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THE EFFECTS OF FRAMING INSTRUCTIONS AND MEMBERSHIP CHANGE ON
TEAM CREATIVITY

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ABSTRACT

The present study investigated the effects of framing instructions and membership change on team creativity. The framing instructions condition compared the effects of task conflict instructions with that of brainstorming instructions. I hypothesized that teams exposed to instructions endorsing task conflict would produce more creative outcomes in comparison to teams given brainstorming instructions. The membership change condition compared the effects of membership change, in which two team members were randomly selected to change places with one another halfway through a creative task, with a control condition. I hypothesized that membership change teams would produce more creative outcomes compared to teams in the control condition. I also hypothesized that an interaction would take place, such that teams receiving the task conflict instructions and undergoing membership change would produce the most creative outcomes. To test these hypotheses, sixty-three three-person teams participated in an hour-long experiment in which they were asked to develop a plan for a new charitable event for the university. None of the proposed hypotheses were supported. An exploratory analysis revealed that an interaction took place between membership change and participative safety on originality. Limitations, implications, and future directions are discussed.

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Chapter 1

Introduction

To remain competitive in an expanding, global marketplace, innovation is beneficial, if not necessary, to the continued growth and success of organizations (Banbury & Mitchell, 1995; DeFillippi, Grabher, & Jones, 2007; Wolfe, 1994). Therefore, many organizations may instinctively rely on the selection of creative individuals to fill this void for innovation. In spite of this belief that creativity is generally the result of an individual creative genius, many of the inventions introduced in the 20th century are the result of group work (Leonard & Swap, 1999). Furthermore, group creativity may not depend so much on bringing creative people together but rather, executing the creative process in an effective manner (Leonard & Swap, 1999; Mumford & Gustafson, 1988; Skilton & Dooley, 2010). In contrast to creative individuals, utilizing teams for creative purposes offers a host of possibilities that would not be possible with the use of a single individual.

Considering the importance of innovation to organizational success, investigating the factors that are conducive to team creativity will hold practical significance in the coming decades. In their meta-analysis, Hülsheger, Anderson, and Salgado (2009) found team process variables (e.g. support for innovation, vision) to have a stronger effect on innovation than team input variables (e.g. goal interdependence, team composition). This suggests that it is more important to focus on creating an environment that is conducive to innovation than aspects of the team itself (Hülsheger et al., 2009). In light of these findings, exploring team process variables rather than input variables may prove more fruitful to improving an organization's innovative potential. The present study will make use of this proposition by exploring two process variables, framing instructions and membership change, that may cultivate team creativity.

In formulating a model for work group innovation, Farr, Sin, and Tesluk (2003) categorizes innovation in two distinct stages: *creativity* and *innovation implementation*. Both of these stages are further broken down into transition and action phases. Transition phases are defined by group members' reflection on prior task accomplishments and planning for future task completion. Action phases are defined by the situations in which participants are actually completing the task. The authors propose that conflict management is essential to three of the four phases of innovation, namely both phases of the creativity stage and the transition phase of the innovation implementation stage. More importantly, the authors emphasize that conflict management rather than avoiding conflict altogether is important for groups that want to succeed during these phases (Farr et al., 2003). As the authors suggest, utilizing a certain level of conflict in an effective manner can actually enhance the creative potential of a team. Expounding on these propositions, conflict management may hold vital implications for the success of groups attempting to achieve a creative outcome.

Task Conflict and Team Creativity

The conflict literature, while dampened by mixed findings, offers a significant amount of support for the idea that conflict may be advantageous for teams in certain situations (e.g. Amason, 1996; Bradley, Postlethwaite, Klotz, Hamdani, & Brown, 2012; Farh, Lee, & Farh, 2010; Jehn, 1995; Jehn & Mannix, 2001; Simons & Peterson, 2000). Conflict has previously been categorized as task-based or relationship-based. Task conflict is defined as "disagreements among group members about the content of the tasks being performed" (Jehn, 1995, p. 258). Relationship conflict is defined as "interpersonal incompatibilities among group members, which typically includes tension, animosity, and annoyance among members within a group" (Jehn, 1995, p. 258). While one form of conflict may lead into the other (Amason, 1996), their causes

and effects are typically separate entities. Research on relationship conflict has mostly shown that it has a detrimental effect on performance (Amason, 1996).

The literature on the effect of task conflict on team performance and, innovation in particular, has been less conclusive as researchers have come to a number of mixed findings. De Dreu and Weingart (2003) meta-analytically found a negative correlation between task conflict and performance however the authors explained that this finding cannot be considered decisive and emphasized that task conflict can be more effective when certain process variables are involved. Conversely, task conflict has been shown to have positive effects on group performance and creativity under certain circumstances (Bradley et al., 2012; Farh et al., 2010; De Dreu, 2006; Simons & Peterson, 2000). Jehn (1995) found task conflict to be more beneficial in nonroutine tasks than routine tasks suggesting that it may be more helpful when creativity is involved. More recent research suggests that task conflict may have a curvilinear effect on creativity in which moderate levels of task conflict produce the highest levels of creativity and low or high levels of task conflict produce less than optimal levels of creativity (De Dreu, 2006; Farh et al., 2010).

In their meta-analysis, Hülsheger et al. (2009) found no relationship between task conflict and innovation. However, the authors emphasize that task conflict may work better under certain circumstances (Hülsheger et al., 2009). Considering the lack of consistency found in the meta-analysis by Hülsheger and colleagues (2009), further investigation of the task conflict variable is necessary to provide clarity in the literature.

The Need for Identifying Antecedents of Task Conflict

Bearing in mind the inconsistency in the task conflict literature, future research must investigate the mechanisms through which task conflict's potential benefits can be maximized.

The ability to increase task conflict while minimizing relationship conflict can be very beneficial as both types of conflict are typically highly correlated with each other (Amason, 1996; Simons & Peterson, 2000). However, it is not possible to simply encourage task conflict and discourage relationship conflict (Simons & Peterson, 2000). As Amason (1996) suggested, it may be more practical to form conditions that will induce task conflict, thereby creating an environment in which task conflict feels authentic. If group members are willing to criticize ideas and subsequently accept this criticism in an inviting rather than hostile manner, task conflict may arise without the presence of relationship conflict (Amason, 1996). The present study will examine how task framing instructions and membership change can promote effective use of task conflict to enhance group creativity.

Minority Dissent in Team Creativity

In order for task conflict to occur, there must be at least some disagreement among the group's members. Nemeth and Nemeth-Brown (2003) asserted that individuals are usually more creative than groups when working on a similar task. However, they argue that groups can actually outperform individuals, particularly when group members use dissent to promote divergent thinking and subsequently, creativity (Nemeth & Nemeth-Brown, 2003). In order to facilitate a creative environment, encouraging individuals to take risks, even at the expense of failing, is often necessary (Leonard & Swap, 1999). The promotion of radical ideas that are against the status quo can help create an environment marked by creativity (Leonard & Swap, 1999). Pixar, a leader in innovative animated films, has even embraced recruiting members that will cause dissent within the group (Bunn, 2004).

