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## Abstract

We develop and test a theoretical framework for understanding how cognitive and affective processes (cognitive and affective integration) influence the way in which disagreements (task and process) among group members affect their performance (individual and group level performance). We use this framework to explain how and why diversity may be either beneficial or detrimental to group process and outcomes. Specifically, we examine how group faultlines may hinder members' ability to create a shared understanding of the problem (cognitive integration) and a shared motivation to synthesize their knowledge (affective integration). If this happens, then groups will fail to share and process information, which will hinder group performance and satisfaction. We test this theory on 321MBA students in 88 five to six person teams from a prestigious East Coast university.


**Keywords:** disagreements, diversity, and group performance

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## Introduction

Teams have become a way of life in a broad spectrum of organizational contexts, yet team members' efforts to collaborate effectively have been often thwarted by misunderstandings, ineffective communication and disagreements. Such disagreements evolve around what the task should be and how this task should be achieved (what actions should be taken) (Amason, 1996; Jehn, 1997; Jehn et al., 1999; Kabanoff, 1991; Kramer, 1991; Pelled, 1996). Early research has shown that in some instances, disagreements over task may counteract the biased information-seeking of consensus-based teams and be beneficial for performance (e.g., Jehn, 1995; Schulz-Hardt, Jochims, and Frey, 2003). However, potentially positive effects of disagreements usually break down quickly and become more detrimental than helpful (De Dreu and Weingart, 2003). Researchers suggest that disagreements often interfere with members' abilities to hear each other and process the divergent information.

The empirical evidence appears to be somewhat mixed as to the benefits or costs of conflict. As noted above, some researchers find conflict to be useful to problem solving as it stimulates new ideas (Tjosvold, 1997) or overcomes groupthink biases (Janus, 1967). Yet, other researchers find that disagreements often curtail problem solving. Similarly, there is some evidence that members' differences contribute to better decisions and productivity (Mohrman, Mohrman, and Cohen, 1995), yet other evidence suggesting these differences lead to inconsistencies in members' views of the problem (Cronin and Weingart, 2003).We propose that

cognitive and affective integration are two moderators that might explain these discrepant findings.

We contend that information may be shared (spoken) when disagreements arise (either task or process conflict), but that this information will not be heard or processed through problem solving if cognitive and affective integration are absent. We further contend that cognitive and affective integration are less likely to occur when there is a strong demographic faultline within a group. Hence our model, shown in Figure 1, synthesizes research on demographic diversity and conflict, highlighting the critical role of cognitive and affective integration in explaining how and why diversity and conflict may be either beneficial or detrimental to performance.

**Disagreement**

We draw on the literature on organizational conflict to examine two types of disagreements – task and process – that have been previously identified in working groups, bicultural teams, and other organizing entities (Amason, 1996; Jehn, 1997; Jehn et al., 1999; Kabanoff, 1991; Kramer, 1991; Pelled, 1996). Task disagreements refer to arguments around different ideas and opinions about the task being performed, such as disagreements regarding an organization's current strategic position or determining the correct data to include in a report. Process disagreements refer to arguments over the process of doing the task or dealing with logistical problems, such as how task accomplishment should proceed in the work unit, who's responsible for what, and how things should be delegated (Jehn, 1997).

Conflict has been argued to affect group process and performance both positively and negatively. Conflict can sometimes stimulate new ideas and new ways of thinking about a problem (Tjosvold, 1997), and can sometimes provide more information than the group can work

with (Deutsch, 1973). However, when conflict intensifies, it can become disruptive and interfere with productive information processing (Carnevale and Probst, 1998).

As seen in our model, we do believe that most disagreements will lead to information sharing—that is a vocalizing by various group members of information that supports their position. Although members may be quiet if the disagreement is relatively unimportant or if they have relatively little power (Carnevale & Pruitt, 1983), assuming a modest amount of interest and power equity, most members are likely to voice support for their particular position in a conflict (Pruitt & Rubin, 1986). What we argue, however, is that this information sharing will not necessarily be productive unless cognitive and affective integration occur. That is, the information that is spoken will become "cheap talk" that is discounted or ignored, and not synthesized into a quality solution, unless members integrate it at both a cognitive and affective level.

**Cognitive and Affective Integration**

Group members can be integrated in terms of both their thinking styles and their interpersonal relationships; we call these respectively cognitive and affective integration. Cognitive integration implies that the frameworks (i.e., "thought worlds", see Dougherty, 1992) that group members use to understand and parse the task environment are similar. These frameworks comprise technical language and relationships that are assumed to be true. For example, both operations managers and finance managers use the language of mathematics and believe in optimization as a principle, hence they are highly cognitively integrated. Affective integration implies that people have good interpersonal relationships. That is, that they would view each other with mutual trust, respect, and liking. Cognitive integration allows group members to use information effectively because people share a frame of reference with which

they can work through a problem. Affective integration allows group members to use information effectively because it motivates people to try and incorporate the other party's requests, even when they don't understand.

