The effects of minority opinion expertise and agreeableness on group interaction

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THE EFFECTS OF MINORITY OPINION MEMBER EXPERTISE
AND AGREEABLENESS ON GROUP INTERACTION

A DISSERTATION
SUBMITTED TO THE FACULTY
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Abstract

*Keywords*: small group decision making, minority opinion member, language usage
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The Effects of Minority Opinion Member Expertise
And Agreeableness on Group Interaction

Businesses are frequently using groups to make decisions and plan strategies for future growth in order to gain the synergy a group can provide (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Kerr & Tindale, 2004; Orlitsky & Hirokawa, 2001). However, groups can only add to the quality of decisions if they are effective in their work together. Businesses believe that the quality of decisions will be better when coming from groups than from the individual. Research to support this hypothesis, however, has produced mixed results (Brodbeck, Kerschreiter, Mojzisch, Frey, & Schulz-Hardt, 2002; Pavitt, 2003). Because of this variability in group decision quality, research into understanding the myriad of variables that impact group process is critical to helping organizations be more productivity and make better quality decisions. Several models of group decision making focus on the importance of information sharing among group members (cite). Hollenbeck, Lepine, and Ilgen (1996) proposed that group decision making effectiveness was contingent upon groups having members “being informed” or having expertise in the issues at hand as well as team members being able to appropriately weigh each others’s contributions to reach the most accurate decision.

When individual group members bring knowledge and expertise to group decisions making teams, it can only be useful when that information is shared. To determine how much information is shared in group discussions, studies have been designed using hidden profile schemes. This paradigm is where some information is shared with all members of the group, and some information is shared only with individual members of that group (Stasser & Titus, 1985). Lu, Yuan, and McCloud (2012) conducted a meta-analysis of 65 studies involving hidden profile schemes. In their analysis, they found that common information was shared significantly more
than unique information. This was moderated by group size, in that as the number of individuals with common information increased, so did the chance of that common information being shared. However, they found that when unique information is shared in larger groups, it seemed to have a stronger impact on the group’s use of that unique information in their decision. They also found that groups that fail to reveal unique information were eight times more likely to arrive at a suboptimal decision. Furthermore, this meta-analysis found that information coverage was more important to decision quality than was discussion focus.

Because of the value added of dissenting opinions to group decision quality, it is valuable to research how minority opinion members affect the group process and ultimately the outcome. Dooley and Fryxell (1999) found that within loyal teams, dissent was associated with higher decision quality. Social psychology research has found that members of groups are interested in understanding the opinion of a minority member, thus increasing the complexity of decision-making even as it increases tension within the group (Crano & Chen, 1998; Nemeth, 1986). Furthermore, minority dissent was found by De Dreu and West (2001) to improve team innovation but only under high levels of participation in decision-making by group members.

Not all minority opinion members, however, are created equal. It may be possible that for groups where minority opinion members are less well informed or are lower in expertise in the issue at hand, weighing their opinions less (e.g., ignoring their input) may result in enhanced group decision making. In contrast, groups that provide little weight to expert minority opinions may find themselves performing at suboptimal levels. Consequently, the purpose of this study is to examine how characteristics of minority opinion members influence group decision quality.
Background Literature

Group Decision-Making

Groups are units of two or more people who interact to achieve a common goal. Groups are created to complete tasks that require more than one individual to complete. Organizations use groups extensively with the hope that the quality of work produced by the group will exceed the quality of any one individual. Organizations have been asking what makes a group effective and why are some groups more effective than others. With a majority of decisions being made by groups in business, political, and educational settings, research in factors that affect group decision-making continues to be generated. Some of this research has found that groups perform better than the sum of each individual (Argote, Gruenfeld, & Naquin, 2000; Ilgen, 1999; and Sneizek & Henry, 1989), while other researchers have found the opposite to be true (Hill, 1982; Janis, 1982; and Karau & Williams, 1993). Because of this variability in results of group decision quality, it might be helpful to talk about what factors contribute to this variability.

Some factors that research has found that contribute to group performance that is lower than that of individual performance include groupthink and pressure to conform to majority. Groupthink is basically achieved due to the pressure of groups to reach a consensus (Janis, 1982). Janis further suggested that groupthink occurs most frequently when groups are homogenous and highly cohesive. Groups that have these characteristics might not be conducive for the presentation of alternative views. In groups that have more diversity, the pressure to conform to the majority may negatively impact group performance. This pressure may even lead groups to come a decision even if it is wrong (Allen & Levine, 1969).

Even though there may be some problems with group performance, logic suggests that no single individual could have all the best ideas. This is the rationale behind why so many
organizations rely on the work of teams, especially when it comes to difficult decisions. Research has shown that groups can generate more creative solutions (Paulus & Dzindolet, 1993) and correct mistakes that individuals might overlook (Orlitzky & Hirokawa, 2001). In order to more fully understand what makes groups effective or ineffective, one must examine group performance in more detail.

Group performance is typically conceptualized using an input-mediator-output-input model (Ilgen, et al. 2005) as depicted in Figure 1. Within this model typical inputs can include expertise, personality features of group members, group development, and minority influence. The output can be conceptualized as the quality of decisions and/or the level of acceptance of that decision. The process is the influence of mediators that link the inputs to outputs. One of the arguments against this model is that this is not a linear model, but instead must include the effect of feedback (Ilgen, et al., 2005). Furthermore, groups often engage in a new cycle of decision making and this includes the additive value of the outputs generated initially. Ilgen, et al. (2005) also proposed that the term Processes be changed to Mediation, thus creating the IMOI model, (or Input, Mediation, Output, Input) accounting for the cyclical nature of group functioning.

![Figure 1. Input-mediator-output-input Model](image-url)
Historically, groups decision-making has been through many theoretical evolutions of study from the concepts of field theory and interaction theory in the 1950-1960’s, to a move away from theory and toward more method based research in the 70’s, to another theory-based research period based on the functional approach, structurational approach, and other theory research to the current trend in group decision-making research of developing ways to understand how inputs affect the process within groups and influence the quality of outputs (Hirokawa, & Poole, 1996). Furthermore, team cohesiveness has been found to be positively correlated to team performance and can be viewed as an outcome of good communication within the group (Holland, Gaston, & Gomes, 2000). Klocke (2007) suggests that groups are useful primarily when each member of the group has unshared information and this integration of information will produce a better decision. Understanding what gets in the way of this sharing of information can help organizations to create more effective and productive workgroups either by influencing the inputs (group member selection) or the mediation of that information.