The influence of a minority perspective can ultimately allow a group to achieve a better solution. While majority influence directs focus at the main point proposed, minority influence

opens up group members to seeing other alternatives that have not been proposed previously (Nemeth, 1986). As the group is exposed to new alternatives, it can make a better decision among the larger pool of options available (Nemeth, 1986). In addition, the group may consider a new alternative that it otherwise would have excluded if it were not for the influence by the minority (Nemeth, 1986).

The Effect of Minority Influence on Divergent Thought

Nemeth and Kwan (1987) supported many of Nemeth's (1986) original propositions on the value of minority influence. These authors found that individuals that are exposed to a minority influence performed at a higher level on a divergent thinking task compared to individuals exposed to a majority influence or a control group (Nemeth & Kwan, 1987). Minority influence does not necessarily allow these individuals to perform better by providing them with the correct solution. Rather, minority influence encourages these individuals to *utilize more strategies*, which leads them to identifying the correct solution. Subjects in the majority influence condition were more likely to make use of the initial strategy proposed whereas minority influence subjects used a combination of different strategies to attain the correct solution (Nemeth & Kwan, 1987).

Nemeth and Kwan (1985) came to similar findings as they found that individuals had greater creative performance when exposed to a minority influence compared to a control or majority influence. Subjects in the minority influence condition expressed a higher quantity of word associations and more original word associations. Conversely, on six of the seven associations, majority influence subjects gave less original word associations compared to the control. The results of Nemeth and Kwan's (1985) study reinforces the proposition that majority influence leads to more convergent thinking and minority influence encourages group members to

think in a divergent manner and utilize a number of different strategies (Nemeth, 1986). While dissent and task conflict are similar in that both appear to improve decision quality, dissent is unique in that it promotes divergent thinking (De Dreu & West, 2001).

In a study by Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, and Frey (2006), dissent groups were more likely than homogeneous groups to solve a hidden profile situation in which unshared information, defined as, "information known to only one member prior to discussion" (p. 1080), was needed to find the best solution. One important finding was that dissent had a positive effect on the hidden profile situation regardless of whether the group contained a proponent of the correct solution prior to discussion. In other words, *dissent alone* improved groups' abilities to solve the hidden profile situation. Dissent was helpful in attaining the best solution because it increased the amount of unshared information disclosed and this led to a higher quality solution (Schulz-Hardt et al., 2006).

In addition to improving the functioning of groups, dissent also has an effect at the individual level. Exposure to dissent, even when the dissenter identifies an inaccurate solution, fosters independence (Nemeth & Chiles, 1988). This increased independence may be caused by an admiration of the dissenter, who may be seen as courageous for holding a position that is contrary to the majority opinion (Nemeth & Chiles, 1988). For instance, in the word association study by Nemeth and Kwan (1985), subjects in the minority influence condition admired the dissenter more so than in the majority influence condition.

Although dissent appears to improve decision quality and creativity, some research suggests that dissent can have a negative effect on the group and the dissenter himself. Because of this, some researchers have tried to identify a way to have the benefits of dissent without the potential dangers. One proposition has been that of the devil's advocate (Nemeth, Brown, & Rogers, 2001). The idea behind the devil's advocate role is to criticize all aspects of a chosen alternative to identify its potential faults.

Even though the devil's advocate role may benefit the final decision made by a group, it appears that authentic dissent is superior to the devil's advocate. Authentic dissent is more effective than contrived dissent, through the use of devil's advocate, in limiting confirmation bias (Schulz-Hardt, Jochims, & Frey, 2002). In other words, authentic dissent groups are more likely to search for conflicting information than groups of contrived dissent (Schulz-Hardt et al., 2002). The results of this study suggest that dissent may play an important role in stimulating groups to view the situation in a divergent, rather than convergent, manner as groups involving a dissenter are more likely to search for information that offers a balanced, rather than biased, perspective of the situation (Schulz-Hardt et al., 2002). In addition, an authentic dissenter is more effective in debating as he or she can make better arguments than a devil's advocate (Schulz-Hardt et al., 2002).

In another study (Nemeth et al., 2001), an authentic dissenter and a consistent devil's advocate (a person who actually held opinion of the role he was playing) were similar on every variable measured (e.g. liking, harmony, conflict) aside from quantity and quality of decisions. The authentic dissenter produced significantly more and higher quality decisions than the consistent devil's advocate (Nemeth et al., 2001). This finding is particularly important, as the only difference between the two individuals is that the consistent devil's advocate was *asked* to play a role and yet, this appears to have a detrimental effect on his performance (Nemeth et al., 2001).

Authentic dissent, compared to such contrived dissent, results in stronger arguments, a more effective search for information, and higher quantity and higher quality decisions (Schulz-Hardt et al., 2002; Nemeth et al., 2001). As stated earlier, Amason (1996) suggested that it would be most beneficial to focus on identifying conditions that will create an environment in which task conflict feels authentic. In line with Amason's suggestion, these studies suggest that the devil's advocate can attempt to replicate authentic dissent but ultimately dissent must be authentic

to produce the best possible outcome on group performance. Considering the superiority of authentic dissent over contrived dissent, it is necessary to establish conditions for creating authentic dissent to maximize creativity.

Framing Instructions to Support Team Creativity

Brainstorming Instructions

The first mechanism by which a group can effectively use authentic dissent is by framing the situation to promote a creative outcome. Over the last fifty years, the most popular method for framing creative tasks has been Osborn's traditional brainstorming instructions (1961). Intuitively, the instructions may appear to be the most beneficial manner to achieving creativity. However, these instructions have primarily gone unquestioned in the field and the research has not provided much support (Dunnette, Campbell, & Jaastad, 1963; Paulus, Dzindolet, Poletes, & Camacho, 1993). Considering the benefits of dissent (Nemeth et al., 2001; Schulz-Hardt et al., 2002), particularly in terms of creativity (Nemeth & Kwan, 1985; Nemeth & Kwan, 1987), encouraging group members to criticize other's ideas may allow for the most creative group performance.

The main tenets of brainstorming instructions are to express any ideas that come to mind, avoid criticism of one's own or other's ideas, encourage "freewheeling", and to combine or improve the ideas of others (Osborn, 1961). While Osborn originally claimed that groups using this technique could outperform individuals, research since Osborn's original publication has argued otherwise (e.g. Dunnette et al., 1963; Paulus et al., 1993; Taylor, Berry, & Block, 1958; for review, see Goldenberg & Wiley, 2011).