**Demographic Faultlines**

Cognitive and affective integration will be influenced by the diversity of the group, and specifically the strength of the group's faultlines. Group faultline theory argues that it is not only the dispersion of a demographic characteristic (heterogeneity) that influences group processes and outcomes, but also the alignment across members based on multiple characteristics that are simultaneously considered. Group faultlines are hypothetical dividing lines that split a group into relatively homogeneous subgroups based on the group members' demographic alignment along one or more attributes (adapted from Lau and Murnighan, 1998). An example of a group with a strong faultline would be a four-person group consisting of two white male employees who are 21 years old and two black female employees who are 50 years old. In this group, the members are aligned such that all the men are white and 21 years old and the two females are black and 50 years old. Two homogenous subgroups may emerge in this group based on group members' similarities in gender, race, and age; according to Lau and Murnighan (1998), there is a strong faultline within the group. An example of a group with weak faultline would be a four-person group consisting of one 21-year old Asian female, one 21-year old white male, one 25-year old black female, and one 25-year old Native American Indian male. In this latter group, the demographic alignment across members is not as clear as in the first example because two different subgroup possibilities may evolve around the categories of either gender or age. The more characteristics or layers along which the group is separated, the more cleanly the faultline cuts through the group, and the stronger the faultline will be.

Most diversity and relational demography research focuses on how group members categorize themselves based on demographic characteristics (e.g., race, gender, tenure). It is then assumed that individuals will identify themselves with the categories to which they belong (Tajfel and Turner, 1986); this mechanism of identification explains how differences in demographics can affect conflict (e.g., Jehn et al., 1999; Pelled et al., 1999) and outcomes (e.g. Cummings et al., 1993; Thornburg, 1991). Group faultline theory further suggests that categorization and identification with multiple demographic categories are more likely to create subgroups of individuals who then view other subgroups in a competitive, and often negative, way. These processes have been shown to become a potential source of tension, strain and disagreements in workgroups, suggesting that "faultlines may have more potential for performance losses owing to increased conflict" (Lau and Murnighan, 1998, p. 327). Hence the stronger the group's faultlines, the less likely cognitive and affective integration will occur. Faultlines polarize groups around certain viewpoints because of the pressure to conform to the subgroup norm and because of subgroup competition (Lau and Murnighan, 1998; Wit and Kerr, 2002). When group faultlines develop within diverse groups, the integration of subgroup members' diverse perspectives becomes extraordinarily difficult.

Hence we propose:

Hypothesis 1 (H1): Groups with high levels of disagreements (task and process) will have <u>low levels of group and individual performance</u>.

Hypothesis 2 (H2): Information sharing will mediate the effects of task and process disagreement on group performance; that is, <u>the greater the disagreement, the lower the level of information sharing within a group which leads to lower levels of group performance</u>.

Hypothesis 3 (H3): Demographic faultlines will moderate the relationship between information sharing and group performance; that is, if there are weak faultlines within the group, information sharing will result in high levels of group performance. In contrast, if there are strong faultlines within the group, information sharing will result in low levels of group performance.

Hypothesis 4 (H4): Integration (cognitive and affective) will mediate the moderating effect of demographic faultiness on the relationship between information sharing and group performance.

## Method

*Participants*

Participants were 321 MBA students in 88 five to six person teams. Students ranged in age from 22 to 54, and approximately one quarter were women. The teams were engaged in a realistic business simulation called Management Game (Cohen, Dill, Kuhen & Winters, 1964). Participation in the study earned students a chance to win 6 prizes ranging from $250 - $550.

*Setting*

The MBA teams act as the top management team (TMT) of a wristwatch company. The simulated companies operate in a virtual world for a virtual three-year period over 14 weeks. Sixty-seven parameters in the simulation (e.g., demand, competition, cost of labor, stock price, etc.) interactively determine the dynamics of the world, and the worlds evolve over time in partial response to the organizational decisions made by the teams. The teams make decisions about issues such as product positioning, production method, distribution channels, R&D spending, and organizational financing. These decisions are put into the simulation twice a week

as moves. Teams also have to deal with exogenous shocks and opportunities that arise in the world such as a class action lawsuit, a labor negotiation, and a new factory purchase. At the end of each year, the teams present a report to their board of directors, local business executives who volunteer to act in the simulation. The presentations last about three hours. During this time, teams justify their decisions, summarize their market position, and present their strategy for the coming year.

The simulation begins in March. The team presidents are selected by the students via popular vote. The rest of the teams are then picked by the presidents in a round-robin draft. The first year ends with a board meeting in April. The simulation is inactive over the summer break. After summer break, the simulation intensifies. The second board meeting is held after the second simulation year ends the third week in September. It was after this meeting that participants completed the first survey. The third year and final board meeting took place in mid October. Participants filled out the second group survey after the third board meeting.

