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Group diversity and decision quality: Amplification and attenuation of the framing effect

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Abstract

Do groups make better judgments and decisions than individuals? We tested the hypothesis that the advantage of groups over individuals in decision-making depends on the group composition. Our study used susceptibility to the framing effect as a measure of decision quality. Individuals were assigned to one of two perspectives on a choice problem. The individuals were asked to indicate their individual preference between a risky option and a risk-free option. Next, they were asked to consider the same (or a related) choice problem as a group. Homogeneous groups were composed of similarly framed individuals, while the heterogeneous ones were composed of differently framed individuals. In comparison to individual preferences, the homogeneous groups' preferences were polarized, and thus the framing effect was amplified; in contrast, the heterogeneous groups' preferences converged, and thus the framing effect was reduced to zero. The findings are discussed with regard to group polarization, the effects of heterogeneity on group performance, and the Delphi forecasting method.

Keywords: Homogeneous vs heterogeneous groups; Risk attitudes; Group polarization; Delphi method

1. Introduction

The study of group decision processes is of great interest for both theoretical and practical reasons. First, it provides new vantage points for looking into the mind of the individual and for improving our understanding of the origins of judgment and choice biases (Bornstein & Yaniv, 1998; Kerr & Tindale, 2004). Second, it sheds light on the mode of operation of expert governmental panels, university committees, managerial business teams, and other groups which are charged with the mission of forecasting social, economic and environmental changes, and shaping the policies of their organizations in response.

1.1. Group composition and diversity

The goal of the present research was to investigate the effects of group composition on the quality of group decisions. The effects of group diversity have been of great interest in organizational research on the performance of work teams, as well as in the experimental study of group processes and outcomes

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in lab settings. Mannix and Neale (2005) reviewed the literature on the advantages and disadvantages of diversity in teams. Their review offers both favorable and unfavorable views of the role of diversity. On the negative side, diversity highlights members' social identities and social divisions, thereby increasing the stereotyping of out-group members. Overall, such processes tend to hurt the group performance. It is important to note, though, that the evidence for the unfavorable effects of diversity comes primarily from studies involving work teams in organizational settings, where members differ in both demographic factors (chiefly gender, race, and age) and social factors (such as seniority, tenure, and educational background).

Favorable views of diversity tend to come from information-processing approaches to the study of group performance (Mannix & Neale, 2005). Such studies tend to involve ad-hoc groups in experimental settings (making their findings more relevant to the present study), and find that diverse teams are especially appropriate for tasks involving innovation and the exploration of choices and new opportunities (e.g. Sommers, 2006). Such tasks benefit from the multiplicity of sources of information, heterogeneous skills, and divergent perspectives. Diverse perspectives sometimes create disagreement among group members and therefore reduce members' confidence, yet disagreement is often associated with improved judgmental accuracy (e.g. Sniezek, 1992).

1.2. The framing paradigm

In our study we used the susceptibility to framing effects as an index of the quality of group decisions. The framing effect refers here to the phenomenon that seemingly superficial changes in the description of the choices can have a large effect on behavior. In the classic demonstration of the effect on risky choice (Kahneman & Tversky, 1984), a decision problem is presented along with two choice options (one risk-free and one risky), and the participants are asked to select the more attractive of the two. A standard finding is that individuals prefer the risk-free option (over the risky one) significantly more often when the options are framed in positive (gain) terms than when the options are framed in negative (loss) terms. According to Kahneman and Tversky, this description-dependent preference for the risky option (framing effect) violates the normative principle of description invariance, whereby the rational choice ought to remain invariant under superficial changes to the descriptions of the options.

Earlier studies on the susceptibility of groups to framing effects have yielded varied results. Neale, Bazerman, Northcraft, and Alperson (1986) examined risky-choice framing effects among individuals and groups. They obtained the typical framing effect for individual decisions, but a *reduced* framing effect in group decisions. Paese, Bieser, and Tubbs (1993) also examined risky-choice framing effects among individuals and groups. They also found a framing effect at the individual level, but found an *increased* framing effect at the (homogeneous) group level, on only two (of four) decision problems. Finally, a recent study by Milch, Weber, Appelt, Handgraaf, and Krantz (2009) found a framing effect among individuals, but did not find evidence for either a reduced or an increased framing effect in group choice, compared to individual choice.

We used the framing paradigm to investigate the effects of group composition on performance. This research paradigm is akin, but not identical, to ones used in the past (Milch et al., 2009; Neale et al., 1986; Paese et al., 1993; Tindale, Sheffey, & Scott, 1993). With this paradigm, individuals are first asked to indicate their choices between risk-free and risky options, then they are convened and asked to reach a decision as a group. Two kinds of groups are created. Homogeneous groups are composed entirely of members who had been assigned to the same framing condition of the decision problem, while heterogeneous groups are composed of members who had been assigned different framings of the problem at the individual stage. At the group level decision, each group is given only one frame for consideration (details below).

1.3. The present hypotheses

Since our study engaged ad hoc groups in an experimental task, we hypothesized, in line with the review by Mannix and Neale (2005), that higher levels of diversity will have beneficial effects on the performance. In what follows, we focus on the psychological mechanisms that underlie our