**Minority Opinion Member Influence**

Over the past four decades a great deal of research has examined minority influence on group decision-making. There are two ways to consider what constitutes minority opinion. The most popular one is the subgroup that is numerically the smallest. This is an obvious minority; however, the second way of defining the minority would be in terms of relative power (Kerr, 2002). This distinction is important because sometimes the numbers may indicate that a subgroup is the minority, but if that subgroup consists of leaders in an organization, then they might have more power. Minority opinion might best be explained by Mugny’s definition: “minority position is defined by the difference between its behaviours, judgments etc., and those
dictated by the dominant norms” (Mugny, 1982, p. 20). In this study, the minority opinion member was defined as the individual whose opinion differed most from the others.

Studies have shown that minority opinion members have been found to contribute to overall group decision-making effectiveness by adding more divergent thinking when group members consider the minority opinion (Nemeth, 1986; De Dreu & West, 2001). When a different opinion from the majority is presented during group discussions, then group members will attend to this difference and discuss the merits of both the majority and minority position. This process is known as convergent thinking (Nemeth, 1986). When groups engage in convergent thinking, they debate the opposing sides and often conform to the majority opinion.

On the other hand, a consistent minority opinion member may result in the group engaging in a discussion that leads to new ideas. This is a creative process called divergent thinking. When groups engage in divergent thinking they may consider a wider variety of choices and may even come up with ideas that no single member of the group could have conceived individually. This process is likely what leads to the better decision quality that studies have shown result from group decision-making. In one study on minority influence, Nemeth and Kwan (1985) discovered that when groups were exposed to minority opinion they used a wider variety of strategies to come to a consensus. Several other studies support the concept of divergent thinking, finding that when minority solutions are presented within groups, the solutions generated by the group are more creative and novel (Nemeth & Kwan, 1985; Nemeth, Mayseless, Sherman, & Brown, 1990; Nemeth & Wachtler, 1974). The question here is exactly how does the minority opinion member influence a group to engage in more divergent thinking? While being consistent is important to minority influence, this only examines the input part of the IMOI model (see Figure 1). The language used during group discussions would likely
be the channel for minority influence to result in divergent thinking and more creative problem solving.

In order for minority influence to be realized, however, research has shown that the minority opinion holder needs to feel comfortable in stating an opinion that is different than the majority (Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). Although group decision quality improves with better team cohesiveness, this should not be confused with “groupthink.” Instead, groups perform better when there are different opinions within the group and each member feels comfortable enough to express their opinion (Holland, et al., 2000). When and how the minority expresses a different view are important to group process. Two models have been proposed on how group members holding a minority opinion can influence those in the majority. The first model is Hollander’s model of idiosyncrasy credits. The second model is Moscovici’s model of behavioral style (1976).

In Hollander’s (1958) model, he describes a credit that all group members have in the group context. Members use this credit to gain influence in the group; however, each time a member behaves in a way that is not synchronous with the group, the member loses some of this idiosyncrasy credit. When his credit reaches zero, the member will likely be excluded from the group. Furthermore, the more idiosyncrasy credit a minority opinion member has the more often this member will be able to dissent from the majority opinion and possibly influence that opinion. Hollander further suggests that the minority opinion member should conform initially to the majority in order to establish credit before offering a dissenting opinion. Hollander based his theory on a study he performed (1960) where he had an equally competent confederate vary the point at which he behaved in a nonconforming manner during an experiment. The results of this study found that the confederate’s nonconformity had the maximum influence when he delayed
until the 11th trial. Based on these results, Hollander theorized that a minority opinion member would have the most influence if they first conformed with the majority and built credit with that majority.

Hollander’s theory has been tested by researchers since that time. Estrada, Brown, and Lee (1995) provided support for Hollander’s theory through a study that evaluated two measures of idiosyncrasy credit: latitude to be different and seriousness of consideration. They found that idiosyncrasy credit increased, particularly in groups that were high performing. Additionally, De Souza and Klein (1995) also found that both commitment and competence to the group were positively correlated to leader emergence. On the other hand other studies have failed to support Hollander’s theory. Wahrman and Pugh (1972) pointed out that the confederate who non-comformed for the first 10 trials and then reformed also had maximum influence in the 11th trial. They replicated Hollander’s study but included a measure of approval to ascertain the influence of the confederate. In this study, Wahrman and Pugh (1972) found that when the confederate showed deviant behavior from trial one and continued throughout, he was much more influential than the conformer even when he was less competent. Additionally, Ridgeway and Johnson (1990) found that groups gave more attention to an individual who was non-conforming.

The second model is based on what is referred to as conversion theory and was proposed by Moscovici (Moscovici, 1976; Moscovici & Faucheaux, 1972; Moscovici & Nemeth, 1974). Conversion theory addresses the difference between majority and minority influence and focuses on the reactions of group members when they realize their own opinions differ from other group members. In this model, it is suggested that the minority opinion member has the most influence by consistently and resolutely refusing to conform from the beginning. In particular, minority opinion members exert the most influence when they express ideas with repetition and
consistency. Minorities influence group process by causing a validation process whereby group members analyze the content of minority’s message. In a subsequent study, Moscovici and Lage (1978) found that minority influence came not from competence or leadership position, but instead from assuming a position of conviction and coherence. Moscovici’s model of consistency has been supported in studies about jury decision-making, current social problems, and in decisions about assigning leadership roles (Nemeth & Wachtler, 1974; Mugny & Papastamou, 1980). Minority influence based on conversion theory has been found to be particularly salient in an indirect versus direct manner. For example, in a study concerning color perception, minority influence affected judgments of afterimages of color rather than the color itself (Moscovici & Personnaz, 1980).

In a study by Bray, Johnson, and Chilstrom, (1982), these two models were evaluated in an experimental setting. Their study found that the Hollander strategy of early conformity coupled with a demonstration of competence resulted in more influence over the group decision than the Moscovici strategy of early and consistent dissent. On the other hand, Bassili (2003) found that pressures to conform delayed expression of minority opinions. When time is a factor in the decision task, minority opinions may never get expressed because of the social need for conformity. In particular, Nemeth (1986) and Nemeth & Nemeth-Brown (2003) found the pressure to conform to be fairly strong in undeveloped groups. Furthermore, subgroups can exist within decision-making groups that can either aid or inhibit the expression of differing opinions. For example, a group may have more men than women, thus forming and “in-group” of men. Persons with a minority opinion who are part of the in-group are more likely to contribute the opinion than if they were in the out-group (Phillips, 2003). Even though they may be more likely to state a differing opinion, group members were found to be more open to minority opinions
when these are expressed by a member of the out-group. Basically, this finding supports the
conformity issue presented early, that group members are under pressure to conform especially
when they are members of a majority in-group (Nemeth, 1985; Nemeth, Nemeth-Brown, 2003;

