# CAN WE WORK TOGETHER?: AN OBSERVATIONAL STUDY OF APPRAISALS, FAULTLINE ACTIVATION, CONFLICT, AND GROUP OUTCOMES

by

JAMIE LYN PERRY

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ABSTRACT OF THE THESIS

Can we work together?: An observational study of appraisals, faultline activation, conflict, and group outcomes

by JAMIE PERRY

Dissertation Director:

Dr. Katerina Bezrukova

This study examines the moderation of potential faultlines and faultline activation through manipulating appraisals. Previous research has investigated the causes and effects of faultline activation, but none have examined appraisals as a trigger to faultline activation. Using a 2x2x2 factorial quasi-experimental design crossing appraisals (intrinsic vs. instrumental), potential faultlines (weak vs. strong), and faultline activation (alignment vs. no alignment), 156 participants (43 groups) were rated on the study constructs as they completed a group task. The data revealed that faultlines were more likely to activate in groups with potential faultlines where members were instructed to think about undesirable qualities of group members (intrinsic appraisal condition) rather than in groups with potential faultlines where members were instructed to think about obstacles that people created within the group (instrumental appraisal condition). In addition, I found that active faultlines had an influence on conflict (task, process, and relationship) between and within subgroups, and performance. Results of the study have implications for future research.

# INTRODUCTION

As the global market place becomes more and more competitive, organizations often look for ways to increase their marketability and productivity. One approach to this problem is hiring diverse work teams. By creating an environment of various information and expertise, organizations hope to engender innovative and creative solutions through the encouragement of different perspectives (Hoffman & Maier, 1961; Jehn, Northcraft, & Neale, 1999). Though diverse work groups have some beneficial outcomes such as enhancing group performance and developing quality decisions (Argote, Gruenfeld, & Naquin, 2001; Ancona & Caldwell, 1992; Gruenfeld et al., 1996), recent research has documented the possible negative outcomes. Convergence of different attributes on group tasks (e.g. women with bachelor degrees and men with master degrees) has been shown to create faultlines which leads to conflict arising due to perceived differences amongst team members (Lau & Murnighan, 1998); this ultimately interferes with group performance. Increased reliance on team projects has led to careful examination of underlying factors such as faultlines that may lead to unpredictability in performance and output (Lau & Murnighan, 1998).

Faultline literature proposes that when group members perceive hypothetical divisions based on demographic alignment, they split into subgroups based on the alignment of two or more demographic attributes (Bezrukova, Jehn, Zanutto, & Thatcher, 2005). Lau and Murnighan (1998) described the potential alignment of multiple demographic identity groups in diverse teams as a way to explain the formation of subgroups and emergence of inter-subgroup conflict within a team. However, like

diversity research, faultline literature has inconsistent findings. While faultlines have been found to contribute to a decrease in completion of group tasks, lower decision quality, and weak social integration, it has also been linked to lower levels of conflict, greater psychological safety, and higher satisfaction (Lau & Murnighan, 1998; Rico, Molleman, Sanchez-Manzanares, & Van der Vegt, 2007). Given the increased representation of people from various backgrounds in work groups, this study seeks to elucidate the underlying mechanisms in the formation of faultlines.

The purpose of this study is two-fold. First, this research extends previous literature on faultlines by investigating variables that can activate faultlines. Faultline literature is based on the assumption that when group members align on certain dimensions, subgroups will form between group members with the most commonalities. However, this may not always be the case. Members may have shared attributes within a group (e.g., Black males with MBAs and Asian females with English degrees) that are not salient enough for group members to notice and cause these potential faultlines to activate. In hopes to elucidate the mechanism by which faultlines activate, I investigate the role appraisals (intrinsic and instrumental) play with potential faultlines in activating faultlines. Neumann (2000) found that appraisals of an undesirable situation will engender negative emotions. In accordance, I propose that intrinsic appraisals will trigger faultline activation in groups that have potential faultlines because individuals are being instructed to think about undesirable qualities within their group, which exacerbates the perception of member differences. Finally, my study attempts to show how the activation of faultlines can ultimately affect performance and satisfaction by engendering conflict between and within subgroups.

## APPRAISALS

The appraisal process involves the subjective evaluation of a situation, which may in turn determine emotional reactions. Instrumental or extrinsic appraisal involves the evaluation of a situation based on its relationship to surrounding events or circumstances. Intrinsic appraisal is the evaluation of an event solely based on its property (Scherer, 2005). In this study, the manipulations of instrumental and intrinsic appraisals were used to measure how group members felt their group performed on a problem solving task. I define instrumental appraisal as the perceived obstacles that members created in the group, and intrinsic appraisal as the perceived undesirable qualities of group members (Bezrukova, Roseman, & Phebus, 2005). Due to the lack of appraisal literature in faultline research, I use previous literature of appraisal manipulation in emotion-based research, in order to explain the manipulation of intrinsic and instrumental appraisals.

Several studies have explored manipulating appraisals in order to trigger a desired outcome or repress an undesirable outcome (Roseman & Evdokas, 2004; Neumann, 2000). Roseman and Evdokas (2004) investigated the causal relationship between appraisals and emotions. They manipulated appraisals and outcome probability and found that cognitive evaluation *can* be appraised. Subjects who were primed to believe that a stimulus was pleasurable were more likely to rate the experience as joyful when they received the stimulus. In addition, when primed to believe that an experience was unpleasant and most likely to occur, subjects displayed relief when the experience was avoided. Conversely, subjects experienced hope when they were primed to believe that an event pleasurable and less likely to occur.

Similarly, Neumann (2000) evaluated a proposed model that suggested internal appraisals of a negative outcome leads to guilt, whereas, external appraisals of a negative outcome leads to anger. He used a priming method that activated internal or external appraisal prior to the exposure to the negative event. The results of his study supported these propositions. Furthermore, Lanctôt and Hess (2007) found that the manipulation of intrinsic appraisals (pleasantness) affected the timing of the emotional outcome. Specifically, facial responses to the evaluations were faster in the intrinsic appraisal condition (whether the event is pleasurable) rather than the goal conduciveness condition (whether the event affects goal attainment).

Seimer, Mauss, & Gross (2007) explored whether appraisals can produce different emotional responses in a situation. They found that the intensity of an outcome (emotion) can be affected by the appraisal. In addition to finding support of the hypothesis, similar appraisals were found among a subgroup of participants with the same emotional styles. Mauss, Evers, Wilheim, & Gross (2006) found that individuals' appraisal of a situation significantly affected their experience of the outcome.