Most individuals believe that they will perform better on a brainstorming task in a group than alone (Paulus et al., 1993) and that group interaction is stimulating (Taylor et al., 1958). In addition, interactive groups believe that they are more productive compared to nominal groups after performing a brainstorming task (Paulus et al., 1993). However, in a review of the brainstorming literature, 18 of 22 studies found that nominal groups (groups composed of individuals working independently) outperformed real groups when both received brainstorming instructions. The remaining four studies found no difference between nominal groups and real groups (Diehl & Stroebe, 1987). This lack of support for brainstorming calls the practice itself into question.

An Alternative Form of Framing Instructions

Considering the lack of empirical support, traditional brainstorming instructions in a group context should not simply be reevaluated; they need to be exchanged for an alternative form of instructions. While many researchers have ignored the possibility of instructions different from that of brainstorming, Bouchard (1972b) has demonstrated that other methods of approaching a creative problem can be superior to brainstorming instructions. In this study, "personal analogy" groups, in which subjects took turns acting as the creative object, produced a significantly higher number of ideas than brainstorming groups on four of the nine creative tasks. The brainstorming groups did not outperform the "personal analogy" groups on any of the remaining creative tasks (Bouchard, 1972b). This further supports the proposition that brainstorming instructions are not the most beneficial approach to framing a creative problem, as Osborn originally believed.

In attempting to find an improved form of instructions, it is crucial to reevaluate one of Osborn's brainstorming instructions: the proposal to not criticize one's own and other's ideas.

Although such instructions may foster more positive feelings among group members, higher comfort and morale does not necessarily lead to higher creativity. In fact, higher comfort among group members can lead to higher *perceived* creativity but not *actual* creativity (Nemeth & Ormiston, 2007). This further supports the credence that brainstorming instructions may not be the most effective form of instructions.

Rather than avoiding criticism in groups, embracing debate among group members may have a more positive effect on group creativity. Goldenberg and Wiley (2011) reviewed Osborn's brainstorming instructions and argued against the suggestion to avoid criticism. Rather, Goldenberg and Wiley (2011) support the value of criticism and dissent in groups working on creative tasks. Furthermore, Nemeth and Nemeth-Brown (2003) acknowledge that individuals almost always outperform groups on creativity tasks. The authors argue that groups can be even more creative than individuals if dissent is used effectively (Nemeth & Nemeth-Brown, 2003). Considering the benefits of dissent and task conflict and the lack of support for brainstorming, the following hypothesis was formulated:

Hypothesis 1: Groups provided with framing instructions encouraging task conflict will produce more creative solutions compared to groups provided with framing instructions encouraging brainstorming.

Nemeth, Personnaz, Personnaz, & Goncalo (2004) found that groups provided with instructions to criticize another's ideas produced at least as many ideas as brainstorming groups provided with traditional brainstorming instructions. Additionally, there is some evidence that the debate groups actually elicited more ideas as the debate groups had significantly more ideas than the brainstorming groups in total production (Nemeth et al., 2004). Furthermore, dissent fosters independence (Nemeth & Chiles, 1988) and increases information sharing (Schulz-Hardt et al., 2006). Moreover, dissent can lead to innovation in decision-making scenarios involving high levels of participation (De Dreu & West, 2001). While dissent may lead to a more uncomfortable experience for the group members involved, it can potentially create an

environment in which individuals can freely express their opinions, ultimately increasing group

creativity (Nemeth & Nemeth-Brown, 2003).

Membership Change

For groups that want to incorporate dissent to promote creativity, membership change

may be a viable option. As groups continue to work with one another, they may be less likely to

voice a dissenting opinion (Skilton & Dooley, 2010). Contrarily, dissent may be more likely to

be tolerated or even encouraged in groups that undergo membership change (Nemeth &

Ormiston, 2007). For a richer understanding of the varying effects of dissent on stable and

unstable teams, a discussion on mental models in a group setting is warranted. Mental models are

formed as group members come to understand the actions and motives of others as they

increasingly interact with one another (Cannon-Bowers, Salas, & Converse, 1993). Considering

that mental models take time to develop, it is important to consider the effects of team longevity.

The Effect of Mental Models on Group Decision-Making

Mental models describe, explain, and predict systems in an individual's environment

(Rouse & Morris, 1986). Mental models have been utilized at the group level as a means to

describe group cognition (e.g. Cannon-Bowers et al., 1993; Klimoski & Mohammed, 1994).

Shared mental models are "knowledge structures held by members of a team that enable them to

form accurate explanations and expectations for the task, and, in turn, to coordinate their actions

and adapt their behavior to demands of the task and other team members" (Cannon-Bowers et al.,

1993, p. 228). Klimoski and Mohammed (1994) describe a similar group cognition construct

referred to as team mental models. Team mental models have a similar effect as they allow team

members to anticipate future team behaviors, which allow them to exert effort in an efficient

manner (Klimoski & Mohammed, 1994).

In both of these seminal works on mental models at the group-level, the authors warn

against the dangers of a strong mental model (Cannon-Bowers et al., 1993; Klimoski &

Mohammed, 1994). In describing "Too Much of a Good Thing," Cannon-Bowers et al. (1993)

explains that a shared mental model in which team members hold very similar knowledge

structures may lead to excessive conformity and an incorrect decision as a result. Klimoski and

Mohammed (1994) echoed this proposition in their discussion on the "dark side" of team mental

models. If a team mental model overlaps excessively, it may diminish the team's ability to

evaluate and make decisions (Klimoski & Mohammed, 1994). Extrapolating from these two

studies, excessively overlapping shared/team mental models can reduce a team's decision-making

ability by leading team members to view the situation in a similar manner and reducing team

members' ability to explore all options available (Cannon-Bowers et al., 1993; Klimoski &

Mohammed, 1994).

Repeat Collaboration

Research suggests that teams that work together for an extended period of time tend to

adopt similar behaviors and work patterns, resulting in an ineffective survey of the situation at

hand and a less creative outcome (e.g. Katz, 1982; Skilton & Dooley, 2010). An example of this

is a process known as repeat collaboration. Repeat collaboration can be defined as "collaboration

on creative projects in which internalized, distributed team mental models are carried forward by

team members who have worked together on earlier projects" (Skilton & Dooley, 2010, p.122).

Teams that have had success in the past are often chosen to work together on a subsequent project

(Skilton & Dooley, 2010). While it may seem that past success is one of the best determinants for

future success, repeat collaboration ultimately produces a less creative outcome (Skilton & Dooley, 2010). Groups that engage in repeat collaboration have a tendency to hold strong team mental models, which affects each stage of the creative abrasion process. Creative abrasion is "a sequence of processes key to creative project performance" (Skilton & Dooley, 2010, p. 119). These strong mental models reduce the number of ideas generated, disclosed, and advocated for and cause the team to converge on alternatives that are familiar to team members. This repeat collaboration process ultimately results in a less creative outcome (Skilton & Dooley, 2010).