Every group will have a minority opinion member at some point during the group
decision process. This member can be the same person throughout the discussion, or it can
change from one topic to another. Regardless, unless the group is equally divided on a topic,
there will always be a minority opinion. Some research has been conducted to determine what
c characteristics of a minority opinion member result in the greatest influence. Review of the
literature indicated that consistency and argument quality are important to minority influence
(Gardikiotis, Martin, & Hewstone, 2005; Mackie, 1987; Moscovici, 1980; Meyers, Brashers, &
Hanner, 2000; Wood, et al., 1994). Consistent minorities have been found to be perceived more
positively than the majority (Moscovici & Lage, 1978). However, rigid consistency can block
group discussions and negate minority influence. Mugny (1975) found that individuals who have
a more “negotiating” style have a greater influence than individuals who are more rigid and
inflexible. This negotiating style was described as one that considers the opinions of others and is
willing to compromise. In essence, in order to achieve some influence, minority members must
be consistent but also have an interpersonal style that comes across as accommodating and open
to others. This could be encapsulated in the personality feature known as agreeableness.

As discussed earlier, Hollander’s model suggested that minority opinion members exert
the most influence when they are first conforming (Hollander, 1958). This allows the minority to
achieve some credit with the group. In a similar vein, agreeableness is a personality feature that
is described at being courteous, flexible, tolerant, trusting, and cooperative (Digman, 1990). As
one of the Big Five Personality characteristics, agreeableness has been found to be closely tied to interpersonal relationships (Graziano, Jensen-Campbell, and Hair, 1996) and to the perception of conflict during decision-making tasks. Research on agreeableness in group settings has found that individuals high in agreeableness tend to use a more constructive negotiating style in conflict resolution (Jensen-Campbell, Graziano, and Hair, 1996) and those low in agreeableness were found to use a more dominating style in conflict negotiation (Moberg, 2001). Agreeableness was also found to be associated with other group members' perception of cooperation and cohesiveness (Wagner, 1995). Not all the research on agreeableness has been positive for group decision-making. Some studies have found that agreeableness leads to less discussion of options and even a loss of information as groups may arrive at premature consensus (De Dreu & West, 2001; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006; Wood, et al., 1994).

Prior research has found that minority opinion members have more influence if they are first conforming (agreeable) rather than always expressing the minority opinion (Bray, et al., 1982). Bassili (2003) found that pressures to conform delayed expression of minority opinions. Nemeth (1985) & Nemeth-Brown found the pressure to conform to be fairly strong in undeveloped groups. In a previous study (Juraszek, et al., 2009) the combination of agreeableness and task competence were found to moderate the relationship between minority opinion members and Group Added Value ($F=6.52$, $p<.05$). Groups where the minority opinion member was the least competent group member and more agreeable than the most competent group member had significantly higher levels of group added value compared to other groups. The impact of minority opinion member's agreeableness and competence on group performance demonstrates how individual personality traits can influence group performance. The combination of less competence and more agreeableness reduces the effect the minority opinion member.
member has on the group. On the other hand, when the minority opinion member is the most competent and the most agreeable, the impact to the group is a decrease on group decision quality.

**Mediation Factors**

Observational research of groups interacting as they work toward a goal can help to understand what occurs within the Mediation portion of the IMOI model. Most of the research using observation has been done in the context of family therapy work. In a review of research conducted in the 1990s, Gottman and Notarius (2000) identified four coding systems used in research: Clinician Rating of Adult Communication (CRAC), Marital Interaction Coding System, Global Couple Interaction Coding System, and Couples Interaction Scoring System (CRSS). Some of these coding systems included analysis of spoken information, nonverbal information, and even perceived emotional information. Analysis of marital interaction can be an expensive and time-consuming process; however, it has helped to get a better understanding of marriage and the influence of what occurs during a discussion between two individuals. Gottman and Notarius (2000) stated that the use of observational data can tap into underlying social interactions that are beyond conscious awareness.

Another approach to analyzing what is happening during the mediation portion is to use a form of word count analysis. One reason for using this form of analysis is the fact that human coding is rife with error as it is processed through the perceptions of each judge (Chung & Pennebaker, 2007). Furthermore, the use of human judges can be extremely time consuming and expensive (Tausczik & Pennebaker, 2010). Computer programs have contributed to this form of analysis, taking out the controversial human factor of analysis, with the exception of during the development of the program itself. Some of the computer programs that have been developed
can perform simple word counts, look for particular themes, or count words according to specific linguistic categories. Some advantages to analyzing mediation in this manner include: 1) speed of analysis, 2) how people communicate reveals more about the social experience than what they communicate (Tausczik & Pennebaker, 2010), 3) the use of pronouns and verb tense can indicate the attentional focus of the individual speaking in terms of self or other focus and temporal focus (Tausczik & Pennebaker, 2010), 4) removes the subjectivity of humans coding dialogues (Groom & Pennebaker, 2002), 5) the language people use can identify key information about a person (Pennebaker & King, 1999; Groom & Pennebaker, 2002; Pennebaker, Mehl, & Niederhoffer, 2003;), and 6) the importance of mimicry in communication can be revealed (Pennebaker & King, 1999; Gonzales, Hancock, & Pennebaker, 2009).

Looking at how people communicate can be more revealing than perhaps the content of their communication. For example, if you ask three people to describe a smile, you might get something like this:

1) Her smile lit up her face and caused her eyes to sparkle.

2) She smiled like a clown.

3) I felt better when I saw that smile.

Each of these could be about the same person, but each say more about the speaker than about the person who smiled. In the first example, the speaker used more words than the other two. The last speaker used a personal pronoun twice. Studies have revealed that use of personal pronouns can be very revealing about the speaker’s state of mind. Pennebaker, et al. (2003) found that the use of first person singular pronouns can be associated with age, sex, depression, illness, and self-focus. The use of prepositions have been found to indicate more complexity (Tausczik & Pennebaker, 2010). Furthermore, it is likely that each of the above speakers is likely to talk
similarly in most circumstances, as language use is a reliable individual difference (Pennebaker & King, 1999). The use of prepositions, conjunctions, and other function words is a natural and spontaneous reflection of the manner in which a subject speaks and can be revealing about who they are and their current psychological state. Although the use of these words often form a specific pattern for an individual, it has also been found to vary according to what people might be experiencing at the time (Chung & Pennebaker, 2007).