## FAULTLINE THEORY AND ACTIVATION

As stated earlier, Lau & Murnighan (2005) used the term "faultlines" in order to describe the hypothetical lines that split a group into smaller groups (subgroups) based on one or more attributes. Faultlines can be categorized as strong or weak based on the alignment of multiple subgroup attributes. For example, if group members split into two distinct groups (i.e. college graduates and high school graduates) the strength of the faultline is described as strong. On the other hand, if members are classified by multiple,

overlapping attributes, the faultline can be described as weak (Pearsall, Ellis, and Evans, 2007). Researchers within this theory predict that faultlines through the alignment of compositional diversity create tension, competition, and conflict between subgroups emerging from faultlines.

Several studies have provided empirical support for faultline consequences. Faultlines have been shown to increase conflict, decrease trust (Polzer, Crisp, Jarvenpaa, & Kim, 2006), lower morale and performance (Thatcher, Jehn, & Zanutto, 2003). Conversely, studies have found that groups with faultlines experienced less relationship and process conflict, increased performance and team learning (Thatcher, Jehn, & Zanutto, 2003; Earley & Mosakowski, 2000; Gibson & Vermeulen, 2003).

One explanation for the lack of consistency is that faultline measures presume that demographic attributes will be salient enough for group members to perceive divisions and lead to disruptive group and subgroup behavior (Pearsall, Ellis, & Evans, 2008). Although researchers may perceive faultlines in a group, if the group does not perceive faultlines, then measuring the group outcome as influenced by faultlines would be inaccurate. The salience of differing attributes has been attributed to normative fit, comparative fit, and cognitive capacity (Pearsall, Ellis, & Evans, 2007; Blanz, 1999). Normative fit is described as the degree to which an individual is perceived to fit within the normal range of expectations (Coats, Latu, & Haydel, 2007). The use of gender roles or stereotypes in work teams could be an example of normative fit. Comparative fit is the variance between individual and group attributes (Blanz, 1999). Finally, cognitive capacity deals with the ability to actual by discern differences and the ease with which the task is accomplished (Coats, Latu, & Haydel, 2007; Pearsall, Ellis, & Evans, 2007).

Though basing subgroup categorization on subjective perception of group members is important, it is imperative to also have an objective analysis (say, an unbiased outsider also perceiving the subgroup distinctions), in order for us to better understand the faultline mechanisms. Hence, to understand the actual effects of faultlines, examination from both angles, from objective as well as from subjective or perceptual sides of faultlines, is needed.

Potential faultlines are hypothetical divisions based on demographic alignment, while active faultlines occur when group members perceive these divisions and split into subgroups based on the alignment of two or more demographic attributes (Bezrukova & Jehn, 2003). Members do not always notice these alignments, in which case, potential faultlines are not activated. This study seeks to explore the mechanism by which faultlines become active by examining appraisals as aiding potential faultlines in faultline formation.

## CONFLICT: HARMFUL OR HELPFUL?

Traditionally conflict research has taken a negative view, focusing on detrimental group outcomes (i.e. decreased performance and loss in production) (Pelled,1996) due to coercion and power struggles in the group. The conflict theory developed by Marx and Webber predicts that conflict will exist between subgroups, when they use their power and influence to benefit only their subgroup, without considering the needs of the out-group members (Dahrendorf, 1959). Similar to that effect, Jackson (2001) found that participants were less cooperative and more self-focused when they acquired a larger endowment due to their status, than when they acquired a large endowment due to

chance. In addition, they were less likely to help the community as a whole. However, support for the negative hypothesized effects of conflict on group outcomes has been inconsistent (Jehn & Bendersky, 2003).

Conflict literature suggests that past theories have been inadequate due to the assumption that all types of conflict function similarly (Jehn & Bendersky, 2003). Recent studies

(Lau & Murnighan, 2005; Li & Hambrick, 2005; Homan, Van Knipperberg, Van Kleef, De Dreu, 2007) have investigated the different types of conflict, finding that conflict can be beneficial in certain circumstances. In accordance, Jehn & Bendersky (2003) argue that type of conflict affects group outcomes and suggests that managers can manipulate performance output by using conflict to reach desired outcomes.

## GROUP CONFLICT

Group conflict or intragroup conflict occurs when a group composed of at least two members are incompatible and/or oppose each other (Jehn & Bendersky, 2003; Jehn & Mannix, 2001). Traditionally, conflict research has focused on opposing ends or goals as the source of opposition and dissension within the group (Jehn, 1997). However, McGrath (1984) notes that conflict can occur even when the ends are similar. For example, group members can disagree on the means by which they accomplish similar goals. This disagreement suggests exploration of different types of conflict that occur within a group, such as task, relationship, and process.

*Task conflict* occurs when members of a group are aware of the differences in opinions or viewpoints of a task (Jehn & Mannix, 2001). For example, disagreement may

occur over the "distribution of resources, about procedures and policies, and about judgments and interpretations of facts" (De Dreu, 2006). Although task conflict can turn into a heated discussion, it lacks the interpersonal quality found in relationship conflict (Jehn & Mannix, 2001). In addition, Li & Hambrick (2005) found that task conflict was not related to behavioral disintegration, unlike emotional or relationship conflict.

A number of studies have found positive group outcomes due to task conflict (De Dreu, 2006; Jehn, 1997; Amason, 1996). For example, in a study of a Fortune 500 company, Jehn (1995) found that groups with task conflict had higher performing individuals and experienced an increase in group performance than groups without task conflict. Other studies, however, have found task conflict to be associated with negative or mixed outcomes (DeDreu, 2006). In a study, investigating conflict on workgroup outcomes, Jehn, Chadwick, & Thatcher (1997) found that member perceptions of task conflict decreased perceptions of performance and satisfaction. Jehn (1995) found while groups with low levels of task conflict will experience low levels of performance, groups with high levels of task conflict experienced high levels of performance.

*Relationship conflict* occurs when members experience incompatibilities that are not-related to the task, such as personal issues. For example, group members may argue over social events and gossip, (Jehn, 1997) dislike members, and experience tension and friction (Jehn & Mannix, 2001). Unlike, task conflict, empirical studies of relationship conflict has produced consistent negative outcomes. Members' perceptions of relationship conflict has been shown to decrease group performance, perceptions of performance, and member satisfaction (Jehn, Chadwick, & Thatcher, 1997). In an examination of the benefits and detriments of intragroup conflict, Jehn (1995) found that

relationship conflict not only lowered satisfaction, but also, the liking of group members and intention to stay in the group. Jehn (1997) states that relationship conflict draws attention away from task-related objectives and members spend more effort on reducing threats and build cohesion.

