly relevant for organizations that are increasingly dependent upon the performance of project teams, quality circles and other work groups in which individual contributions are rarely identifiable. There appears to be less need for managers to monitor individual behaviors—good news for those organizations hoping to achieve greater efficiency by removing managerial levels. The challenge for organizations, then, is to create conditions that foster this high group orientation. For this study, three factors were present that may have contributed to high group orientation: 1) time to work through communication and process problems, 2) opportunities to develop through feedback and, 3) a task-oriented focus.

Organizations may need to reevaluate their current strategies and structures in order to develop a corporate culture that seeks to fully utilize the diversity of the workforce. The subjects in this study were found to be highly group-oriented. The implication for managers is that the current mechanisms within organizations that promote competition and focus on individual, self-interest may be inappropriate in multicultural settings. Job design, performance appraisal systems and reward structures should reinforce cooperative attitudes and group decision making. Research suggests that diverse organizations should broaden
policies and procedures and create operating methods that are less standardized (Cox and Blake, 1991). In this way, organizations are better able to capitalize on the innovation and problem-solving advantages of diversity. This openness, then, leads to a more fluid and adaptable organization.

Despite a culture that values a high-group orientation, cultural differences in terms of work habits, nonverbal behavior and family and religious traditions may result in communication and other process problems. Many of these difficulties could be overcome through various training programs. First, cross-cultural training should help clarify differences among employees, particularly with regard to work habits. Training designed to help diverse group members promote understanding of each others' attitudes has been found to increase performance of those groups; whereas, those diverse groups who lacked such training were less effective (Triandis, et al, 1965). Second, organizational socialization programs should help new employees understand work expectations, time orientations, dress codes, and other norms of the organization (Anderson, 1983). Accuracy in communication between managers and employees facilitates understanding and greater effectiveness in assigning group members to tasks (Brislin, 1981; Anderson, 1983).
Expatriate managers operating in other traditionally individualistic cultures may also need to determine if their assumptions regarding individual performance are accurate. The all-Anglo subjects in this study reported behaviors and attitudes that are counter to their individualistic label. The same could be true in other societies that are "historically" individualistic. Likewise, collectivistic cultures may not maintain their high affiliation for the group. Earley (1993) reports that people moving from rural populations to coastal cities in the Peoples Republic of China has created a "great mixing of people with highly varied backgrounds." Further, young adults in many collectivistic countries are more "westernized" in their tastes. Therefore, managers in such collectivistic societies may need to utilize different motivational and decision-making techniques.

Demographic trends indicate that increased diversity in work teams is inevitable. Managing diversity in such a way as to capitalize on the resources group members bring with them to the workplace is key to obtaining competitive advantage. Simply assimilating women and minorities into a dominant white male culture will not suffice. Organizations may need to modify their vision, their assumptions and their systems in order to create a dominant heterogeneous culture, where diversity is a strength (Thomas, 1990).
Suggestions for Future Research

Social loafing did not surface in the experiment conducted in this study. It appears that the context of the groups' history might have played some role in the performance levels generated in the brainstorming task. This assumes that group members would not have reported high group orientation scores after being together for a short period of time, two or three weeks. Therefore, the process of working together over time toward the completion of some specific goal(s) could then lead to the development of high group orientation. The research literature suggests that these assumptions are valid. The role of history could be tested simply by conducting at least two social loafing experiments, first in an early stage of group participation and then again later. Greater controls would be necessary to ensure equivalent feedback and development opportunities for all groups.

Team orientation/group development could further be tested by adding two ad-hoc control groups to the experimental design. If utilizing a classroom setting, as done in this study, the ad-hoc groups could be formed by taking group members out of their usual groups to form a new set of groups that have no prior history. If social loafing occurs among the members of ad-hoc groups, but not among those in groups with history, a stronger case for team development could be
made. This is also a means of testing whether ad-hoc groups would report high or low levels of group orientation.

Further research is needed to identify what specific factors were at work in the culturally diverse groups. It is possible culturally diverse groups would have performed better given more time to generate ideas. It may be that some subjects did not know how to adequately express their ideas on paper. On the other hand, it is possible that these culturally diverse groups simply needed more history or developmental opportunities to achieve a higher group orientation and better performance. Watson et al (1993) found no differences in overall performance between culturally diverse and non-diverse groups after three months of group history. Watson et al. also found that diverse groups generated a higher range of perspectives and multiple alternatives. But the diverse groups in this study failed to establish this type of "diversity advantage." Their ideas were neither more unique nor more useful than those of culturally non diverse groups.