Although people are stylistic in how they communicate, they can be influenced by the others they communicate with. Mimicry or linguistic style matching is important to social interactions (Gonzales, et al., 2009). In this study, groups of 4-6 people were asked to work together to answer questions in both a computer chat mode and a face-to-face mode. In face-to-face groups, there was a positive relationship between linguistic style matching and task performance. “The more teams matched their production of functions words, the better they did on the task” (p. 13). Word count was also found to improve group cohesiveness.

One program used for the purpose of analyzing the words people use is the Linguistic Inquire and Word Count (LIWC) program developed by Pennebacker, Booth, & Francis, (2007). This program was developed between 1992 and 1994 and has had two revisions in 1997 and 2007. The program opens a series of files and analyzes them word by word by comparing them to a dictionary and coding each word on specific categories. The 80 categories can be straightforward, such as articles (a, an, the) or more subjective such as emotion words. For the subjective categories judges were used to evaluate which words were assigned to specific categories. It took a minimum of two out of three judges to assign or delete a word from a specific category (Tausczik & Pennebaker, 2010). Over the years that the LIWC program has been used for analysis, the use of function words has become a revealing source of information.
about how people communicate with each other. Function words make up only 0.05% of the English language, but have been found to make up over 50% of usage. Function words can reveal attention focus, how well the individuals know each other and the content of their discussion, make distinctions between categories, join thoughts and ideas, indicate tentativeness in dialogue, reveal complexity, and reveal the level of social involvement (Tausczik & Pennebaker, 2010). Furthermore, people tend to match each other in the amount of functions words they use and are completely unaware of the frequency of the use of such words (Pennebaker, et al., 2003).

The LIWC program produces a data record that includes the word count, words per sentence, percentage of words captured by the dictionary, and percent of words longer than six letters (Pennebaker, et al., 2007). It also reports 22 standard linguistic dimensions (e.g., percentage of words in the text that are pronouns, articles, auxiliary verbs, etc.), 32 word categories tapping psychological constructs (e.g., affect, cognition, biological processes), 7 personal concern categories (e.g., work, home, leisure activities), 3 paralinguistic dimensions (assents, fillers, nonfluencies), and 12 punctuation categories (periods, commas, etc).

**Critical Summary**

Some studies have found that dissent within decision-making groups is essential for quality decisions. It is for this reason many organizations convene decision-making groups from various sections within the organization. This brings a diversity of opinions and perspectives that do not always exist in the workplace where individuals are located with others in their specialty area. However, getting the people together is only one step in the process. The next step is getting them to communicate with one another and comfortable enough with the group to state an opinion different from the majority.
The importance of dissent within decision-making groups cannot be overstated. Research has shown that decision-making groups that have diverse opinions have more comprehensive discussions than groups that have few differences (De Dreu & West, 2001; McLeod, Baron, Marti, & Yoon, 1997; Schulz-Hardt, et al., 2006). Furthermore, the quality of the decisions from groups with dissenting opinions is higher. Nevertheless, getting a group member with a minority opinion to participate in discussions can be difficult especially if groups move toward an opinion quickly and without full discussion of the possibilities. Having members with a minority opinion can prevent premature consensus, but only if the minority opinion member has influence in the group. Participation by group members stimulates creativity and aids in group consensus on team decisions as found by King, Anderson, and West (1992). The study by De Dreu and West (2001) found that minority dissent was only valuable to group decision-making when there were high levels of participation during the decision-making process.

Based on the above, literature group decision-making is most effective when group members contribute individually to the discussion before premature consensus is reached. The review of the literature presented above demonstrates the importance of dissent in groups, particularly dissent that is received well by other group members. Previous studies have placed emphasis on various inputs into the decision making model; for example, expertise of individuals, personality features, and group development. These inputs were manipulated in some studies to evaluate the overall effect of the group’s output. Furthermore, studies about the impact of minority opinion holders on group decision quality have been conducted. Most of these studies have focused primarily on what characteristics of minority opinion members has the greatest effect on group outcomes. There is an absence of literature on how certain personality features impact minority opinion member’s influence on group decisions. There is
especially scarce research on analyzing the mediation that occurs during group discussions. In this study, I will examine how agreeableness and expertise of minority opinion members impact the specific behaviors of group members involved in a decision-making task.

**Purpose and Hypotheses**

The goal of this study is to determine how minority opinion members influence the outcome of a group decision-making task. Further, this research will examine how agreeableness and expertise of the minority opinion member impacts the discussion during group decision-making. In particular this study will examine how agreeableness of the minority opinion member moderates the impact on Group Added Value. Furthermore, we will examine if this moderation is mediated by the words used during group discussion to reach consensus. The following hypotheses are proposed:

*Hypothesis 1: The effects of the expertise of the minority opinion member on group added value will be mediated by the group's language usage.*

*Hypothesis 2: The relationships among the expertise of the minority opinion member, group added value, and language usage will be moderated by the agreeableness of the minority opinion member.*
Method

Participants

Participants for this study were recruited from undergraduate psychology classes at a university in the Pacific Northwest and were given extra credit for their participation. There were a total of 276 participants in 92 three-person groups. Participants also had the opportunity to earn a small monetary reward of $60 for the group with the best performance and $20 for the individual with the best performance. Only 80 of the groups had viewable video that were analyzed. Seventy percent of the participants were female and 30% were male. Additionally, the majority (88%) were Caucasian with the mean age of 20.7 years. The undergraduate participants were comprised of 32% freshman, 35.5% sophomores, 20.8% juniors, and 11.6% seniors.

Design

Two experimental manipulations were undertaken: Forming and Feedback. For the Forming experimental manipulation, participants were randomly assigned to one of two conditions: Forming or No Forming. In the Forming condition, prior to the first task participants became acquainted with other group members through a team building exercise. Each member of the group answered prepared questions randomly drawn from different stacks of cards. Examples of questions include: “What is your major and why?” and “If you could go anywhere in the world where would you go and why?” Participants in the control, No Forming, condition read a brief paper on the stages of group development. Each activity lasted approximately five minutes. For the Feedback manipulation, participants were randomly assigned to one of two conditions: Feedback or No Feedback. In the Feedback condition after the completion of the first group task, and before initiation of the second task, groups were given feedback about the performance of individual members on the first task. The feedback took the following form “According to the
experts, person A, you are the most in agreement with the experts. Person B, you are second most in agreement, and person C you are the least in agreement with the experts.” After receiving this feedback, participants began work on the second task. Those in the No Feedback condition began the second task immediately following completion of the first task. For the current study, no significant effects were found for the Feedback manipulation, thus the two conditions were collapsed for subsequent analyses.