*Process Conflict* is differences about the means of completing a task. For example, members will disagree on the delegation of tasks and responsibility, how much responsibility people should receive, and how to schedule tasks (Jehn & Mannix, 2001; Jehn 1997). Out of the three types of conflict, process conflict has been the least explored. Several empirical studies have shown process to be related to low group morale, decreased productivity and performance (Jehn, 1995; Jehn & Mannix, 2001; Jehn, Northcraft, & Neale, 1999).

## INTERSUBGROUP CONFLICT

Once a group splits into subgroups, disagreements (intersubgroup conflict) between the two subgroups may occur relating to the task being completed. A common misconception about intersubgroup relations is that frequent interaction will reduce the amount of conflict between the two groups (LaBianca, Brass, & Gray, 1998). While some research has shown positive effects from frequent interaction (Krackhardt & Stern, 1988; Nelson, 1989), other research has shown that increased interaction can, in fact, worsen conflict (Ben-Ari & Amir, 1988). One explanation is the salient nature of in-group/out-group perceptions. Greater interaction, leads to increased exposure to conflictual situations, and as conflict increase between subgroups, so does in-group bias (LaBianca,

Brass, & Gray, 1998). This bias consists of viewing one's own subgroup as favorable, and the opposing subgroup as unfavorable.

Intersubgroup conflict has been shown to engender negative outcomes. Jetten, O'Brien, & Trindall (2002) investigated the effects of a work team restructure. Pre-restructure analysis found that subgroup and superordinate identification was related to negative feelings towards the restructure. The employees' subgroup identification was directly proportional to how negatively they appraised upcoming change. Furthermore, post-restructure analysis revealed lower levels of work team and organizational identification, job satisfaction, and perceived work team performance than pre-restructure analysis. Finally, Kessler & Mummendey (2001) found that salient subgroup categorization (i.e. East German and West German) enhanced conflict between subgroups.

This study contributes to faultline and conflict literature by exploring intersubgroup effects. In addition, my research extends this literature by looking at conflict that occurs *within* subgroups (intrasubgroup) and exploring different types of conflict (task, relationship, and process) that may arise from subgroup interaction.

## HYPOTHESES

*Hypothesis 1 (H1).* Appraisals will moderate the relationship between potential faultlines and faultline activation, such that intrinsic appraisal in groups with potential strong faultline will activate faultlines. (See Fig. 1).

Several studies have explored manipulating appraisals in order to trigger a desired outcome or repress an undesirable outcome (Roseman & Evdokas, 2004; Neumann,

2000). In addition, manipulation of appraisal has been shown to speed up the timing of the outcome (Lanctôt & Hess, 2007). Since potential faultlines are not activated on their own, the addition of appraisals will aid in this triggering of faultline-activation. This is because the manipulation instructs the participants to think about member differences (faultlines), which exacerbates the division already present in potential faultlines. Extending past research into the realm of within subgroup conflict, I propose that:

*Hypothesis 2 (H2)*. Perception of active faultlines will lead to increased intrasubgroup conflict.

Faultlines have been found to negatively and directly affect team functioning, decrease group cohesion, increase group conflict, decrease trust, lower morale and performance (Molleman, 2005; Polzer, Crisp, Jarvenpaa, & Kim, 2006; Thatcher, Jehn, & Zanutto, 2003). In accordance with these findings, I believe the perception of strong faultlines will lead to increased intrasubgroup conflict.

*Hypothesis 3 (H3).* Participants with high intrasubgroup conflict will experience low levels of performance and satisfaction.

Task and process conflict has been associated with decreased perceptions of performance and satisfaction (Jehn, Chadwick, & Thatcher, 1997; DeDreu, 2006; Jehn, 1995; Jehn & Mannix, 2001; Jehn, Northcraft, & Neale, 1999). Thus, I argue that intrasubgroup conflict will lead to negative intrasubgroup outcomes.

*Hypothesis 4 (H4).* Perception of active faultlines will lead to negative intersubgroup outcomes such that, active faultlines will result in increased intersubgroup conflict.

When active splits are apparent in the group they can result in conflict. Bezrukova & Jehn (2003) found that groups with activated faultlines were more likely to engage in

intersubgroup conflict. In addition, Lau & Murnighan (1998) found that active faultlines lead to conflict due to perceived differences amongst team members.

*Hypothesis5 (H5):* Participants with high intersubgroup conflict will experience high group performance and low satisfaction.

Participants are more likely to experience low levels of satisfaction with high levels of intersubgroup conflict, than members who experienced low levels of intersubgroup conflict. In addition, groups with high levels of intersubgroup task conflict tend to perform better (Jehn, 1995; Bezrukova & Jehn, 2003). Process conflict, like task conflict, between two groups may actually challenge each group to increase quality thinking and perform optimally, due to the range of possibilities and ideas engendered in the group.

## METHOD

### Sample

The data that I am using were previously collected as part of a faultline and emotion study by Bezrukova, Roseman, & Phebus (2005). One hundred and fifty-six students (43 groups of 3 to 5 members) from a North-Eastern university participated in this study. Seventy-six percent of the participants were female, while twenty-four percent were male. The average age of the participants was 25.1 years of age. The ages ranged from eighteen to forty-seven. The participants described their race as the following: White (65.5%), Black (14.5%l), Asian (10.3%), and Hispanic (9.1%). Participants identified with various nationalities, the majority identified with the following: Irish (28.5%), Italian (18.2%), German(14.5%), and English (6.1%).

**Procedure**

The participants were asked to perform "Winter Survival Task" (Johnson & Johnson, 1975). This task is composed of three phases. The first phase asked group members to individually rank 12 items according to need for survival after a plane crash. Items consisted of ball of steel wool, newspapers, compass, hand ax, cigarette lighter, pistol, map, canvas, clothing, can of shortening, whisky, and chocolate bar. In the second phase, groups were asked to develop two different sets of rankings either as a whole group or subgroup. The third phase instructed group members to decide upon a single ranking based on the previous two sets of ranking. Group members were encouraged to reach a consensus and note which ranking was frequently used in their decision making. Participants were given extra credit for participation in the in-class activity and were debriefed after the completion of the study.

**Experimental Manipulations**

*Weak Faultlines vs.Strong Faultlines.* A month before the study began, participants were asked to provide the Investigator with demographic information such as race, gender, and ethnic heritage, birthplace, major, and class year. The Investigator formed potential faultline conditions (strong and weak) with the information provided. The strong faultline condition consisted of groups with two genders, races, and ethnic heritages, while the weak faultline condition was composed of members that were homogenous on gender, race, and/or ethnic heritage (See Fig.1)

*Instrumental vs. intrinsic appraisals.* After completion of Phase 2, groups were provided with feedback on their group's decision. Each group was told that their group did not choose the best solution. Next, participants were asked to individually complete

the "Observation of Group Processes" questionnaire as a manipulation check. This questionnaire asked the participants to rate "undesirable quality or qualities that people have shown in your group (intrinsic appraisal manipulation) or obstacle or obstacles that people have created in your group (instrumental appraisal manipulation)," on a scale 1 to 9 (1=instrumental rating, 9=intrinsic rating) (Bezrukova, Roseman, & Phebus, 2005).