In a study on R&D teams, Katz (1982) found that high tenured project teams communicate less with each other, communicate less with other divisions within the organization, and communicate less with sources external to the organization compared to tenure project teams of an average tenure. Additionally, these high tenured project teams performed worse in comparison to project teams of an average tenure. The reduced performance seen by high tenured project teams most likely occurs due to an increased homogeneity among team members. This increased homogeneity results in team members adopting similar tendencies and isolating themselves from outside sources. To break the reinforcing cycle of increasing homogeneity and isolation, Katz (1982) suggests bringing in a newcomer as a novelty-producing stimulus. This has two potential benefits for high tenured project teams. First, the newcomer can bring in new ideas of his or her own to the team. Second, the old-timers will be revitalized by the newcomers' actions and will consider ideas that would have been omitted otherwise (Katz, 1982).

The Effect of Membership Change on Creativity

Early research by Ziller (Ziller, Behringer, and Goodchilds, 1962; 1965) investigated the effects of stability of groups, defined in terms of closed and open groups, on creativity. Closed groups retain the same group composition with no membership changes taking place (Ziller,

1965). On the contrary, open groups are characterized by a continuous change in group composition as membership change occurs repeatedly (Ziller, 1965). Closed groups are limited in their ability to discover opposing views, which differ from their own (Ziller, 1965). On the other hand, open groups are constantly exposed to new information as members come and go, which can result in increased creativity (Ziller, 1965).

Hypothesis 2: Teams that undergo membership change will produce more creative outcomes compared to teams with constant membership.

In an experiment several years prior, open groups expressed more captions and more humorous captions to Saturday Evening Post cartoons than did closed groups (Ziller, Behringer, & Goodchilds, 1962). Ziller suggested that one reason membership change is beneficial is that the group becomes focused specifically on the task at hand (1965; Ziller et al., 1962).

Recent research has further supported the proposal that membership change increases creativity (Choi & Thompson, 2005; Nemeth & Ormiston, 2007). These studies have also offered explanations for the advantageous effects of membership change on creativity. Choi and Thompson (2005) demonstrated that the social interaction of the newcomer is especially important in the membership change. In this study, open groups, closed groups, and yoked groups were compared. The yoked groups remained stable and were provided with additional ideas in an attempt to prime subsequent ideas. The open groups had a significantly higher fluency and flexibility than both yoked and closed groups, showing that the social interaction of the newcomer is more important than simply being exposed to new ideas (Choi & Thompson, 2005).

Nemeth and Ormiston (2007) came to a number of interesting findings in regards to group beliefs in comparison to actual group performance. These authors found that closed groups reported higher comfort and friendliness of other members when compared to open groups. Additionally, closed groups believed that they were more creative than open groups. Despite

these beliefs, open groups generated more ideas and more creative ideas than did closed groups

(Nemeth & Ormiston, 2007). These findings suggest two important points regarding creativity.

First, to produce the most creative outcome, the group may need to experience a certain level of

discomfort (Nemeth & Ormiston, 2007). Second, perceived creativity is not necessarily

correlated with actual creativity (Nemeth & Ormiston, 2007).

Combined Effects of Framing Instructions and Membership Change

Membership change is a common occurrence in teams, which may cause an

uncomfortable experience for those involved. Introducing the membership change in a specific

manner may amplify or dampen the potential beneficial effects of membership change on a

team's creative output. More specifically, groups that undergo membership change and are

exposed to task conflict instructions are more likely to produce a creative outcome because the

group members are encouraged to engage in criticism and therefore, more likely to voice dissent.

On the contrary, groups that undergo membership change and are exposed to brainstorming

instructions are less likely to produce a creative outcome because the group members are

encouraged to refrain from criticism and as a result, less likely to voice dissent. In line with the

above propositions, the following hypothesis is proposed:

*Hypothesis 3: Framing instructions will moderate the relationship between membership change
and team creative performance, such that teams that undergo membership change will be
positively related to team creative performance if the team receives framing instructions
supporting task conflict.*

Figure 1-1. Proposed Model.

Membership
Change   Team Creative Performance
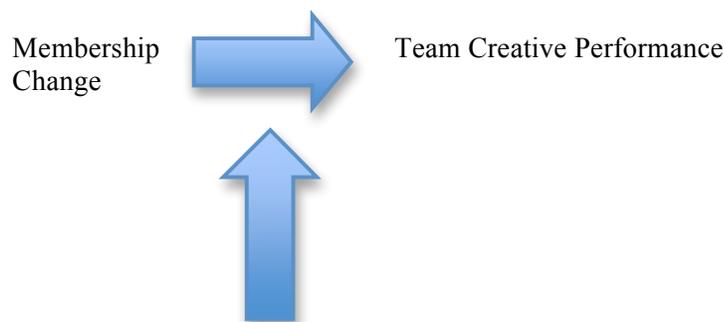
Framing Instructions

Chapter 2

Method

Participants

Participants were recruited through a subject pool as a requirement for course credit at the Pennsylvania State University. A total of 189 participants consisting of 63 teams of three individuals each participated. The task conflict instructions condition consisted of 32 teams and the brainstorming condition consisted of 31 teams. The membership change condition was comprised of 32 teams and the control condition was comprised of 31 teams. The sample consisted of 77 males and 115 females. The average age was 19.32 with a standard deviation of 2.92.

Research Design

This study featured a 2 (framing) x 2 (membership change) experimental design. The teams were randomly assigned to either the experimental or control condition for each manipulation. The framing instructions were delivered verbally by an experimenter and were provided in an instructions packet provided to the participants. The instructions packets differed depending on the framing condition the team was placed in, such that the task conflict condition received instructions that encouraged them to criticize others' ideas when necessary and the brainstorming condition instructions advised teams to avoid criticism in all situations. For further information on the framing instructions, see Appendix A. If applicable, the membership change took place prior to the second task.

Procedure

Seven individuals signed up for each time slot to ensure that a sufficient number of participants were present for the study to be conducted. Six individuals were randomly assigned to form two teams of three participants each. If all seven individuals were present, the participant that was not assigned to a team was either asked to complete an unrelated survey or was dismissed. Once the teams were formed, each team was assigned to separate adjacent rooms according to the randomly generated number they received. Furthermore, each participant was assigned to a specific computer according to the randomly generated number they received. Prior to starting the first task, all participants individually completed online surveys.