Previous research has shown that when even a small number of minority views are expressed, creativity is stimulated (Nemeth, 1985). Perhaps this particular brainstorming task was not sensitive to cultural differences. Also, by restricting the evaluation of performance to just one
task, there is the possibility of systematic bias in the results. Future research should be conducted testing
difference between diverse and nondiverse groups using a
variety of tasks, particularly those that would require face-
to-face interaction among group members. The collection of
anecdotal data could provide the additional information needed
to present a full picture of how these group members relate to
one another and how their attitudes might effect performance
levels.

In an effort to more fully understand diversity, future
research efforts should attempt to measure individual-level
variables, such as biculturalism, that could mediate between
ethnicity and performance behaviors. Many Asian Americans,
Hispanic Americans and Black Americans are considered
bicultural in that they may accept the norms of a predominant
culture as well their own subcultural group (Garza, Romero,
Cox and Ramirez, 1982). Cox (1993) suggests that
biculturalism allows individuals to use the cultural
orientation that is most appropriate for a given situation.

Future research efforts should address these issues of
dominant versus subcultural orientations by conducting social
loafing and diversity experiments in a variety of settings in
which the dominant cultures are not Anglo-American. These
studies would provide a means of comparing various kinds of
ethnically homogeneous groups to groups with different levels of heterogeneity. Replication studies in international and/or regional settings may tap into more pronounced cultural differences.

Organizations would also be well served if research studies investigated diversity in terms of technical expertise, managerial experience, skills, abilities, educational background, etc. It would be important to learn if these types of diverse groups experienced similar patterns of process and communication problems, if group orientation is more or less difficult to achieve and whether group members would engage in social loafing when they shared task responsibilities.

Finally, as with any experimental study, this study should be replicated using a variety of tasks, subjects, times and settings in order to add validity to the current findings. Step-by-step modifications in the experimental design will clarify the relationships between performance, cultural diversity, task responsibility and group orientation. Next, it is critical these social loafing studies be replicated in a field setting, despite the obstacles of control.
Chapter Summary

The primary purpose of this research was to determine the role cultural diversity plays in enhancing performance and thereby eliminating social loafing. It was anticipated that the members of culturally homogeneous groups would engage in social loafing when their individual efforts were “buried.” However, subjects in both culturally diverse and culturally homogeneous groups resisted social loafing behaviors. Additional statistical analysis revealed that as group orientation increased, performance levels increased as well. Group orientation, then, appears to be a more powerful determinant of performance than group composition. It is expected that the time these groups had together, prior to the experiment, contributed significantly to these results. Future research suggestions were made that could help establish a causal relationship.
APPENDIX A

DEMOGRAPHIC INFORMATION FORM
DEMOGRAPHIC INFORMATION FORM

1. Name ___________________________ Course Section Number _____________

2. Male _____ Female _____

3. Please select the category below which you feel most closely identifies you:
   ____ a. American Indian or Alaskan Native
   ____ b. White (Not Hispanic)
   ____ c. Black (Not Hispanic)
   ____ d. Asian or Pacific Islander
   ____ e. Hispanic
   ____ f. Other (please specify): _________________________________________

4. Permanent VISA/US citizen _____ If not, what nationality: ____________________

5. My age is: ______

6. My full-time work experience is: _____ years.

7. My part-time work experience is: _____ years.

8. The organization I presently work for is (or most recently worked for): (circle one)
   a. manufacturing             f. communications systems
   b. finance/accounting        g. business service (except data processing)
   c. retailing                h. medicine
   d. government               i. law
   e. wholesale/retail          j. other _________________________________

9. Education Major:
   a. engineering/physical sciences         e. business
   b. finance                              f. legal
   c. humanities                           g. other _________________________
   d. social sciences

10. Years of formal education _______.
    (for example: high school=12; associate’s degree=14; bachelor’s=16; master’s=18; etc.)

11. Current employment position (or most recent if you’re not working full-time): (circle one)
    a. non-managerial                b. managerial

12. Briefly describe any academic and business experience you have had with teams (use the back if necessary)
APPENDIX B

PARTICIPATION CONSENT
PARTICIPATION CONSENT

Project Title: Group and Individual Brainstorming Performance

The purpose of this research is to examine the performance of groups and individuals on what is called a "brainstorming" task. I will be asked to complete a 15-minute brainstorming exercise during which I will generate as many ideas as possible.