**Measurement Methodologies**

I used three measurement methodologies: contextual ratings by independent raters, a faultline algorithm (Thatcher, Jehn, & Zanutto, 2003) used to measure potential faultlines, and pre- and post-questionnaires to check manipulation.

*Contextual ratings.* The investigator chose two raters who were blind to the experiment conditions and hypotheses to evaluate the groups according to the study variables. Raters were given a list of the study constructs and definitions. Then, they were instructed to listen to the recorded audiotapes of each group's interactions and rate the groups/subgroups on a scale from 1 to 5 (1=not at all and 5=a lot) on how well their behaviors fit the constructs. The average inter-rater agreement was .92.

*Potential Faultlines.* Faultlines were assessed using a *Fau* measurement developed by Thatcher, Jehn, and Zanutto (2003). The measure uses demographic characteristics such as sex, age, race, nationality, and major to describe group heterogeneity. It describes the potential splits that may occur within a group using a percentage based on total demographic variability.

*Pre – and Post – Experimental Questionnaires.* Questionnaires were given to the participants before and after the experiment to assess the faultline and appraisal manipulation.

**Measures**

*Active Faultlines, Intrasubgroup Conflict, Intersubgroup Conflict, Performance, and Satisfaction.* Contextual ratings were used to measure active faultlines, intrasubgroup conflict, intersubgroup conflict, performance, and satisfaction using a 1 to 5 scale (See Appendix 1). These variables were measured at the individual, subgroup, and group level. For data analysis purposes, median splits were used to place participants into weak vs. strong faultline groups and low vs. high conflict, performance, and satisfaction groups.

**Manipulation checks**

The potential faultline and appraisal manipulation were assessed using pre- and post-experimental questionnaires. Several questions were used to test the potential faultlines. Participants were asked to answer the following question on a scale 1 to 5 (1=not at all, 5=a lot), ""Do you believe that your group is racially homogeneous?" Individuals in the weak potential faultline condition were significantly more likely to rate their group as homogenous, ($M$ = 4.18, $SD$ = .67), than individuals in the strong potential faultline condition, ($M$ = 2.04, $SD$ = .83), $t$ (164) = 25.84, $p < .05$. This item was reverse-coded to evaluate consistency. Participants were asked, ""Do you believe that your group is racially heterogeneous?" and to rate the answer on a scale of 1 to 5. Participants in the strong faultline condition were significantly more likely to rate their group as being heterogeneous *(*$M$ = 4.16, $SD$ = .73), than participants in the weak faultline condition *(*$M$ = 1.94, $SD$ = .81), $t$ (164) = 26.36, $p < 05$. Participants were asked similar questions regarding their ethnic identity. On a scale of 1 to 5 (1=not at all, 5=a lot), participants were asked, ""Do you believe that the members of your group are ethnically alike?" Individuals in the weak faultline condition were more likely to evaluate their group as

ethnically homogenous ($M$ = 4.28, $SD$ =.79) than individuals in the strong faultline condition ($M$ = 2.09, $SD$ = .72), $t$ (164) = 26.76, $p$ <.05.Finally, participants were asked, "Do you believe that the members of your group are ethnically diverse?" Participants in the strong potential faultline condition were more likely to rate their group as ethnically diverse ($M$ = 4.06, $SD$ = 1.05), than participants in the weak potential faultline condition ($M$ = 1.91, $SD$ = .71), $t$ (164) = 20.7, $p$ <.05.

I assessed appraisal using two items, which were significantly different in the expected directions across conditions. Each question used a scale from 1 to 9, with 1= "My emotion toward my team is caused by perceiving that someone or something has positive or negative qualities" and 9= "My emotion toward my team is caused by perceiving that someone or something is facilitating or obstructing a goal." Participants in the intrinsic appraisal condition were significantly more likely to rate group members undesirably (M=2.49, SD=1.15), compared to the participants in the instrumental appraisal condition, (M=7.41, SD=1.07), t(164)=45.63, p<.05. The responses were similar with the reverse-coded item. Participants in the instrumental appraisal condition were significantly more likely to blame group members for creating obstacles (M=2.71, SD=.93), compared to the participants in the intrinsic appraisal condition, (M=7.67, SD=.97), t(164)=47.86, p<.05.

## RESULTS

Correlations among the variables included in the hypotheses tests are included in Table 1.

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Table 1 about here

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Using a 2x2x2 between subjects ANOVA design crossing potential faultlines (weak vs. strong), appraisals (intrinsic vs. instrumental), and faultline activation (no alignment vs. alignment), I examine the hypothesis that intrinsic appraisals aid potential faultlines in activating faultlines. Using the individual-level of analysis, significant results were found for the interaction of appraisals and potential faultlines, $F(1,152)= 6.29$ ($p<.05$) (See Table 2). Faultlines were more likely to form in groups with potential strong faultlines where members were instructed to think about undesirable qualities of group members (intrinsic appraisal condition) ($M=1.74$, $SD=.45$) rather than in groups with potential strong faultlines where members were instructed to think about obstacles that people created within the group (instrumental appraisal condition) ($M=1.22$, $SD=.42$). Furthermore, faultlines were more likely to occur in groups in the intrinsic appraisal condition with potentially weak faultlines ($M=1.63$, $SD=.48$) than in the instrumental appraisal condition with potentially weak faultlines ($M=1.48$, $SD=.51$). While significant main effects were found for appraisals ($F(1,152)=19.67$, $p<.05$), potential faultlines were not activated significantly ($F(1, 152)=1.06$, n.s). This provides support for Hypothesis 1 (See Fig.2).

Independent sample t-tests were conducted to evaluate the effect of active faultlines (no alignment vs. alignment) on intrasubgroup conflict. Using subgroup-level analysis, moderate significance was found for intrasubgroup process conflict, $t(84)=1.74$, $p<.10$. However, it was not significant for intrasubgroup relationship conflict, $t(84)=1.26$,

n.s, nor intrasubgroup task conflict, t(84)=1.33, n.s. Subgroups with active faultlines had higher intrasubgroup process conflict (M= 1.59, SD=0.49) than subgroups without active faultlines (M=1.40, SD=0.49). These findings provide partial support for Hypothesis 2.