The Management Game simulation presents an attractive hybrid between an experiment and surveying real top management teams. Like an experiment, the teams are evenly matched because of the round-robin draft style for the players and the similarity in terms of participants' age and work experience. In addition, all companies start from essentially the same place. Similar to real top management teams, the task assigned to teams is incredibly complex, and participants take it seriously. Management game has been Carnegie Mellon's flagship MBA course since the 1960s. Because of the complexity, realism, and competitive nature of game, the students are highly motivated and put tremendous effort into the course.

*Measures*

*Disagreement.* This was measured using task and relationship conflict items adapted from Jehn (1995), and disruption and process conflict items adapted from Jackson (2003). We assessed task-related disagreements with five items (e.g., "How frequently do members of your committee engage in debate about different opinions or ideas?"). We also assessed process-related disagreements with four items (e.g., "Members of your team often disagree about the best way to make decisions.").

*Information Sharing.* This was measured using four items on information sharing (e.g., "It is very easy for me to get information from other team members when I need it.").

*Cognitive Integration.* This was measured using seven items on cognitive integration (e.g., "Sometimes it is like my team "shares a brain.").

*Affective Integration.* This was measured using eleven items on affective integration (e.g., "I think highly of my team members.").

*Demographic Faultlines*. We measured faultlines using two different methods. First, we calculated faultlines scores based on faultline algorithm developed by Thatcher et al. (2003) and Bezrukova et al. (2003). This *Fau* measure calculates the percent of total variation in overall group characteristics accounted for by the strongest group split and a distance between two sets of averages. Second, we assessed group faultlines with three items (e.g., To what extent has your team split into subgroups?").

*Satisfaction.* Satisfaction was measured with three, five-point items that asked about team member's satisfaction with their team, their board, and their products (e.g., "Overall, I am satisfied working with this team.").

*Board ratings.* Each team's board of directors rated the team's performance on 12 dimensions (a seven-point scale ranging from unacceptable to outstanding). These ratings were discussed and agreed upon by all members of a board of directors, and counted toward student's grades.

## Results

At this point in time, the data have all been collected and are currently being analyzed.

Given that disagreements are multilevel phenomena, with observations at one level of analysis (individuals) nested within another level of analysis (groups), we will employ two-level hierarchical linear modeling (Bryk and Raudenbush, 1992; Hofmann, 1997). The basic two-level HLM model is depicted in equation form as follows:

Level 1: $$y_{ij} = \beta_{0j} + \beta_{1j}x_{1ij} + r_{ij} \quad (1)$$

Level 2: $$\beta_{0j} = \gamma_{00} + \gamma_{01}z_j + U_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{10} + U_{1j} \quad (3)$$

where $y_{ij}$ is an individual-level outcome measure for person *i* in group *j*, $x_{1ij}$ represents an individual-level independent variable, $\beta_{0j}$ and $\beta_{1j}$ are random coefficients representing a within-group intercept and a within-group slope, respectively, $r_{ij}$ is an individual-level error term and is assumed to be independent and normally distributed with a mean 0 and a variance of $\sigma^2$. $z_j$ represents a group-level variable, $\gamma_{00}$ and $\gamma_{10}$ are between-group intercepts, $\gamma_{01}$ is a between-group slope, $U_{0j,}$ and $U_{1j}$ are group-level error terms that represent the residual variance for each equation and are assumed to be normally distributed with mean 0 and variance in intercepts ($\tau_{00}$) and slopes ($\tau_{10}$).

We will run a sequence of models using the HLM 5.04 statistical package (Bryk et al., 1994). Each HLM analysis will be conducted in a hierarchical fashion that will include four steps. In the first step, we will estimate the null model to confirm whether there is a systematic within- and between-group variance in our dependent variable (e.g., satisfaction). In the second step, we will add individual-level controls and run a random coefficients regression model. In the third step, we will perform an intercept-as-outcomes regression model 1 and add group-level controls. In the fourth and fifth steps, we will run intercept-as-outcomes regression models to test our hypotheses predicting the main effects as well as mediating and moderating effects. To be continued!!!

## Discussion

To be continued!!!

**References**

Allen, V.L. & Levine, J.M. (1971). Social support and conformity: The role of independent assessment of reality. Journal of Experimental Social Psychology, 7, 48-58.

Amason, A. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for the top management teams. Academy of Management Journal, 39, 123-148.

Bezrukova, K., Jehn, K.A., & Zanutto, E. (2002). A Field Study of Group Faultlines, Team Identity Conflict, and Performance in Diverse Groups. Working paper. Wharton, University of Pennsylvania.

