The Polarization Predicament: Factors of Group Polarization on Decision-Making

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Group polarization is a well-documented phenomenon in social psychology, that refers to the tendency of group member's attitudes and decisions to shift towards more extremes of decision-making in comparison to decision-making made individually. For example, individuals who identify as Democrats/Republicans gather to discuss political issues, they may then become more extreme in their views after hearing other members' opinions and arguments that align with their own. This phenomenon can dramatically impact decision-making in groups and subsequently can lead to intensified biases and result in less-than-ideal results. Understanding the factors that contribute to group polarization and its effects on decision-making can allow us to strategize different ways to improve group decision quality and effectiveness across multiple domains, such as business, politics, and education.

In this literary review, we will overview what group polarization is and under what circumstances will create a tendency for the phenomenon to arise. From this overview, we will cover the causes and effects that it has on decision-making and discuss what the research shows for explanations as to why individuals engage in group polarization. By integrating findings from existing literature, this review aims to provide a comprehensive understanding of the current state of knowledge surrounding group polarization and the implications for decision-making.

Decision-Making and Risk Influence

Group decision-making is a collaborative process in which individuals come together to analyze a particular issue or situation and consider various alternative solutions. In doing so, groups are considered to make better decisions in comparison to individual decisions as they accumulate more knowledge and ideas to synthesize more accurate solutions. However, due to group polarization, individuals in groups tend to make risky choices. Individuals often engage in

risky behavior due to cognitive biases, leading one to overestimate the likelihood of positive outcomes while also underestimating the likelihood of negative outcomes (Kahneman & Tversky, 1979). Some factors that may affect risk-taking behaviors include the size of the group, age of the group, probability of winning, and rules of decision (Wang et al., 2019). The direction of group polarization is determined by the initial position of an individual member's choice, which can manifest in two opposing directions. When individuals in a group engage in risk-seeking behavior, group polarization tells us that this will result in the risky shift phenomenon, where one engages in even more risky behavior (Hou et al., 2022). Conversely, if the individuals are avoiding risk, other group members will become more cautious and thus result in a cautious shift. The perception of riskiness at the individual level additionally seems to be influenced by interactions with other group members. This dynamic can lead to various outcomes in group deliberations. During group deliberations, some decisions made by the group may appear more risky than the individual decisions made before group discussion, or group decisions may appear to be less risky than the individuals decisions before group decisions (Aloka, 2021). This shows the polarization that occurs as an individual may view the group's decision to be riskier compared to internal feelings. When individuals are working together in group settings, they adopt a riskier course of action in line with group decisions than they would when solving a problem individually and vice versa, adopt more cautious approaches when other group members focus on safer alternatives.

Risk Influence: Study

In a study by Yingying Hou, they tested how risk influenced group decision-making may polarize attitudes toward the positions held before in individual decision-making. The study took only female participants and randomly divided them into 19, three-person groups. The members

in each group were not acquainted with one other, with no prior experiences in any other decision-making experiments, and were not allowed to have any verbal or nonverbal communication prior to the experiment. The participants were brought in by their triad groups individually and sat in front of a laptop. The groups had a 3-minute rest phase before an individual decision task and another before moving to a group decision-making phase. They were then given a set of psychological assessments measuring, “group positive and negative emotion, group impulsiveness and group cohesiveness”(Hou et al., 2022). In the decision-making section, participants were shown a varying amount of cups with different amounts of money in each, indicating a safe or risky choice. The safe choice was a single cup that had 5 Chinese yuan (100% probability of getting the amount) and the risky choice had several cups that would either contain 10, 15, or 25 Chinese yuan (33% probability of getting the desired amount). If the individual's choice favored the risky condition, it would demonstrate a risk advantage situation. Participants received four trials for each combination and completed a total of 48 trials and were given an implicit association test regarding safe or risky options presented randomly on the left or right sides of the computer screen. Participants did not know the decision outcomes of other participants until they moved on to the group decision-making phase. The study found that in risk advantage situations, the mean of participant triads risk was larger than individual tasks($t(18) = 2.411$, $P = 0.027$, Cohen's $d = 1.136$). They also found that in the risk disadvantage situations, individual tasks had smaller ratings compared to the group indicating risk avoidance($t(18) = -5.099$, $P < 0.001$, Cohen's $d = 2.403$). The study demonstrates how risk assessment tends to be either less risky or cautious before group discussion and increased when the individuals move to group decisions.