Hypothesis 3 was assessed using an independent sample t-test. I evaluated the hypothesis for intrasubgroup process conflict using the subgroup-level of analysis. The results revealed significance for satisfaction, $t(84)=2.35$, $p<.05$ and performance, $t(84)=2.76$, $p<.05$. Participants who experienced high intrasubgroup process conflict were more likely to have low levels of satisfaction (M=1.56,SD=.50) and performance (M=1.49, SD=.50), while participants who experienced low intrasubgroup process conflict were more likely to have high levels of satisfaction (M=1.79, SD=.41) and performance (M=1.77, SD=.43).

I used independent sample t-tests to assess the relationship between active faultlines (alignment vs. no alignment) and intersubgroup conflict. Using group-level analysis, significant results were found for intersubgroup task conflict $t(41)=3.28$, $p<.05$ and intersubgroup process conflict $t(41)=2.21$, $p<.05$. When groups experienced active faultlines, they had higher intersubgroup task conflict (M=1.57, SD=.51) than groups without faultlines (M=1.14, SD=.37). Groups with strong faultlines were more likely to experience higher levels of intersubgroup process conflict (M=1.43, SD=.51) than groups with weak faultlines (M=1.14, SD=.35). Intersubgroup relationship conflict was not found to be significant $t(41)=.62$ n.s. These results provide partial support for Hypothesis 4.

Finally, using independent sample t-tests, I assessed the effect of intersubgroup conflict on performance and satisfaction. Hypothesis 5 was analyzed using the group-

level of analysis. First I evaluated intersubgroup task conflict. Significant results were found for performance, $t(41)=2.35$, $p<.05$, however, satisfaction did not reveal significant results, $t(41)=.75$, n.s. Participants who experienced high intersubgroup task conflict were more likely to have high levels of performance ($M=1.75$, $SD=.44$), while participants who experienced low intrasubgroup task conflict were more likely to have low levels of performance ($M=1.40$, $SD=.51$). Next, I assessed the effects of intersubgroup process conflict. Significant results were not found for performance, $t(41)=.06$, n.s. and satisfaction, $t(41)=.32$, n.s.

## DISCUSSION

Understanding group dynamics is essential in an organizational world that is increasingly becoming more team-oriented. Organizations use teams to solve big and small issues, and it is believed that teams, especially those with diverse members, engender greater creativity and innovation. However, recent research has shown inconsistent effects of group diversity in team work and performance.

This study seeks to clarify previous faultline research by exploring possible factors that may activate faultlines. Ultimately, I found that potential faultlines can lead to active faultlines through appraisal manipulation. I believe the results in my paper are beneficial to the understanding of work team formation and dynamics.

In attempts to address moderators that will strengthen the relationship between potential faultlines and active faultlines, I explored the effect of appraisals. I found that faultlines were more likely to activate in groups with potential faultlines where members were instructed to think about undesirable qualities of group members (intrinsic appraisal condition) rather than in groups with potential (strong or weak) faultlines where members

were instructed to think about obstacles that people created within the group (instrumental appraisal condition). I believe that members were more likely to respond to the presence of potential faultlines when their attention was focused on listing negative qualities of their group members. These negative qualities seem to consciously affect participants' desire to work with undesirable group members. Furthermore, it seems likely that participants are more forgiving of obstacles group members have created, since there is a social perception that some obstacles can be unavoidable.

Finally, I explored the consequences that occur within and between subgroups after faultline activation. I found that process conflict was present within subgroups, while task and process conflict were present between subgroups. I believe that process conflict would be more evident within subgroups because discussion is more focused on means of completing the task, rather than different member viewpoints (task conflict). Additionally, it seems more plausible that task conflict occur between subgroups due to differences in subgroup opinions on task completion. Finally, it is important to distinguish the effects of intersubgroup conflict and intrasubgroup conflict. Intersubgroup task conflict will result in higher levels of performance, though this may be due to the competitive nature of the two groups which may promote creativity and innovation. However, conflict has a different effect within the subgroup because the clash prohibits the subgroup from working effectively towards a common goal, which leads to dissatisfaction with group members.

**Limitations**

I will discuss a couple of limitations that can be used to guide future research. As stated earlier, one limitation is that competitive tasks were used to evaluate the

hypotheses. While it is useful to explore how groups would function in a competitive environment, it might be equally as useful to examine how groups function in a non-competitive environment. Specifically, it should be noted if the groups respond similarly to subgroup/group identification, or appraisals. In addition, it would be interesting to discover if the interactions in the group would still engender conflict between subgroups.

Next, personality variables were not included in this study. I believe differences in personalities may lead certain individuals to easily detect differences in group members thus speeding up the process of faultline activation. Future studies should explore the role personality has on faultline activation.

I believe the contextual ratings are realistic in the organizational environment, as employees' behaviors and actions are often rated by the managerial staff. However, I believe that future research should examine self-reported data as a complement to the rater's observations. This help us better understand the decision-making that leads to faultline activation.

Finally, I believe future research would benefit by examining established work groups. Though my research provides a perspective from the initial group formation, it would be interesting to note the underlying factors of faultline activation in established work groups. In addition, I believe that the lack of significance for relationship conflict in this study stems from the fact that the participants did not know each other well before working on this task.

**Organizational Implications**

There are a couple of practical implications for this study. Since organizations are often responsible for forming diverse work groups to complete tasks, they should take

extra precautions in ensuring that the group experience is positive. While it has been shown that faultlines can lead to negative effects, organizations should be open to discussing the benefits of working as a team with their employees. I believe that positive perceptions of the group and group members, unlike the appraisal condition, will aid in reducing faultline formation, which might go far to alleviate the problems of faultlines.

As stated earlier, organizations may benefit from the intersubgroup task conflict variable, as it has been shown to increase performance. However, I feel that this may only be necessary in organizations where employee performance and creativity would greatly benefit from the competitive team environment (e.g. sales) .I believe these tactics should be used in moderation until we fully understand the long-term group well-being effects.

In conclusion, I hope that the findings of these studies will inspire more examination of diverse teams and team work. Furthermore, I hope this will guide organizations and researchers in developing solutions to negative effects of faultline activation.