After the participants completed the surveys, the experimenter read instructions to briefly introduce the first task to the participants. Subsequently, the experimenter provided participants with written instructions describing the first task. In addition to the general description of the task, participants were informed that the five teams that develop the best ideas would each have their ideas submitted to a student organization that promotes the development of philanthropy at Penn State. Additionally, the participants were told that this organization would eventually choose one of the five ideas and implement the team's plan for the charity. Following the study, the participants were informed that these ideas are actually only for the purposes of the research team and would not be submitted to any student organization. This deception was used in an attempt to promote motivation and investment in the study. Additionally, these written instructions also included the framing instructions pertaining to the condition (i.e. either brainstorming or task conflict instructions). The same framing instructions were given for the same testing session (i.e. *either* both teams received brainstorming instructions *or* both teams received task conflict instructions during the same testing session). The participants were given

90 seconds to read over this information. A shortened version of the instructions for the two tasks is provided in Appendix B.

Following completion of these 90 seconds, participants were asked to individually generate ideas for the first task. This individual idea generation phase was intended to provide participants with starting ideas for the subsequent group phase. Participants were allotted three minutes to complete the individual idea generation.

Following the completion of the individual idea generation phase, the experimenter reminded the participants of the framing instructions relevant to their condition. In the task conflict framing condition, the experimenter provided an example of how to criticize another group member's idea.

One team member in each room was randomly assigned as the recorder of ideas. The recorder was instructed to record all of the ideas of his or her team. The experimenter then opened a blank Microsoft Word document on the recorder's computer for this individual to type up the ideas that the team generates for task one.

In task one, teams were allotted fifteen minutes to generate ideas for a charitable event. After completing the first task, all participants individually completed online surveys.

After the participants completed the surveys, if the teams received the membership change condition, one individual from each team was randomly selected to change places with each other. Once the membership change individuals were selected, they were instructed, "Participant 2 (or 5), you have been randomly selected to change places with a member of the other team. Please join the other team in the next room. Take all of your materials with you. For the remaining team members, you will be receiving a new team member." Upon entering the new room, to promote contribution, the membership change individual was instructed, "You are encouraged to vocalize any ideas from your previous group as you work on the upcoming task." In the no membership change condition, the teams remained stable for both tasks.

The experimenter read instructions to briefly introduce the second task to the participants. Subsequently, the participants received written instructions, which described task two and included the appropriate framing instructions. The participants were allotted 90 seconds to read over this material. Subsequently, the experimenter once again verbally reminded the participants of the framing instructions relevant to their condition. For the second task, teams were asked to select and develop a plan for a charitable event based on the ideas they generated in the first task. The recorder was instructed to record all of the ideas of his or her team. The recorder submitted the team's final idea on an online document through the Qualtrics website called the Group Final Idea Form. The questions provided on this form are listed in Appendix C. Following the second task, all participants individually completed online surveys. Participants were then debriefed on the study purpose and manipulations and subsequently, dismissed.

Measures

Task conflict. Task-based conflict was assessed using four items from Jehn's (1995) eight-item Intragroup Conflict scale (α =.773). The items are measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include, "Members of my team often disagree about opinions regarding the work being done," and "There frequently are conflicts about ideas in my team."

Creative Performance. To assess the creative performance of teams' final ideas, eight undergraduate coders were trained to rate creativity on three dimensions. These coders rated creativity based on the quality, originality, and elegance of each idea. The eight coders, a doctoral candidate in Industrial/Organizational Psychology, and the principal investigator arranged two 90-minute meetings to establish benchmarks for low, medium, and high levels of each dimension of creative performance. Benchmarking is used to provide examples on a

spectrum ranging from an exceptionally low level to an exceptionally high level of a certain feature for the rater to judge a certain idea against. This technique allows raters to consider any given product in relation to the optimal level of a dimension (Redmond, Mumford, & Teach, 1993). Upon establishing benchmarks, the eight coders individually coded for the quality, originality, and elegance of each idea on a 5-point Likert scale ranging from 1 (low) to 5 (high).

The coding scheme used in this study (i.e. quality, originality, elegance) was inspired by a similar coding scheme in Redmond, Mumford and Teach (1993) and the Creative Product Semantic Scale developed by Besemer and O'Quin (1999). Redmond et al. (1993) used quality and originality as well in their study to assess the creativity of a participant playing the role of a subordinate in a lab study. The CPSS is a tool intended to allow untrained judges to provide objective ratings of the creativity level of products. The CPSS is composed of three dimensions: novelty, resolution, and elaboration and synthesis. Elegance, one of the three dimensions of creativity used in the present study, was used as a sub dimension of elaboration and synthesis in the CPSS model (Besemer & O'Quin, 1999).

Interrater reliability for quality (α=.923), originality (α=.885), and elegance (α=.900) suggests that the rating was generally consistent for the three dimensions across all eight coders.

Covariates

Relationship Conflict. Bearing in mind that relationship conflict is often highly correlated with task conflict, relationship conflict was measured as a potential covariate. Relationship conflict was assessed using three items from Jehn's (1995) eight-item Intragroup Conflict scale (α = .777). The items are measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include, "There is friction among members in my team," and "There are personality conflicts among members in my team."

Participative safety. Participative safety is defined by a non-threatening environment in which group members encourage the expression of ideas and opinions (Anderson & West, 1998). Due to the importance of participative safety on team processes, participative safety was measured in order to serve as a potential covariate. Participative safety was assessed using an adapted version of Anderson and West's (1998) 24-item Participative Safety scale (α =.832). The adapted version contains nine items (cut down to eight items in this version). The items are measured on a five point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include, "Team members keep each other informed about work-related issues in the team," and "Members of this team feel understood and accepted by each other."

Writing Quality. Analyses controlled for writing quality to ensure that it would not affect the creativity of each team's final idea (α =.889). The eight undergraduate coders also rated writing quality on a 1 (low) to 5 (high) Likert scale.

Manipulation Check

A manipulation check was conducted to ensure that the task conflict framing instructions actually had the intended effect on the groups placed in that condition. In other words, task conflict groups should have reported significantly more task conflict compared to brainstorming groups. Participants completed Jehn's (1995) four-item task conflict scale following each task. A T-test was conducted and showed that a 2-tailed significance arose for the first task (p =.026) but not for the second (p =.144). For the first task, groups in the task conflict framing condition reported significantly more conflict (M=2.03) in comparison to brainstorming groups (M=1.83). These findings suggest that the framing instructions likely had a stronger effect at the beginning of the study when the participants were first introduced to their content and to one another. Later

in the study, they may have been more concerned with the content of their ideas than the recommended way to approach the task. However, the fact that the task conflict instructions only seemed to have an effect during the first task may be preferable as Farh and colleagues (2010) suggest that task conflict is only beneficial to team creativity during early stages of the group's functioning. Additionally, Jehn and Mannix (2001) found that low-performing groups experienced the highest level of task conflict during the later stages of the project. These authors suggest that task conflict should be avoided at this time as the implementation of an idea or product is the most pertinent matter for the group and therefore, requires consensus rather than conflict from the group members involved (Jehn & Mannix, 2001).