Tasks

Participants completed two different decision making tasks: a desert survival task and a moon survival task in a scenario where they were stranded with a number of items that could help them survive. Participants ranked the items so that the most important items came first. For both scenarios, participants ranked the items individually, then were required to reach a consensus on the rankings as a group. The desert survival task required the groups to rank order ten items as compared to the moon survival task that required the groups to rank order fifteen items. The order in which the exercises were completed was counterbalanced across experimental conditions.

Measures

Participants completed a range of questionnaires assessing personality profiles, demographic data, and self-efficacy and self-esteem. Performance and task expertise were evaluated at the individual and group levels, based on comparisons with correct scores provided by subject matter experts.

Task expertise.

Individual task expertise was evaluated by comparing participant answers on the second decision making task to those provided by the subject matter experts. The participant’s individual
decision making quality was identified by calculating the absolute value of the difference between the participant ranking and expert ranking. The difference in scores was calculated for each answer and then summed. The scores were reversed and standardized (z-scores) so that higher scores reflected greater agreement with the subject matter experts, indicating a higher quality decision or task expertise.

**Agreeableness.**

Agreeableness was assessed utilizing 7 items for the NEO Five Factor Inventory (Costa & McCrae, 1992). Each question item was measured on a 5-point Likert response scale, ranging from 1 (“Does not describe me at all.”) to 5 (“Describes me very well.”). Examples of items supporting higher levels of agreeableness include: “I tend to get along well with others.” and “I would never trick people into doing something that I want.” The measure has adequate internal consistency reliability (alpha = .68).

**Minority opinion member.**

The minority opinion member was operationally defined as the member of each 3-person group whose individual rankings differed most from the other two. The minority opinion member was identified by comparing the scores of the middle expertise member (e.g., the group member that neither showed the most nor the least amount of task expertise) to the most and least expert group members. The group member with whom the middle expert member’s rankings agreed with less was designated the minority opinion member. Consequently, by this definition, the minority opinion member was either the most competent or the least competent member of the group.
Group added value.

Group added value was defined as the decision quality of the group, independent of the individual member expertise. In other words, the group output was measured by the value added to the decision/task-performance by group processes rather than the absolute accuracy of the decision. Group added value is the group's decision quality beyond the contributions of individual members. The variance in group decision quality not accounted for by individual member expertise is the overall group added value. Thus, this focuses on the outcomes of task performance as a group dynamic. This enables a process-oriented focus that can parse out how and where a group gained or lost overall expertise. Group performance was evaluated by comparing groups' answers on the second decision making task to those provided by the subject matter experts. The group’s decision making quality was identified by calculating the absolute value of the difference between the group’s ranking and experts’ ranking of each item. The difference in scores was calculated for each answer and then summed. The scores were reversed and standardized (z-scores) so that higher scores reflected greater agreement with the subject matter experts, indicating a higher quality decision or task expertise. Group added value was subsequently calculated by statistically removing the variance of individual member scores via multiple regression with added value being the residual of the absolute group performance scores.

Language usage.

The Linguistic Inquiry and Word Count (LIWC) software program was used to calculate the frequency of words across different categories. The LIWC program allows for a word count of individual words and word categories either developed by the user or pre-identified by the
software (such as assent, leisure, filler, achievement and work related word clusters) (Pennebaker, et al., 2003). The program analyzed transcripts of group problem solving conversations to calculate the frequency of word choice within selected categories. The results are represented as a percentage of the total conversation. For example, this study examined the frequencies of first person singular pronouns (e.g., I, me, my); exclusive words (e.g., but, without); total function words (e.g., articles, pronouns); impersonal pronouns (e.g., it, its, those) past tense (e.g., did, was said); present tense (e.g., is, does, hear); prepositions (e.g., to, with, above), cognitive processes (e.g., cause, know, ought), and causation (e.g., because, effect, hence).

**Procedure**

Participants provided informed consent and subsequently completed questionnaires assessing personality, self-esteem, and group self-efficacy. Groups randomly assigned to the forming condition engaged in a brief ice-breaker task. In contrast, the groups in the No Forming read a brief paper on the stages of group decision. Next, participants completed the first task, individually first with a 5 minute time limit, and then as a group with no time limit. After completion of the first task, groups in the feedback condition were provided feedback of the quality of the group decision as well as the quality of each individual’s decision. After the feedback, participants completed the second task. Those not in the feedback condition began the second task immediately following completion of the first task. Each group was videotaped while performing the tasks. After completion of both tasks, groups were thanked for their participation, given feedback on their performance when compared to the experts, and given their extra credit for their psychology class. The videotapes were transcribed by a transcription
service and reviewed by several clinical psychology graduate students to correct any errors made in transcription.
Results

Data analysis was conducted using the model of moderated mediation as set out in the article by Edwards and Lambert (2007). In this article, the authors have set out an integrated moderated regression analysis and path analysis to test each path of a mediation model for the effect of a proposed moderator where the mediated effect varies across levels of the moderator. The regressions were used to define the coefficients entered into the equations below (Edwards & Lambert, 2007):

\[(5) M = a_{05} + a_{X5}X + a_{Z5}Z + a_{XZ5}XZ + e_{M5}\]

\[(20) Y = b_{020} + b_{X20}X + b_{M20}M + b_{Z20}Z + b_{XZ20}XZ + b_{MZ20}MZ + e_{Y20}\]

These equations represent the amount or distribution of minority opinion member expertise (X), group added value (Y), the agreeableness level of the minority opinion member (Z), and the mediator (M) language usage category (Figure 2).
In equation 5, $a_{x5}$ indicates the direct relationship between expertise and the mediator, $a_{x5}$ represents the main effect of the moderating variable of agreeableness, and $a_{xz5}$ refers to the interaction between agreeableness and expertise and thus tells whether the relationship between expertise and language usage varies as a function of minority opinion member agreeableness. In equation 20, $b_{x20}$ refers to the relationship between expertise and group added value, $b_{m20}$ refers to the relationship between the mediator (language usage category) and group added value, $b_{mz20}$ indicates whether the effect of language usage on group added value varies as a function of the agreeableness of the minority opinion member. $b_{z20}$ refers to the interaction between agreeableness and group added value and tells whether the relationship between language usage and group added value varies as a function of minority opinion member agreeableness. $b_{xz20}$ indicates whether the effect of minority opinion member expertise on group added value varies as a function of the agreeableness of the minority opinion member. All variables were mean centered prior to analyses.

Hypothesis 1: The effects of the expertise of the minority opinion member on group added value will be mediated by the group's language usage.