**Fig 1. Hypotheses Model**

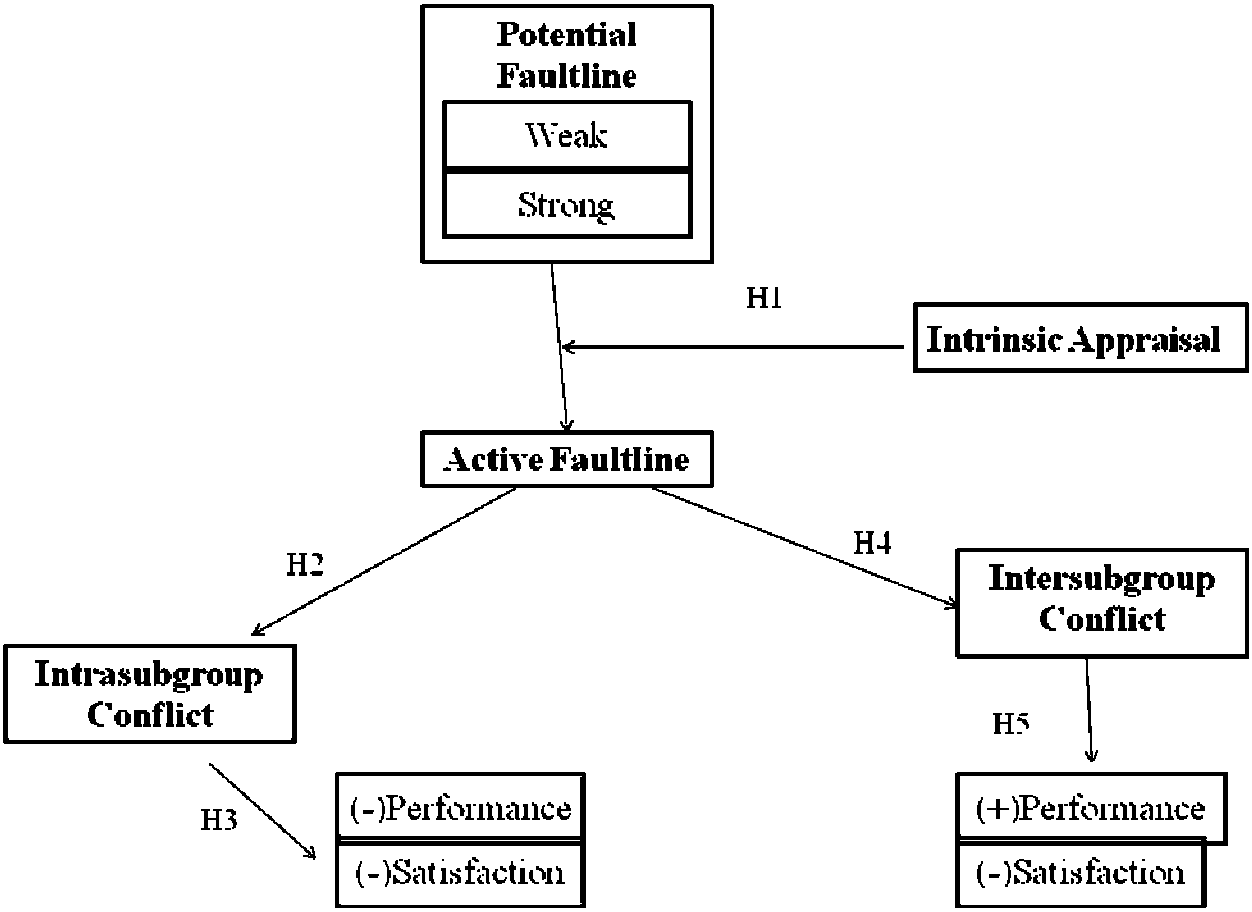
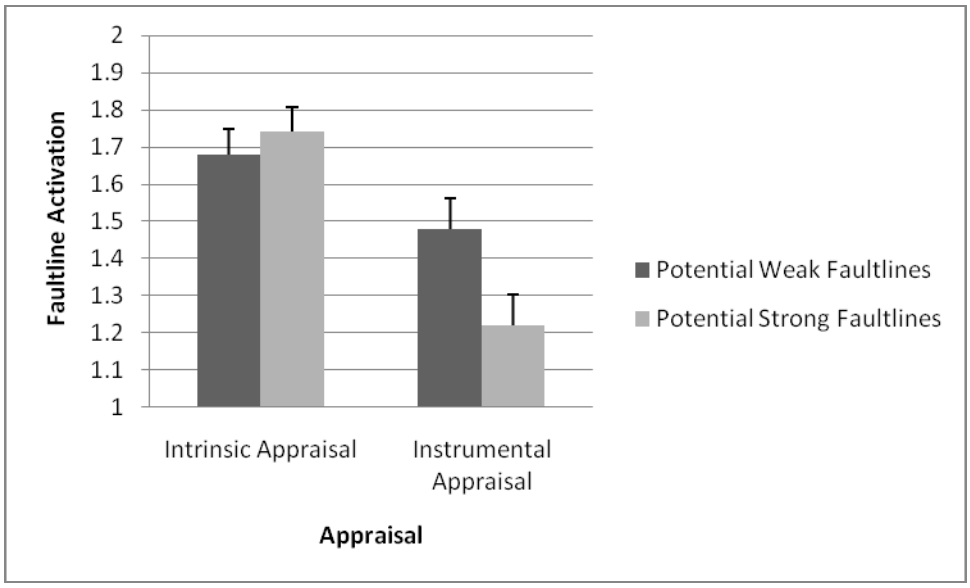


**Fig 2. Proportion of groups in which faultlines were activated**




Note: 1=No Faultline Activation, 2= Faultline Activation

TABLE 1

Correlations and descriptive statistics of study variables.

| | Mean | SD | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (N=156) | | (N=156) | | (N=43) | | (N=43) | | | | | | | | |
| 1 Group Size | 3.89 | .47 | 3.84 | .48 | | .17 | -.06 | .06 | -.13 | -.12 | -.40* | .01 | .06 | .05 | -.14 |
| 2 Potential Faultline | .74 | .33 | .73 | .34 | .15 | | .18 | .15 | -.12 | .19 | -.06 | -.15 | .02 | .25 | -.04 |
| 3 Active Faultline | .50 | .50 | .48 | .51 | -.05 | .15 | | .22 | .12 | -.01 | .45** | .19 | .31* | -.04 | .02 |
| 4 Intrasubgroup Task Conflict | 1.15 | .62 | 1.13 | .45 | .05 | .12 | .17* | | .01 | .44** | .26 | .07 | .69 | -.33* | -.09 |
| 5 Intrasubgroup Process Conflict | 1.67 | .70 | 1.65 | .67 | .10 | -.06 | .15 | .01 | | .31* | .09 | .44** | -.02 | -.09 | -.36* |
| 6 Intrasubgroup Relationship Conflict | 1.19 | .49 | 1.21 | .40 | .00 | .11 | .05 | .39** | .29** | | .18 | -.02 | .31* | -.24 | -.18 |
| 7 Intersubgroup Task Conflict | 1.63 | 1.04 | 1.63 | 1.04 | -.26** | -.10 | .41** | .21** | .09 | .29** | | .28 | .43** | -.37* | -.18 |
| 8 Intersubgroup Process Conflict | 1.32 | .63 | 1.32 | .62 | .17* | -.09 | .22** | .08 | .43** | .07 | .30** | | .26 | .06 | -.13 |
| 9 Intersubgroup Relationship Conflict | 1.15 | .57 | 1.14 | .45 | .06 | .01 | .26** | .42** | .05 | .45** | .43** | .24** | | -.24* | -.05 |
| 10 Performance | 3.14 | .81 | 3.17 | .82 | .04 | .28** | .02 | -.25** | -.10 | -.28** | -.35** | .01 | -.20* | | .23 |
| 11 Satisfaction | 2.87 | .63 | 2.89 | .61 | -.24** | -.06 | .02 | -.06 | -.36** | -.15 | -.15 | -.14 | -.04 | .20* | |