Social Interactions

Another influence on group polarization and decision-making includes social interactions. Social Comparison Theory assumes that individuals are motivated to appraise their abilities and opinions, leading to a tendency to make comparisons to other people. (Aloka, 2021). These same mechanics can be seen in group polarization, affecting the thoughts and behaviors of individuals. Social comparison may explain this shift towards more extreme views as people rely heavily on comparative thinking that can change their thoughts, motivations, behaviors, and feelings (Mussweiler & Epstude, 2009). This comparative thinking is argued to be motivated by an individual's need to feel socially desirable by comparing their opinions to others in the group settings and adjusting them in the direction that other group members hold. It is theorized that two mechanisms impact group polarization through this comparative thinking, one-upmanship and pluralistic balance (Isenberg, 1986). The first mechanism, one-upmanship, refers to the tendency for one to try and compete with one another by shifting their positions toward the direction favored by the group. During group discussions, individuals are exposed to what group norms look like and how they differ from the individual's perspective, creating a disparity between the perception of superiority of another individual and how they would like to be seen. The individual's initial choices reveal a discrepancy between their current position and an ideal position, which they then try to resolve by shifting towards the ideal position, resulting in group polarization. The second mechanism of pluralistic balance refers to people's desire to find a compromise between their preferred position and the perceived position favored by other group members. In group discussions, this causes people to share their positions as compromises between what they prefer and what they perceive others prefer. So when one becomes aware that their initial assessment of the group's position was inaccurate, they may adjust their positions to align to better fit with the collective position (Sia, Tan, & Kwok-Kee, 2002).

Another social interaction factor contributing to group polarization is social presence. Social presence refers to the degree to which individuals form personal and deeper connections with one another in communication settings (Short et al. 1976). In settings of group decision-making when social presence is high, it encourages individuals to treat one another as human beings that have feelings instead of as objects. If social presence is low, it may cause a shift in the individual to follow self-interest instead of the group's interest. Social presence was also found to be a factor when it came to opinion change, for example, the lower the social presence, the more likely it was for opinion change to occur (Short et al. 1976). The salience of arguments in low social presence communication settings may also partly account for the tendency of individuals to be influenced by these arguments. Thus, to minimize the effects of group polarization, we should aim to uphold a higher social presence. This is important to understand when looking at forms of communication in group decisions today with technology. Many cues influence social presence, such as verbal, visual, and textual cues. When one receives cues, they can evoke cognitive interpretations and corresponding emotional states. Strong social cues tend to result in more other-focused, differentiated, and controlled behavior, while weak social cues may produce a sense of anonymity leading to self-centered and unregulated behavior (Sproull & Kiesler, 1986). With a lack of these cues in electronic communication where the cues are limited, social presence tends to be lower and in turn, increases group polarization (Sia, Tan, & Kwok-Kee, 2002). The role of social interactions in group polarization and decision-making is evident through factors such as social comparison, one-upmanship, pluralistic balance, and social presence. Maintaining high social presence and fostering positive social interactions can help mitigate the adverse effects of group polarization, to promote better decision-making outcomes.

Social Interactions Study

The study done by Tan Choon-Ling Si and the team studied the impact of anonymity on group polarization. The study aimed to see how computer-mediated communication(CMC) reduced social cues, leading to lower social presence, thus increasing group polarization. They took 200 senior information systems undergraduates from the same university and randomly assigned them to treatment groups. The participants engaged in a business-risk task where they played the role of a senior executive of a computer manufacturing company. They were asked to select the best plan from a list of schemes, that varied in risk, to increase the market share of their company. The subject would read the task for 10 minutes and then share what they thought was the best strategy with the rest of the group using CMC. Half of the participants were placed in the anonymity group, where their names were removed from the views of subjects to restrict inferences made from people and their positions. The session would be completed when the group came to the same consensus or after a maximum of four rounds of discussions. After the session concluded, participants were asked to give the original individual positions before group discussion for control and manipulation checks. The study found that under the anonymity condition, it yielded significantly greater choice shift and preference change ($t = 8.14$, $p < 0.02$, power = 0.77, effect size = 0.31). The study found that the "absence of visual cues in the dispersed CMC setting resulted in significantly stronger group polarization, possibly by lowering social presence" (Sia, Tan, & Kwok-Kee, 2002). In the second experiment, they also found that in a face-to-face CMC setting, the anonymous condition also produced significantly greater choice shift and preference change ($t = 5.11$, $p < 0.04$, power = 0.57, effect size = 0.22). They concluded that once again that this anonymity lowered social presence and increased group polarization. This study highlights the significant influence of anonymity and reduced social presence on group polarization. It emphasizes the need to consider the implications of

communication environments when seeking to manage group polarization and enhance decision-making outcomes.

Concluding Remarks

By understanding the interactions risk and social interactions have upon group polarization, we can understand better ways to engage in group decision-making. We know that an individual may shift towards extremes of decision-making due to the amount of perceived risk. Groups should engage in analyzing evidence supporting different viewpoints, and consider potential biases that might influence their judgments to accommodate for this tendency to shift towards more risky decisions. Emphasizing individual accountability can help prevent people from blindly conforming to group norms. We can also mediate individuals' shifting to riskier decisions by understanding the social interactions that occur. From the evidence of social presence of group deliberations, we know that a higher social presence can lead to less risky decision-making, and inclusion of all group members by seeing them for who they are can account for all member's perspectives to be seen and understood by other group members. To decrease group polarization, we also need to take into account communication environments and allow for social cues to be present to foster an environment that encourages a diversity of opinions. It is important to create an environment where individuals can feel comfortable expressing differing opinions and perspectives. By implementing these strategies, we can mitigate the effects of group polarization and promote more effective, well-rounded decision-making processes within groups.

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