Chapter 3

Results

In order to test the hypotheses proposed in this study, a one-way analysis of variance was conducted using bootstrapped estimates. Relationship conflict and writing quality were controlled for in the analyses to ensure that these variables did not affect the true relationships present. There was no significant effect for framing on quality (F (1,186)=1.762, p =.186). However, there was a significant main effect of framing on originality (F (1,186)=6.557, p =.011) such that brainstorming groups produced more original ideas (M=2.692) compared to conflict groups (M=2.394). Likewise, there was a significant main effect of framing on elegance (F (1,186)=16.211, p=.000) such that brainstorming groups produced more elegant ideas (M=2.987) compared to conflict groups (M=2.681). The preceding three findings suggest that hypothesis 1 is not supported. In fact, some support was found for the reverse trend as brainstorming groups outperformed conflict groups on two of the three dimensions of creativity.

There was no significant relationships between membership change and quality (F (1,186)=1.644, p=.201), originality (F (1,186)=1.942, p=.165), or elegance (F (1,186)=.324, p=.570). The preceding three findings suggest that hypothesis 2 was not supported, as no significant relationships were found between the change condition and the three dimensions of creativity.

There was no interaction between the membership change and framing conditions on the quality facet of creative performance (F (1,186)=.243, p=.623) nor on the originality (F (1,186)=2.357, p=.127) nor elegance (F (1,186)=.186, p=.667) dimensions. Therefore, hypothesis 3 was not supported.

Exploratory Analysis

Fairchild and Hunter (conditionally accepted) found an interaction between task conflict and participative safety, such that jointly high levels of task conflict and participative safety led to products of higher originality. Members of groups high in participative safety may be more likely to disclose unique information rather than keeping it to him or herself out of fear of judgment by others. In teams low in participative safety, a negative relationship occurred between task conflict and originality. In high participative safety teams, a positive relationship occurred between task conflict and originality (Fairchild & Hunter, conditionally accepted). Based on this finding, the present study investigated potential interactions involving the effect of participative safety on drivers of team originality.

Thus, a hierarchical regression analysis was conducted to test for a potential interaction of participative safety with the membership change manipulation on the originality facet of creative performance. Given the relatively small sample size in this study, a relaxed p-value (p < .10) was used to assess the significance of this test. Through this analysis, it was found that participative safety did moderate the relationship between membership change and teams' originality (p=.077). That is, when participative safety was low (-1 standard deviation), a negative relationship occurred between membership change and originality. Conversely when participative safety was high (+1 standard deviation), membership change was positively related to originality. See the table on page 26 for further statistics on the interaction. See the graph on p. 27 for a visual depiction of the interaction.

Table 1-1. Interaction Statistics

Model		Unstandardized Coefficient	Standard Error	Standardized Beta	t	Sig.
1	(Constant)	2.63	.102	--	25.76	
	Relationship Conflict	-.07	.099	-.049	-.69	.49
	Writing Quality	.56	.072	.52	7.86	.00
	Participative Safety	-.22	.14	-.11	-1.58	.12
	Framing Condition	-.30	.12	-.17	-2.55	.01
	Membership Change	.13	.12	.07	1.08	.28
2	(Constant)	2.64	.80	--	3.3	.00
	Relationship Conflict	-.06	.10	-.05	-.65	.52
	Writing Quality	.57	.07	.53	7.95	.00
	Participative Safety	-.41	.18	-.21	-2.34	.02
	Framing Condition	-.32	.12	-.18	-2.71	.01
	Membership Change	-1.72	1.04	-.96	-1.65	.10
	Interaction (Change/Safety)	.46	.26	1.03	1.78	.08

Figure 1-2. Interaction
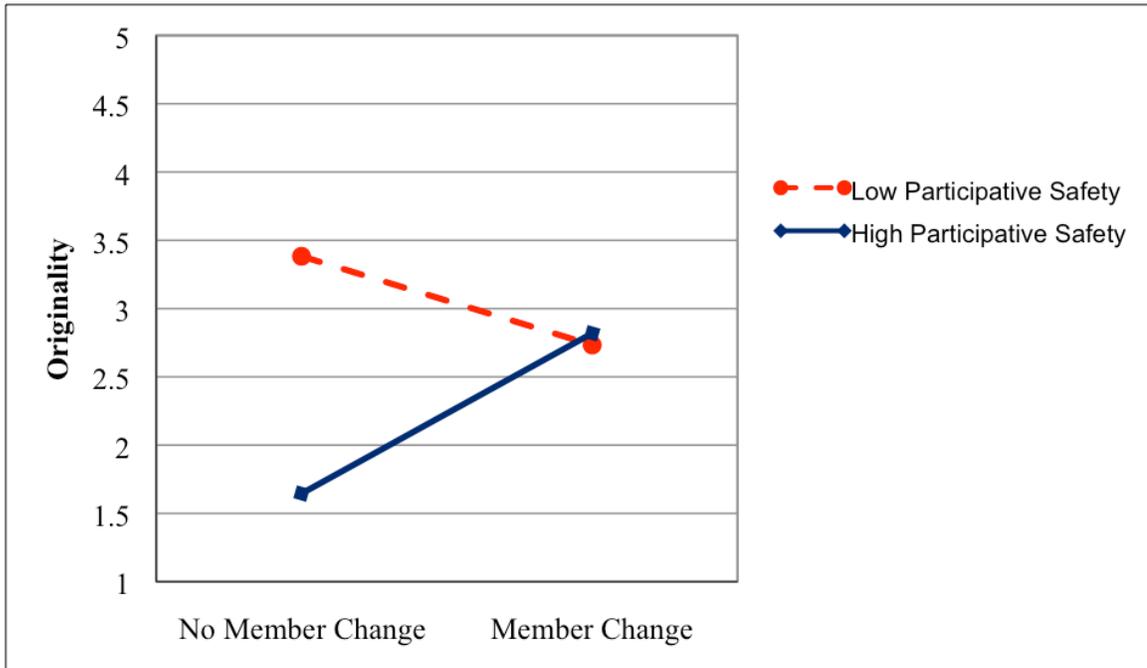
Chapter 4

Discussion

The present study investigated the effects of framing instructions and membership change on team creativity. After controlling for relationship conflict and writing quality, none of the three hypotheses were supported. In fact, for hypothesis 1, some effects were in the opposite direction from what was hypothesized. Specifically, it was hypothesized that task conflict groups would produce more creative ideas in comparison to brainstorming groups. However, brainstorming groups produced more original and more elegant ideas in comparison to task conflict groups. No significant difference was found between the two groups on the quality dimension. The remaining two hypotheses did not have any significant relationships. Interestingly, an exploratory regression analysis revealed an interaction between membership change and participative safety on originality, such that membership change positively impacted teams' originality when participative safety was high.