** Correlation is significant at the 0.01 level (2-tailed). ; * Correlation is significant at the 0.05 level (2-tailed).
Individual level correlations are reported in the lower triangle.
Group level correlations are reported in the upper triangle.

Table 2. Analysis of variance for faultline activation.

| | SS | df | MS | F |
|---|---|---|---|---|
| Appraisals | 4.23 | 1 | 4.23 | 19.67* |
| Potential Faultlines | .23 | 1 | .23 | 1.06 |
| Appraisals x Potential Faultlines | 1.35 | 1 | 1.35 | 6.29* |
| Error | 32.72 | 152 | .22 | |

*p<.01

**Appendix 1. Definitions and Scoring Rules**

**Active Faultlines**: When the group splits into two subgroups based on alignment of one or more demographic attributes (ethnic, race, gender, seniority…be aware of the cause of divide)

a. Faultlines are coded on a scale of 1-5, with 1 meaning no faultlines are present.

*Examples:*

**SCORE = 4; Strong negative divide in group structure (male vs. female) that leads to hostility.**

F: as long as it's not connected to the two ends then it's free standing
J: Can we build it that way and then take it up to the ceiling
F: Why do we have to
J: I think it's cheating
F: It's not
K: It's a guaranteed victory if we go with that
J: Well why don't you ask her
M: I don't think you can attach it to the ceiling it has to be completely free standing away, so that you could move it and it would still be standing
J: Basically it would be hanging
M: Yeah
**(Faultlines based on gender)**

**SCORE = 5; Obvious faultline based on gender (male vs. female).**

V: I'll have it known that the two men disagree with the two females, I just wanted to get that…
**(Faultlines based on gender)**

**SCORE = 5; Strong negative divide in group based on race, which leads to hostility.**

J: I think we should split because we're gonna start one page, and we're not going to go anywhere, so we should split and do it.
A: Yeah, but this is survival I think we would be able to work, no?
J: We can do a negotiation work to (Inaudible), we're gonna split. I wanna finish it, I wanna finish it…
J: Our group history? Chances are less that we'll even get it finished, and we're already wasting time.
A: Well, what do you think is the most important thing?
J: Getting it finished and not having a debate about it.
A: But we're not going to do it together at all? Cause I think…
J: We'll do it in subgroups. Me and you bump heads, I can't work with you.
**(Faultlines based on race)**

**Task Conflict**: Disagreements among people about the content of the task being performed, including differences in ideas, opinions, strategies, objectives (usually seen as constructive—i.e. disagreements about materials needed)

a. Task conflict is coded on a scale of 1-5, with 1 meaning no task conflict and 5 meaning high in task conflict.
b.
1. Intersubgroup TC = between subgroups.
2. Intrasubgroup TC = within subgroups.

*Intersubgroup Examples:*
**SCORE = 2; Slight disagreement over strategies pertaining to the task, not necessarily resulting in prolonged conflict or hostility in the group (K suggesting that an idea is "too skinny" and S and L (subgroup 1) suggest otherwise)**
L: if everyone gets like four … [inaudible]
K: take a piece of paper and then staple it …. [Inaudible]
K: I think it's too skinny, we need to provide a wider base and not only that we could do one but like
S: it would be higher if we did one
K: if we did one we would have to, but then we could just staple it to the
S: the point is to get it high, right?
V: How are we supposed to stand up there?
K: if we get it all the way to the ceiling we could then, we could staple it to the ceiling.
L: how are you going to staple it all the way up there?

**SCORE = 4; Strong disagreement over task resulting in obvious conflict and hostility (D points out that, "It will be more stable" and R blatantly says "No"). Also, D and C (subgroup 1) are in agreement, and are having conflict with R (non-subgroup member).**
D: We could make that shorter, you know what I mean. We could do the paper the other way, like this way.
C: Yeah, but the competitions about height.
D: It will be more stable.
R: No …..
D: The height will come from this part.

*Intrasubgroup Examples:*
**SCORE = 3; Disagreement over task resulting in conflict between two members of the same subgroup.**
H: You know what I mean…***I can demonstrate it***…like say this is the base piece, make slits in it there so you can either staple it or, staple it and you don't need to use anything else or if you want for stability after you glue it, you could glue marshmallows around that just to make sure it doesn't … [inaudible].
G: There's no glue, right?
H: But we don't even need to use all of the materials we could do that, like just keep gluing construction paper, whatever you guys think.
G: We could put like marshmallows in between and like glue them together in a way using water.
H: We don't have water.
G: Just so we could utilize everything.

**SCORE = 5; Disagreement over task resulting in obvious conflict and frustration between members of the same subgroup.**
G: five to ten minutes or something. I think we need to move on now.
H: I'm just gonna put this to the base.
G: Ahhh
G: I think if we include another it will not hold anything.
H: You're gonna have to make another layer of this.

**Process Conflict:** Disagreements over how task accomplishment should proceed, who's responsible for what and how things should be delegated

a. Process Conflict is coded on a scale of 1-5, with 1 meaning no process conflict present.
b.
1. Intersubgroup PC = between subgroups
2. Intrasubgroup PC = within subgroups

*Intersubgroup Examples:*
**SCORE = 2; Appearance of conflict or the clarification of roles. Resulting in minimal conflict and no hostility between subgroup and out-group member (J suggests a plan whereas A and M create something different which results in J clarifying the initial intent of the plan).**
J: [Inaudible] … I say just do whatever and try to get a box out of it your know. Don't make it too big.
J: Maybe if ……
A: What's that?
M: A triangle
J: We already discussed that and decided it doesn't, it wouldn't work.