Hypothesis 2: The relationships among the expertise of the minority opinion member, group added value, and language usage will be moderated by the agreeableness of the minority opinion member.

Regression results relevant to Hypothesis 1 and 2 are reported in Tables 1 and 2. As seen in Table 1, the minority opinion member’s expertise accounted for significant variation in groups’ use of language from two different categories. Unstandardized coefficient estimates in Table 1 show that minority opinion member expertise was positively related to groups’ exclusive
language usage ($a_x = .200, p < .10$) accounting for 4.9% of the variance in exclusive language use. Additionally, minority opinion member expertise was negatively related to groups’ impersonal pronoun usage ($a_x = -.270, p < .05$) accounting for 4.6% of the variance in impersonal pronoun usage. As the minority opinion members’ expertise level increased, the use of exclusive language by group members also increased. In contrast, as the minority opinion members’ expertise level increased, group members use of impersonal pronouns decreased.

Minority opinion member expertise did not account for significant variation in any of the other types of language categories examined in this study, nor was the relationship between minority opinion member expertise and group language usage moderated by minority opinion member agreeableness.

Table 1

Coefficient Estimates for Moderated Mediation of Minority Opinion Member Expertise, Minority Opinion Member Agreeableness, and Language Style.

<table>
<thead>
<tr>
<th>Mediator</th>
<th>$a_0$</th>
<th>$a_x$</th>
<th>$a_{Z1}$</th>
<th>$a_{XZ1}$</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>First person singular pronouns (e.g., I, me, my)</td>
<td>.007</td>
<td>.093</td>
<td>.437</td>
<td>-.161</td>
<td>-.007</td>
</tr>
<tr>
<td>Exclusive words (e.g., but, without)</td>
<td>.009</td>
<td>.200*</td>
<td>-.059</td>
<td>.285</td>
<td>.049*</td>
</tr>
<tr>
<td>Total function words (articles, pronouns, etc.)</td>
<td>.001</td>
<td>-.372</td>
<td>-.192</td>
<td>.476</td>
<td>-.003</td>
</tr>
<tr>
<td>Impersonal pronouns (e.g., it, its, those)</td>
<td>.003</td>
<td>-.270*</td>
<td>.061</td>
<td>.241</td>
<td>.046*</td>
</tr>
<tr>
<td>Past tense</td>
<td>.002</td>
<td>.075</td>
<td>.010</td>
<td>.010</td>
<td>-.035</td>
</tr>
<tr>
<td>Present tense</td>
<td>-.006</td>
<td>-.083</td>
<td>-.065</td>
<td>-.113</td>
<td>-.033</td>
</tr>
<tr>
<td>Prepositions (e.g., to, with, above)</td>
<td>.008</td>
<td>-.078</td>
<td>.243</td>
<td>.162</td>
<td>-.019</td>
</tr>
<tr>
<td>Cognitive processes (e.g., cause, know, ought)</td>
<td>.006</td>
<td>.186</td>
<td>-.155</td>
<td>.285</td>
<td>-.021</td>
</tr>
<tr>
<td>Causation (e.g., because, effect, hence)</td>
<td>-.004</td>
<td>.003</td>
<td>-.193</td>
<td>.025</td>
<td>-.014</td>
</tr>
</tbody>
</table>

Note: $N = 80$. Entries under columns labeled $a_x$, $a_{Z1}$, $a_{XZ1}$, are unstandardized coefficient estimates using a language style variable as the dependent variable. $X = $ Minority Opinion Member Expertise, $Z_1 = $ Minority Opinion Member Agreeableness, * $p < .05$, ** $p < .01$, ! $p < .10$. 

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Table 2 reports the results for the direct effects of both minority opinion member expertise and language usage on group added value. As seen in Table 2, minority opinion member expertise was not significantly related to group added value, nor was the relationship between minority opinion member expertise and group added value moderated by minority opinion member agreeableness. Several categories of group language usage, including first person singular pronouns, exclusive words, impersonal pronouns, present tense, and causation were significantly related to group added value after controlling for the effects of minority opinion member expertise. These findings are hardly surprising, as language usage categories were selected based on their significant zero order correlations with group added value. Of note both exclusive language usage (adjusted $R^2 = .097, p < .05; b_m = .225, p < .01$) and impersonal pronoun usage (adjusted $R^2 = .044, p < .05; b_m = -.147, p < .05$) were significantly related to group added value. None of the relationships between language usage and group added value were moderated by minority opinion member agreeableness.
Table 2

**Coefficient Estimates for Moderated Mediation of Distribution of Agreeableness Relative to Expertise, Language Usage, and Group Added Value.**

<table>
<thead>
<tr>
<th>Mediator</th>
<th>$b_0$</th>
<th>$b_x$</th>
<th>$b_{z1}$</th>
<th>$b_{xz1}$</th>
<th>$b_m$</th>
<th>$b_{MZ1}$</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>First person singular pronouns (e.g., I, me my)</td>
<td>-0.040</td>
<td>-0.10</td>
<td>-0.106</td>
<td>0.087</td>
<td>-0.159**</td>
<td>-0.048</td>
<td>0.060</td>
</tr>
<tr>
<td>Exclusive words (e.g., but, without)</td>
<td>-0.038</td>
<td>-0.091</td>
<td>-0.235</td>
<td>0.007</td>
<td>0.225**</td>
<td>0.225</td>
<td>0.097</td>
</tr>
<tr>
<td>Total function words (articles, pronouns, etc.)</td>
<td>-0.033</td>
<td>-0.015</td>
<td>-0.169</td>
<td>0.109</td>
<td>0.061*</td>
<td>0.080</td>
<td>0.048</td>
</tr>
<tr>
<td>Impersonal pronouns (e.g., it, its, those)</td>
<td>-0.048</td>
<td>0.002</td>
<td>-0.118</td>
<td>0.113</td>
<td>-0.147*</td>
<td>0.206</td>
<td>0.044</td>
</tr>
<tr>
<td>Past tense</td>
<td>-0.035</td>
<td>-0.019</td>
<td>-0.197</td>
<td>0.131</td>
<td>-0.100</td>
<td>-0.146</td>
<td>0.050</td>
</tr>
<tr>
<td>Present tense</td>
<td>-0.035</td>
<td>-0.018</td>
<td>-0.164</td>
<td>0.151</td>
<td>-0.137**</td>
<td>-0.052</td>
<td>0.068</td>
</tr>
<tr>
<td>Prepositions (eg., to, with, above)</td>
<td>-0.044</td>
<td>-0.021</td>
<td>-0.183</td>
<td>0.119</td>
<td>-0.153*</td>
<td>0.118</td>
<td>0.046</td>
</tr>
<tr>
<td>Cognitive processes (eg., cause, know, ought)</td>
<td>-0.035</td>
<td>-0.047</td>
<td>-0.187</td>
<td>0.071</td>
<td>0.081*</td>
<td>0.060</td>
<td>0.043</td>
</tr>
<tr>
<td>Causation (e.g., because, effect, hence)</td>
<td>-0.031</td>
<td>-0.028</td>
<td>-0.105</td>
<td>0.117</td>
<td>0.357**</td>
<td>0.042</td>
<td>0.060</td>
</tr>
</tbody>
</table>