Effects of Framing Instructions on Creativity

The unexpected partial support for brainstorming groups' superior performance warrants further discussion. The findings from this study suggest that brainstorming groups produced ideas of higher novelty (high in originality). Additionally, their ideas may be more cohesive and devoid of unnecessary or awkward details (high in elegance). However, brainstorming groups did not produce ideas of a higher quality. Therefore, simply because the brainstorming groups produced ideas that were novel and well-organized, does not necessarily mean that their ideas were superior in terms of overall value.

Several potential explanations may provide clarity for the findings involving the framing instructions. For one, participants may not have been as receptive to the manipulation as intended. The manipulation check suggests that task conflict groups experienced higher levels of task conflict in comparison to brainstorming groups for task one but not for task two. While this finding suggests that task conflict occurred at an appropriate time in task conflict groups (Farh et al., 2010; Jehn & Mannix, 2001), the manipulation may not have been as strong as needed for task conflict to benefit team creativity. The majority of studies on task conflict have used an organizational sample to explore the potential effect of the variable. Very few studies have manipulated task conflict in a lab experiment such that participants are instructed to engage in task conflict (e.g. Nemeth et al., 2004). Manipulating task conflict in such a manner may be analogous to the devil's advocate approach. In this approach, one participant is asked to take the opinion of the opposing viewpoint to provide a more balanced perspective of the present situation (Nemeth et al., 2001). Just as the devil's advocate is an artificial construction of an individual's opposing view, manipulating task conflict in a manner such as the one used in this study may be an artificial construction of a group debate. Amason (1996) suggested that an environment conducive to task conflict may be the most practical manner to realize its benefits. The present study attempted to produce this environment by encouraging participants to criticize each other's ideas and debate when necessary. By manipulating task conflict *itself*, the present study may have created an environment that was actually more artificial than authentic. Perhaps looking at other factors that induce task conflict may be a more pragmatic manner to creating an authentic environment of task conflict.

An additional potential explanation for the lack of support for the first hypothesis relates to the participants' perceptions of the instructions they received. Brainstorming instructions are quite popular in educational and organizational settings and thus, participants have most likely encountered this form of instructions on numerous occasions. Based on this supposition, one can

assume that participants feel comfortable in utilizing these instructions as they have used them in

previous situations of a similar nature. The previous experience and comfort level associated

with brainstorming instructions may have ultimately allowed these groups to outperform task

conflict groups on the originality and elegance dimensions. Conversely, task conflict has only

recently been explored in the literature and is not used extensively in practical settings.

Participants most likely have not received instructions of this nature previously. Considering that

task conflict is often an uncomfortable experience and highly correlated with relationship conflict

(Amason, 1996), participants may be reluctant, even unwilling, to engage in such behavior even

when instructed to do so. Despite the fact that the experimenter is explicitly informing

participants that criticizing ideas is generally beneficial, task conflict may run counter to

participants' perceptions of effective creativity processes. As a result, they may avoid task

conflict behavior at all costs.

Effects of Membership Change on Creativity

Exploratory Analysis

The second hypothesis, namely that groups undergoing membership change would

produce more creative outcomes than groups that remained stable, received no support.

However, an exploratory analysis may provide further insight into this relationship. This

exploratory analysis determined that an interaction occurred between membership change and

participative safety on the originality dimension. In low participative safety teams, a negative

relationship between membership change and originality emerged. However, in high

participative safety teams, membership change was positively related to originality. This finding

suggests that in teams that have undergone membership change, an original outcome will only

result when the team members are willing and receptive to hearing other members' ideas. When membership change occurs in a team characterized by a hostile and uninviting environment, originality suffers as a result. In sum, it appears that when participative safety occurs at a high level in a membership change team, originality benefits.

Choi and Thompson (2005) found that the social interaction, rather than simply the introduction of new ideas, is what makes a difference in membership change. This newfound social interaction of the newly configured team may be an uncomfortable experience as Nemeth and Ormiston (2007) found that change groups reported lower levels of friendliness and comfort than stable groups. However, findings from this study suggest that change teams that openly invite the expression of ideas are more likely to produce original ideas. Therefore, it may be that the newfound social interaction can manifest in one of two ways, depending on the participative safety level present in the group. When participative safety is low, the newcomer may be less willing to express his or her ideas from the previous group and therefore, the team cannot benefit from the membership change. However, when participative safety is high, the newcomer may be more willing to express the previous group's ideas and therefore, the team is exposed to a pool of new ideas to build on. As a result, the team can use the unique combination of their own previously generated ideas and the other team's ideas of a completely different nature to produce highly original ideas.

Implications

The interaction found in the exploratory analysis has several implications for future research and practical settings. To date, this is the first study that has found a clear interactive effect of membership change and participative safety on any facet of creative performance. Researchers have previously discovered the beneficial effect of membership change on team

creativity (e.g. Choi & Thompson, 2005; Nemeth & Ormiston, 2007; Ziller et al., 1962).

However, moderators of this relationship have generally not been explored. The present findings

suggest that in teams undergoing membership change, an original idea is more likely to be

developed to completion in an environment characterized by participative safety. Future research

needs to investigate the nature of this relationship to discover how participative safety arises and

how it leads to more original ideas in these teams.

The findings of the exploratory analysis also have important implications for

organizational settings. These findings suggest that creativity may not naturally occur as a result

of membership change as previous studies have suggested. Rather, the manager may have to play

an important role in shaping the team climate to ensure that the team produces an original idea. If

the team demonstrates a generally hostile and uninviting environment in which voicing a new

idea is almost always shot down, the team will not benefit from the introduction of a newcomer.

However, if the team is inviting and welcoming of all opinions and ideas, the newcomer may be

more willing to express his or her novel ideas, which may stimulate the idea generation of the

other team members, ultimately allowing for the production of more original ideas. Managers

that want their teams to produce out-of-the-box and inspired ideas may want to focus on creating

an environment marked by open discussion of all members.

Limitations

This study has a few limitations to consider. First, this study exclusively used

undergraduate students as participants in experimental sessions. Practitioners may argue that the

findings of this study cannot generalize to a workplace setting in which nearly all of the

employees are college educated and possibly established in their respective careers. However,

the majority of these college students will soon contribute as successful employees to many of

these organizations as they enter the workforce. Furthermore, similar to an authentic work environment, the participants represent a diverse background in terms of socioeconomic status, ethnicity, and knowledge content. This contributes to a unique and varied perspective in approaching a group task, which one would expect to find in an organizational setting. Moreover, several researchers have noted that the popular claim that lab studies demonstrate low external validity is unwarranted (Anderson, Lindsay, & Bushman, 1999; Berkowitz & Donnerstein, 1982).