All information collected in this study is confidential, and my name will not be identified at any time. I understand that serious risk is unlikely and there is little chance of any long-term effects from this experiment.

I understand that the experiment is not designed to help me personally, but that the investigator hopes to learn more about the use of groups and individuals as an effective way to generate ideas. I understand that my participation is voluntary. I may withdraw from participation at any time without penalty or effect upon my class standing or grade.

Deanna Heller
930 W. Sycamore #201
Denton, Texas 76201
817-565-3140

Name, address and phone number of Principle Investigator

Signature of Subject Date

Subject Student I.D. number
APPENDIX C

INSTRUCTIONS FOR SOLE TASK RESPONSIBILITY
INSTRUCTIONS

We are interested in studying the performance of groups and individuals on what is called a "brainstorming" task. You will be given the name of an object and your task will be to come up with as many uses for this object as you can. Don't be concerned about the quality of the uses you come up with. The uses can be ordinary or unusual. It is, however, important that you write down as many uses as you can in the time allotted. If you finish before time is called, simply wait quietly.

I will ask you to write one use for a _____________ on each slip of paper, fold the slip, set it aside and then write the next use on a second slip and so on. At the end of the time period, your ideas will be placed back into the manila envelope you received. It is not important if you happen to come up with the same uses as your group members. I want to see how many uses each of you can come up with. Thus, each of you bears the full responsibility for generating as many uses as you can.
INSTRUCTIONS

We are interested in studying the performance of groups and individuals on what is called a "brainstorming" task. You will be given the name of an object and your task will be to come up with as many uses for this object as you can. Don't be concerned about the quality of the uses you come up with. The uses can be ordinary or unusual. It is, however, important that you write down as many uses as you can in the time allotted. If you finish before time is called, simply wait quietly.

I will ask you to write one use for a _________________ on each slip of paper, fold the slip, set it aside, and then write the next use on a second slip and so on. At the end of the time period, your ideas will be combined with your group's in a single envelope. It is not important if you happen to come up with the same uses as your partners. I want to see how many uses your group can come up with. Thus, you share responsibility with your partners for coming up with as many uses as you can.
APPENDIX E

GROUP STYLE DESCRIPTION
Team Interaction Style
Below are a number of statements which describe interaction in teams. For each statement indicate the extent to which that statement is true. Use this scale: 1—to a very little extent; 2—to a little extent; 3—to some extent; 4—to a great extent; 5—to a very great extent.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Little Extent</th>
<th>Very Great Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Everyone participates in discussions.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. We share high performance expectations.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. Arguments carry on too long.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. We have sort of a “cheer leader/s” who emphasizes the positive things we do.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. We listen to each individual’s input.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. In discussions, we drift off the point.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Someone makes sure that quieter members get a chance to express their ideas.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. Some members of the group take our group work too lightly.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. We delegate our group work.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. We organize our time well.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. The diversity of members’ backgrounds aids in problem-solving.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. We don’t have total agreement, but we reach a kind of consensus that we all accept.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13. Some members interrupt when another is speaking.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14. We show positive attitudes regarding group work.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15. Our individual styles seem compatible.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16. We demonstrate shared leadership skills in our problem-solving and decision making.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17. There is conflict and hostility among members.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18. We identify the functions necessary for the successful completion of group projects.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. One or two members dominate the discussion more than they should.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. One or more members has emerged in our group who is effective at organizing tasks.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. Sometimes people with good ideas don’t seem to speak up enough.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>22. We’re willing to spend enough time to ensure that our group projects are done well.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>23. Some members pretend to know what they’re talking about when they really don’t.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>24. Some members don’t disagree because they are too concerned with what others might think.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>25. One or more members emerged who helps us to work out interpersonal differences.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>26. Some members are unreasonably stubborn in their views points.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

COLLECTIVISM SCALE AND MANIPULATION CHECK
For each statement indicate the extent to which that statement is true for you. Use this scale: 1=to a very little extent, 2=to a little extent; 3=to some extent, 4=to a great extent; 5=to a very great extent.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Little Extent</th>
<th>Very Great Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Working with a group is better than working alone.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. One should live one's life independent of others as much as possible.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Individuals are responsible for the successes or failures of work groups.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Each worker is responsible for the outcomes of his/her work group.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. In this exercise, the experimenter will be able to tell how many ideas I generated.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. In this exercise, I expect that my group members put in less effort than I did.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. In this exercise, I expect that my group members put in just as much effort as I did.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. In this exercise, I expect that my group members put in more effort than I did.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>