Note: N = 80. Entries under columns labeled $b_0$, $b_{z1}$, $b_{xz1}$, $b_m$, $b_{MZ1}$ are unstandardized coefficient estimates using group added value as the dependent variable. $X$ = Minority Opinion Member Expertise, $Z_1$ = Minority Opinion Member Agreeableness, $M$ = Mediator, $Y$ = Group Added Value. * $p < .05$, ** $p < .01$, ! $p < .10$.

When combining the results in Tables 1 and 2, both exclusive language and impersonal pronoun usage appear to mediate the relationship between minority opinion member expertise and group added value. Figures 3 and 4 (see below) present fully articulated models of these relationships. Consequently, hypothesis 1 appears to be partially supported in that both exclusive words and impersonal pronouns were found to be significant mediators between minority opinion member expertise and group added value. Increases in both exclusive language and impersonal pronoun use were associated with increases in group added value. Minority opinion member expertise, however, had opposite effects on each of these variables. For example, as minority opinion member expertise increased, group members used more exclusive words,
resulting in an increase in group added value. In contrast, as minority opinion member expertise increased, group members used fewer impersonal pronouns. Since impersonal pronouns had a positive effect of group added value, factors that decrease their usage (e.g., high levels of minority opinion member expertise) will be associated with lower levels of group added value.

Figure 3. Exclusive Words as Mediators Between Expertise and Group Added Value
Finally, when combining the results in Tables 1 and 2, minority opinion member agreeableness does not appear to moderate any of the relationships between minority opinion member expertise, language usage, and group added value. Consequently, hypothesis 2 is not supported.

These results suggest two different language usage variables, exclusive language and impersonal pronouns mediated the relationship between minority opinion member expertise and group added value. Furthermore, these results suggest that the relationships between minority opinion member expertise and exclusive language and impersonal pronouns were nearly equal in magnitude but opposite in direction. Specifically, as minority opinion member expertise increased, groups’ use of exclusive language also increased; with increases in exclusive language
being positively related to group added value. In contrast, as minority opinion member expertise increased, groups’ use of impersonal pronouns decreased; with increases in impersonal pronouns being positively related to group added value. Consequently, it is possible that if these two factors occurred simultaneously, the positive effects of minority member expertise occurring through increased exclusive language usage could have been suppressed by the negative effects of minority opinion member expertise on impersonal pronouns.

The possibility of multiple, simultaneous mediation was examined using bootstrapping methodology suggested by Preacher and Hayes (2008). “Bootstrapping is a computationally intensive method that involves repeatedly sampling from the data set and estimating the indirect effect in each resampled data set.” (Preacher & Hayes, 2008, p. 880). By using this method of sampling, it is possible to construct confidence intervals that more accurately represent the effects than a p-value. The estimates and bias corrected confidence intervals are presented in Table 3.
Table 3

Mediation of the Effect of Minority Opinion Member Expertise and Agreeableness Through the Use of Exclusive Words and Impersonal Pronouns

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Estimate</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive Words on Expertise</td>
<td>.207*</td>
<td>.035</td>
<td>.363</td>
</tr>
<tr>
<td>Impersonal Pronouns on Expertise</td>
<td>-.270*</td>
<td>-.472</td>
<td>-.089</td>
</tr>
<tr>
<td>Exclusive Words on Group Added Value</td>
<td>.205*</td>
<td>.072</td>
<td>.327</td>
</tr>
<tr>
<td>Impersonal Pronouns on Group Added Value</td>
<td>.082</td>
<td>-.019</td>
<td>.164</td>
</tr>
<tr>
<td>Expertise on Group Added Value</td>
<td>-.041</td>
<td>-.159</td>
<td>.078</td>
</tr>
</tbody>
</table>

Note: * indicates significance based on CI not containing the value of zero.

The results showed that, when considered simultaneously, minority opinion member expertise was still significantly related to both exclusive language usage and impersonal pronoun usage. In contrast, when considered simultaneously, only exclusive language usage was significantly related to group added value. Figure 5 illustrates these results, showing that the paths from minority opinion member expertise to both mediators (exclusive words and impersonal pronouns) are significant; however, this significance carries on to group added value only through the mediator exclusive words.
Figure 5. Simultaneous Examination of Exclusive Language and Personal Pronouns
Discussion and Conclusions

Minority opinion members have been found to contribute to overall group decision-making effectiveness (Nemeth, 1986). Different opinions between group members improve group decision quality though discussion of various alternatives, but only when members state that they have different opinions. Minority opinion members have been found to have the most influence on group decision-making when they are consistent (Moscovici, 1976; Moscovici & Faucheaux, 1972, Moscovici & Nemeth, 1974) and when they have established some idiosyncrasy credit with other group members (Bray, et al., 1982). When the minority opinion member has the most expertise, it becomes even more important to have that opinion discussed by group members.

This study explored the effects of minority member expertise on group decision quality. More specifically, it examined whether group language style created a channel by which minority opinion member expertise could positively influence group decision-making. The results showed that, unexpectedly, minority opinion member expertise was not directly related to group added value. These findings are in contrast to studies that have found minority influence to positively effect group decision quality. For example, Park and DeShon (2010) found that minority influence was positively related to team performance. De Dreu and West (2001) found that minority dissent directly resulted in more innovation in group discussion. However, they discovered that this increased innovation only occurred when levels of discussion were high. The results of this study did show, however, that group language style (or group language usage) significantly mediated the relationship between minority opinion member expertise and group added value. Exclusive language (e.g., but, without, except) was found to significantly mediate the relationship between minority opinion member expertise and group added value.
Specifically, as minority opinion member expertise increased, group members were found to use more exclusive language during the problem-solving episode. This increase in the use of exclusive words was associated with a positive impact on group added value.