A second limitation to this study is the short timeframe provided for the membership change. For teams in the membership change condition, team members get acquainted with one another for fifteen minutes during the first task and then the change occurs. On the other hand, in organizations, teams often remain stable for months before a member leaves or a new member joins the team. One could argue that the team formed in the first task of this experiment does not represent a cohesive work group as the participants are still getting to know one another. Despite this lack of parallelism in team longevity, I would argue that the end result of the membership change in the present study is essentially the same. In the midst of a partially completed task, newcomers bring their ideas to the team, receive new ideas from the team, and need to get acquainted with the team in the process of membership change. In an organizational setting, the newcomer will also experience the three aforementioned actions as the team is nearing completion of the task at hand. Considering that the general behavioral outcomes are actually quite similar, the temporal differences between this study and organizational practices should not limit the generalizability to applied settings. Moreover, Choi and Thompson (2005) and Nemeth and Ormiston (2007) both used lab settings similar to the one used in this study to test the effects of membership change on team creativity. As the results of both of these studies demonstrated, examining membership change in a controlled lab setting can generalize to an organizational setting.

Despite the limitations, I believe that this study offers an important contribution to the creativity literature. I set forth three hypotheses regarding the effects of framing instructions and membership change on creativity. None of the proposed hypotheses were supported, however, an exploratory analysis revealed that an interaction occurred between membership change and participative safety on originality. This finding suggests that in membership change teams, highly original ideas were produced only when participative safety was present. I hope that this study inspires future research on membership change and participative safety as this may show insight into how teams produce creative outcomes in scenarios involving change.

Framing Instructions

The brainstorming and task conflict instructions used in this study were inspired by the Nemeth et al. (2004) study.

Brainstorming Condition. Participants in the brainstorming condition received a revised version of Osborn's traditional brainstorming instructions (1961). The verbal instructions were as follows, "Before starting on the group task, I would like to inform you of several suggestions for how to work in a team. In general, it is a good idea to not criticize others' ideas or opinions. It will be most beneficial for the team and the final idea to avoid debating over the ideas proposed. If at any time you want to be reminded of these suggestions, refer to the Instructions for Teamwork on page 2."

> The written instructions were as follows:
> **II. Instructions for Teamwork**
> A. **Avoid expressing criticism** even if you are opposed to another's idea
> 1. Even if you do not agree with an idea, avoid making negative comments.
> B. **Avoid debating** with your teammates
> 1. Do not criticize other's opinions
> 2. Avoiding debate will improve the quality of the outcome of the task

Task Conflict Condition. The verbal instructions were as follows, "Before starting on the group task, I would like to inform you of several suggestions for how to work in a team. In general, it is a good idea to engage in debate in regards to the task. It will be most beneficial for the team and the final idea to debate over the ideas proposed. On the Instructions for Teamwork on page 2, you are provided with several suggestions for criticizing others' ideas. For example, you can say, 'Have you considered…and then state your evaluation.' You can use any variation of this criticism. It's just important that you voice your criticism when you disagree with an idea. If at

any time you want to be reminded of these suggestions, refer to the Instructions for Teamwork on

page 2."

The written instructions were as follows:
II. Instructions for Teamwork
A. **Express disagreement** when you are opposed to another's idea
1. "(Well) what if we…"
2. "Have you considered…"
3. "It would be better if…"
4. Variations of these criticisms can also be used
B. **Debating** will help your team produce the best solution
1. Do not readily accept others' ideas that you disagree with under any circumstances
2. Expressing disagreement when necessary will improve the quality of your product

Appendix B

Task Instructions

Task One: Considering the success of Penn State's THON, the university would benefit from starting another charitable event. Penn State sees charity as a good way for students to spend their time and for the university to gain a reputable name. For your first task, you will be asked to generate ideas for multiple potential charitable events and provide further detail for the specifics of each of these events. To give you a frame of reference, teams typically generate five to ten ideas in this first task.

Task Two: In task one, you were asked to generate a list of potential ideas for charitable events. Now, for task two, there are two objectives that you will be asked to complete. First, you must choose a charitable event based on the list you generated in the first task. You can either select an event that you have already created or combine several events into one. Second, develop an effective and thorough plan for the charitable event that you select. Consider ALL of the factors that would be needed for this charity to become successful in the near future.

Appendix C

Group Final Idea Form

Describe the charitable event that your team has developed.

Why did you select this event over the other events your team generated in task one?

What is the cause or purpose of the event?

Where should this event take place?

When should this event take place? (What season/time of year?)

Would you need to raise money for this event? If so, please describe how you would do so.

How would you raise awareness about this event?

Describe any other details that would be necessary in order for this event to succeed. Use as much detail as you feel is necessary.

Appendix D

Measures

Intragroup Conflict Scale from Jehn (1995)
Task Conflict (α =.773)
1. Members of my team often disagree about opinions regarding the work being done.
2. There frequently are conflicts about ideas in my team.
3. There is a lot of conflict about the work I do in my team.
4. There are differences of opinion within my team.
Relationship Conflict (α =.777)
1. There is friction among members in my team.
2. There are personality conflicts among members in my team.
3. There is tension among members in my team.

Participative Safety Scale (α =.832) from Anderson & West (1998)
1. Team members generally share information, rather than keeping it to themselves.
2. Members of this team have a `we are in it together' attitude.
3. Team members all influence each other with regard to our tasks.
4. Team members keep each other informed about work-related issues in the team.
5. Members of this team feel understood and accepted by each other.
6. Everyone team member's view is listened to even, if it is in a minority.
7. There are real attempts to share information throughout the team.
8. There is a lot of give and take within this team.

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ACADEMIC VITA

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Education

B.A., Psychology, 2013, The Pennsylvania State University, University Park, PA

Honors and Awards

- University Trustee Scholarship, 2013

- Schreyer Ambassador Travel Grant, 2012

- College of the Liberal Arts Scholarship, 2011

Association Memberships/Activities

- SIOP (Student Affiliate)

- Phi Beta Kappa

- Psi Chi

Research Experience

Research Assistant
2011-2013
Supervisor: Dr. Sam Hunter
Leadership and Innovation Laboratory
Industrial/Organizational Psychology

Research Assistant
2011
Supervisor: Dr. Peter Arnett
Sports Concussion Laboratory
Neuropsychology

Research Interests

Within the field of Industrial/Organizational Psychology, I am primarily interested in the areas of creativity, teams, and leadership.

Professional Presentations

The importance of leadership style in creating a psychologically safe environment through the mediating role of leader inclusiveness, Research Proposal, Maastricht University, School of Business and Economics, May 2012