**SCORE = 5; Obvious role assignment or delegation between members of different subgroups (J begins by presenting an idea and M responds by breaking down each member's role in the assignment. J emphasizes this delegation to L).**
J: I'm figuring we could probably get, depending on how we cut the paper, at least like 5 good strips like that would still be ….
M: But we would also do just divide up the tasks. One person can ultimately be the oversight person, and one can be the constructor or stapler, and one of us could be the cutter. It would go a lot faster, rather than all of us just jumping in trying to do one level at a time, so we could just tasking.
L: So, what's going on?
J: Right now we're trying to come up with an idea to make a tower. You could actually fold the paper like this, because we only have 1 pair of scissors.

**SCORE = 5; Obvious disagreement over how the task will proceed between members of different subgroups.**

A: But, do you guys think it's better to split and come together? I think that four heads are better than…
J: I think we should split because we're gonna start one page, and we're not going to go anywhere, so we should split and do it.
A: Yeah, but this is survival I think we would be able to work, no?
J: We can do a negotiation work to (Inaudible), we're gonna split. I wanna finish it, I wanna finish it.

*Intrasubgroup Examples:*
**SCORE = 4; Disagreement over role delegation (obvious that no one knows who should be doing what), resulting in moderate frustration between subgroups members (S and M).**
S - do you want me to hold it up?
C - the top part
M - we are totally killing this thing
C - put this on top of this one and put a staple on the end right here
S - it will work, but it's not going to be pretty
C - OK
M - Ahhhhh, it's not working!

**Relationship Conflict**: Disagreements over personal and social issues ***not related to task at hand***. (tension, animosity, annoyance)

a. Relationship conflict is coded on a scale of 1-5, with 1 meaning no relationship conflict and 5 meaning high in task conflict.
b.
1. Intersubgroup RC = between subgroups
2. Intrasubgroup RC = within subgroups

*Intrasubgroup Examples:*
**SCORE = 5; Strong personality differences between same subgroup members resulting in one making cruel jokes about the other.**
V: We want everybody to know that Brian is gonna leave the group and die in the woods, in his sneakers.

*Intersubgroup Examples:*
**SCORE = 4; Strong personality differences between member of one subgroup and member of the other subgroup, resulting in one making jokes about the other's intelligence.**
S: You got two nines
V: Oh I got two nines
S: First you need to know how to count to twelve.

**SCORE = 5; Strong personality differences between members of different subgroups resulting in one making offensive remarks about the other subgroup.**
V: What planet are you from?

**SCORE = 4; Strong personality conflict resulting in hostility and frustration between members of two subgroups (F begins suggesting an idea and J shoots it down by saying it's cheating).**
F: Why do we have to…
J: I think it's cheating.

**SCORE = 5; Strong negative divide in group based on race, which leads to hostility.**
A: but we're not going to do it together at all? Cause I think...
J: We'll do it in subgroups. Me and you bump heads, I can't work with you.

**Group Performance**: how well the group believes it performs in comparison to other groups.

a. Performance is coded on a scale of 1-5, with 3 being the average.

*Examples:*
******Negative******
**SCORE = 3; The group is comparing their performance to another group and decides they are not doing as well.**
R: It's time to improvise now
C: Because the other team is beating us.

**SCORE = 1; The group decides they did not perform as well as another group, and will not be able to catch up with the other group before the time is up.**
J: I don't know if ours is gonna be as tall as theirs.
Y: I very much so doubt it.

**SCORE = 4; The group clearly does not believe they performed well and expresses their dislike for their plan and tower.**
J: Ours is not working
K: Ours stinks
L: Yeah right

**SCORE = 2; This group does not believe they performed well as other groups, and S is expressing how she feels about their tower.**
S: This is horrible.

**SCORE = 1; M states that she does not believe the group did well on the task, and later goes so far as to say she feels the group cheated.**
L: When do we find out the right answers?
M: I don't know I feel kind of guilty. I don't think we did fine with ours....
M: I feel like we cheated

******Positive******

**SCORE = 5; This group is very enthusiastic about their tower and believe they not only created a stable tower, but also an original one.**
C: That's great!
M: Hey it's standing.
C: Well it was a good effort.
S: Ours is so sturdy, the vent won't even knock ours down.
C: That's creating stability.
M: I think we should get a good score for creativity.

**SCORE = 3; The group believes they performed well, but they are not overly enthusiastic**
H: ours is looking pretty good

**SCORES = 5; The group is enthusiastic about their performance, and obviously feels some gratification from the final product**
J: It's steady as a rock
C: Really
W: Great idea
[Laughter]

**Satisfaction:** How each individual feels with his/her group experience.
a. Satisfaction is coded on a scale of 1-5, with 3 being the average.

*Examples:*

******Negative******
**SCORES: P = 2; P is expressing dissatisfaction with the task**
P: I think it's gonna be a lot of work.

**SCORES: C = 2, M = 1; C is expressing her dissatisfaction with the group by choosing not to participate in the group discussion**
M: You could put marshmallows around it to make sure it doesn't fall
C: Whatever.

**SCORES: F = 2; F is showing his dissatisfaction with his group experience by expressing her lack of confidence in the group's ability to accomplish the task**
F: I'm losing confidence here guys, let's get going we only have 9 minutes

**SCORES: V = 1; V is showing his dissatisfaction with the group's decision, and expresses the fact that he no longer wishes to participate in the group activity.**
V: I'm not in charge of this anymore. I'm done.

**SCORES: W = 1; W is obviously dissatisfied with his group members and their decision on what strategy they're going to use to complete the task.**
W: I don't care…if three people agree that's what you should put.

******Positive******

**SCORES: S = 4, M = 2, S = 3; S is expressing her satisfaction with the group's ability to be creative and develop a new strategy for accomplishing the task, and also shows her satisfaction with her group members by feeling free to make jokes; M is not as enthusiastic, but does express the fact that she agrees with Stephanie**
S: Oh great ideas are always redesigned!
M: I agree
S: It's color coordinated
…Laughing by all three of the girls…

**SCORES: B = 5; High levels of enthusiasm toward the group experience and ideas being presented.**
B: That sounds fantastic!

**SCORES: J = 3; Feelings of satisfaction toward the group but neither overtly negative or positive.**
J: We did good.

**SCORES: D = 4, M = 4, P = 3; Group is obviously satisfied with the strategy they followed and the outcome of the task. They express satisfaction with group members by providing compliments for their ideas.**
P: I just put mine up and put the pipe cleaners like this
D: that looks good
M: looks very strong

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