A possible explanation of these results is that exclusive language has been associated with complex thinking and reasoning (Tausczik & Pennebaker, 2010). In this study, the minority opinion member was operationally defined as either the most or least expert (at the task) person in the group. Groups that relied more on reasoning and logic to discriminate amongst the relative value of the various objects available for survival may have provided a channel by which either the most expert member of the group could positively influence group decision quality or the negative influence of the least expert member could be mitigated. It is possible to speculate that as minority opinion member’s expertise increased, the group’s usage of exclusive words allowed discussion to be more creative and logical and to consider the minority opinion more fully.

The initial results of this study also showed that impersonal pronoun usage (e.g., it, that, those, etc.) significantly mediated the relationship between minority opinion member expertise and group added value. When the impact of both mediating variables was examined conjointly, however, only exclusive language mediated the relationship between minority opinion member expertise and group added value.

It was also hypothesized that the minority opinion member agreeableness would moderate the relationships among minority opinion member expertise, group language usage, and group added value. Hollander (1958) proposed that minority opinion members would have more influence if they were first conforming to group norms. This would suggest that being agreeable could help the minority opinion member earn credit with group members and thus have more influence. Furthermore, Jensen-Campbell, et al. (1996) found that individuals high in
agreeableness had a more negotiating style, a style found to have a positive impact on minority influence (Mugny, 1975). The results showed, however, that minority opinion member agreeableness was not a significant moderator. There are several potential factors that may explain why agreeableness was not found to significantly moderate the mediating effects found in this study. Several of these factors are related to the actual length of the groups’ problem solving discussions.

First, previous research has shown that individuals high in agreeableness tend to use a more constructive, negotiating style (Jensen-Campbell, et al., 1996) when involved in problem solving discussions. This study found that agreeableness did not significantly moderate the relationship between minority opinion member expertise and group language usage. The relative brevity of the discussions in this study may have prohibited the use of such a style in these problem-solving discussions.

Second, prior research (Bray, et al., 1982) has shown that minority opinion members are more influential if they are first conforming to the majority viewpoint. It might be expected that in a group of strangers focused on a limited task, the minority opinion member might begin with this strategy and never find the opportunity to present a dissenting view before consensus was reached.

Limitations

There are several limitations to this study. The first is the problem-solving task itself. This study used a survival task that required groups to evaluate and rank order items for the survival. This is not a task that easily generalizes to organizational problems, but it did allow for a narrow focus in the groups’ discussions. Of course, this fact also contributed to the second limitation: the brevity of discussion among group members. Because this study focused on
minority influence, research has shown that often minority opinion members withhold their contributions or conform early in group discussions. In some cases, the minority opinion members in this study may have not interjected an opposing view if the groups reached consensus quickly.

Another limitation of this study is that the sample came from a group of undergraduate students. As such, the age range was small, and the students were likely motivated to finish the task quickly so they could get back to their interests. The only vested interest they had in this task was the offer of extra credit for participation and the possibility of earning money for being the highest performing team. Additionally, these students were strangers, not the typical group that an organization might convene to tackle difficult decisions. Of course, in this study, we tried to minimize this impact by having groups engage in forming and feedback activities. In this study, a self-report measure was used to assess for personality characteristics. This further limited the study to their ability to have insight into their own personalities, and gave no information on how they might be perceived by others.

First is the fact that these groups were random strangers focused on a paper and pencil decision-making task. This was essential for the purpose of this study to limit the length and to randomize the experiment. However, in organizations, decision-making groups would not necessarily be created this way. Additionally, all the participants were drawn from a narrow group of undergraduate students.

Another limitation of this study was the choice to examine only certain categories of speech using the LIWC program. This choice was made based on the finding that these categories had an impact on group added value. Additionally, it was decided to examine group level communication rather than the impact of word choice from group member to group
member. The reasons for this choice included the fact that communication styles between individuals tend to match each other and also the fact that the length of each groups' discussions were limited.

**Suggestions for Future Research**

Future research could further the examination of various language categories as mediators on minority influence. Tausczik and Pennebaker (2010) identified exclusive words, causation, prepositions, and insight words as indicative of more complex processes. Exclusive words (e.g., but, without) are used to differentiate between options. Causation (e.g., because, effect, hence) and insight words (e.g., think, know) are used to reevaluate. This study did examine most of these categories with the exception of insight words. While we did not find any significance with causation or prepositions, we included them because they were directly correlated with group added value. Future research involving more realistic decision-making groups might examine these language categories, because they have been associated with complex processing.

Another focus for future research might examine how language usage varies over the course of a group decision-making task. As discussed earlier, minority opinion members can gain more influence if they are first conforming to group norms. Future research might examine how this influences the use of various language categories as the minority opinion member begins to dissent later in group discussions.

This study examined only group level language usage. Future research might examine individual language usage and how minority opinion member’s influence that. It might be beneficial to learn how the language usage of one member affects that of the next person who speaks in the group. Research has shown that individuals often match each other in language
style (Neiderhoffer & Pennebaker, 2002). An examination of whether minority opinion members actually influence others in the group to match their language style might help explain how they gain influence in groups.

Finally, future research might examine in more depth the impact of the minority opinion member on group decision-making in more realistic tasks. Past research provided evidence that dissent in groups is valuable (De Dreu & West, 2001; Dooley & Fryxell, 1999). In all groups, there will be a minority opinion member, though in many cases this may change from person to person depending on the discussion. Examining how minority opinion members influence the mediation of group interactions has proven to be informative in this study. Replicating this with a larger sample-size and possibly with a more realistic decision-making task might be helpful in learning more about how personality features of the minority opinion member play a part in helping groups come to better decisions. Having more lengthy discussions would provide more data for analysis, thus lending more power to the results. This study examined only one personality feature of the minority opinion member.

Conclusions

Organizations are depending more and more on groups for complex decision-making tasks. In today’s competing market economy it is essential that they know how to get the most from these decision-making groups. This study focused on the influence of minority opinion members on group decision quality. In particular, this study further examined how the minority opinion members’ expertise and agreeableness influenced group language usage. This study found that as minority opinion member expertise increased, groups used significantly more exclusive words and fewer impersonal pronouns. Furthermore, this study found that both exclusive words and impersonal pronoun usage were significantly correlated to group added
value. In order to more fully understand this relationship, we examined this more closely and discovered that only exclusive language usage was found to significantly relate to group added value. Thus, we concluded that as minority opinion member expertise went up, so did groups' usage of exclusive language and increased group added value. Although this study does not suggest that minority opinion member caused increased usage of exclusive words, the correlation is interesting as a way of further understanding how minority influence is realized through mediation. This study raised even more questions about the methods that minority opinion members might employ to affect group processes and the value of having dissent in groups.
References