Bragg, B.W. & Allen, V. (1972). The role of the public and private support in reducing conformity. Psychonomic Science, 29, 81-82.

Bryk, A. & Raudenbush, S. W. (1992). Hierarchical Linear Models for Social and Behavioral Research: Applications and Data Analysis Methods. Newbury Park, CA: Sage.

Bryk, A., Raudenbush, S.W., Cheong, Y.F., & Congdon, R. (2000). HLM 5: Hierarchical Linear and Nonlinear Modeling. Scientific Software International, Inc.

Carnevale, P.J., Probst, T.M. (1998). Social values and social conflict in creative problem solving and categorization. Journal of Personality and Social Psychology, 74, 1300-1309.

Cronin, M.A. & Weingart, L.R. (2003). Conflict in diverse teams: The problem of perceptual gaps and the solution of cognitive and affective integration. Working Paper. Carnegie Mellon University.

Cummings, A., Zhou, J., & Oldham, G.R. (1993). Employee reactions to the physical work environment: The role of childhood residential attributes. Journal of Applied Social Psychology, 24, 2213-2238.

DeDreu, C.K.W. & Weingart, L.R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. Journal of Applied Psychology, 88, 741-749.

Gibson, C. & Vermeulen, F. (2003). A healthy divide: Subgroups as a stimulus for team learning behavior. Administrative Science Quarterly, 48, 202-239.

Hofmann, D. **(**1997). An overview of the logic and rationale of hierarchical linear models: Theoretical and methodological implications for organizational science. Journal of Management, 24, 623-641.

Jehn, K.A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. Administrative Science Quarterly, 40, 256-282.

Jehn, K.A. (1997). A qualitative analysis of conflict types and dimensions in organizational groups. Administrative Science Quarterly, 42, 520-557.

Jehn, K.A., Northcraft, G., & Neale, M. (1999). Why differences make a difference: A field study of diversity, conflict and performance in workgroups. Administrative Science Quarterly, 44, 741-763.

Kabanoff, B. (1991). Equity, equality, power and conflict. Academy of Management Review, 16, 416-441.

Kramer, R.M. (1991). Intergroup relations and organizational dilemmas: The role of categorization processes. In L.L. Cummings and B.M. Straw (eds.), Research in Organizational Behavior, 13, 191-227. Greenwich, Connecticut: JAI.

Lau, D. & Murnighan, J.K. (1998). Demographic diversity and faultlines: The compositional dynamics of organizational groups. Academy of Management Review, 23, 325-340.

Mohrman, S.A., Mohrman, A.M. Jr., Cohen, S.G. (1995). Chapter. Organizing knowledge work systems. Beyerlein, Michael (Ed.), Johnson, Douglas A. (Ed.), et al. Advances in interdisciplinary studies of work teams: Knowledge work in teams, Vol 2 (pp. 61-91). Los Angeles, CA.

Pelled, L.H. (1996). Demographic diversity, conflict, work group outcomes: An intervening process theory. Organization Science, 7, 615-631.

Pelled, L.H., Eisenhart, K.M., & Xin, K.R. (1999). Exploring the black box: An analysis of work group diversity, conflict and performance. Administrative Science Quarterly, 44, 1-28.

Phillips, KW. (2003). The effects of categorically based expectations on minority influence: The importance of congruence. Society for Personality and Social Psychology, 29, 3-13.

Phillips, K.W., Mannix, E.A., Neale, M.A., & Gruenfeld, D.H. (In Press). Diverse groups and information sharing: The effects of congruent ties. Journal of Experimental Social Psychology.

Schulz-Hardt, S., Jochims, M., & Frey, D. (2003). Productive conflict in group decision making. Genuine and contrived dissent as strategies to counteract biased information seeking. Organizational Behavior & Human Decision Process, 88, 563-586.

Tajfel, H. & Turner, J. (1986). The social identity theory of intergroup behavior. In S. Worchel (Ed.), Psychology of intergroup relations. Chicago: Nelson Hall.

Thatcher, S.M.B., Jehn, KA., & Zanutto, E. (2003). Cracks in diversity research: The effects of faultlines on conflict and performance. Group Decision and Negotiation, 12, 217-241.

Thornburg, T. (1991). Group size and member diversity influence on creative performance. Journal of Creative Behavior, 25, 324-333.

Tjosvold, D. (1997). Conflict within interdependence: Its value for productivity and individuality. DeDreu, Carsten K.W. (Ed), Van de Vliert, Evert (Ed). Using Conflict Organizations (pp. 23-37). Simon Fraser U, Burnaby, BC, Canada.

Wit, A.P. & Kerr, N.L. (2002). 'Me versus just us versus us all' Categorization and cooperation in nested social dilemmas. Journal of Personality and Social Psychology, 83, 616-637.

**Figure 1: Research Model**