Chapter 4

Information Sharing and Processing in Computer-Mediated Interactions

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ABSTRACT
This chapter will examine the effects of internet technologies on the collective information sampling (CIS) bias. The CIS bias is the tendency for task groups to favor the introduction, discussion, and use of shared or commonly known information during group discussion, rather than utilizing unshared information that is uniquely known by individual group members. The oversampling of shared information may lead groups to make suboptimal decisions when the content of their unshared information is critical for solving the task. The inherent structure and socially liberating effects of computer-mediated communication (CMC) may offer some solutions for reducing the CIS bias, and thereby increase the decision quality of electronic task groups.

INTRODUCTION

Groups are commonly called upon to make decisions, because collectively their individual members have access to more task relevant information than any one person. Based on this notion, groups should make better decisions than the average individual group member due to the variety of insights and information that each person brings to discussion. For instance, classic research by Shaw (1932) found that groups vastly outperformed individual participants across a series of complex tasks. Not only did groups make fewer mistakes during their tasks, they were better at error detection and self-correction than were individuals.

Typically decision-making groups have access to two types of task relevant information; items that are shared (common) are known to all group members and unshared (unique) items that are uniquely known by only one team member. Optimal group performance is based on the premise that individual members will in fact share their unique insights with the group, thus helping teams to make more informed decisions (Larson
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& Christensen, 1993; Steiner, 1972). For example, organizations will often delegate hiring decisions to committees instead of leaving the decision up to one individual. If committee members are provided with the opportunity to interact with job candidates one-on-one, then each member will learn unique items of information about each of the potential hires that are not known by the other team members. During group discussion, if the team members pool all of the information that they learned about the candidates during the interview process, both unique and common (e.g. resume items), then the group as a whole should be able to make a more informed hiring decision than any of the individual members.

Prior research has demonstrated that the above scenario is more likely to be the exception rather than the rule. Stasser and Titus (1985) discovered that groups were poor at exchanging unique information during group discussion, instead choosing to focus on shared information that was known to all group members. This biased information processing negates many of the potential benefits of group collaboration and decision-making. By limiting their discussion to information that is commonly held by all group members, discussants don’t fully weight the merits of their options and by doing so, increase the likelihood that they will make a poor decision. This biased sampling process is especially damaging when the task relevant information is unequally distributed among the group members, as is the case with most group decision tasks.

The goal of this chapter is to examine the intra-group and environmental processes that contribute to the biased sampling of shared and unshared information during group discussions, as well as the impact of this unbalanced information exchange on decision-making. First, we will discuss factors that affect collective information sharing in traditional face-to-face (FTF) groups. Next, we will focus on how the structure and properties associated with computer-mediated communication (CMC) may serve to facilitate information sharing and potentially improve collective group performance. Lastly, we will examine several interactionist and integrative models that strive to explain some of the conflicting findings of past research in terms of information sharing.

Collective Information Sharing

Research on information sharing in groups has typically utilized a hidden profile paradigm to examine the processing of shared and unshared items during decision making. A hidden profile is created by systematically varying shared and unique information among group members so that the optimal choice is initially obfuscated during pre-discussion analysis. Returning to our hiring example, if a three-person committee discusses all of the shared and unique information about two potential job candidates and realizes that candidate X has seven positive traits and candidate Y has four positive traits, and they have the same number of equally weighted negative and neutral qualities, then X would be the optimal choice. However, if most of the positive information regarding candidate X is discovered during one-on-one interviews (i.e. unique), and most of the positive information regarding candidate Y is shared information (e.g. contained in his/her resume’), then this would result in a hidden profile. Candidate X’s superior status will only be discovered if the group brings up all of their unshared knowledge during their discussion of the candidates.

Figure 1 illustrates the above scenario, excluding the neutral and negative items. A hidden profile is created initially if the committee notes four of candidate Y’s positive traits but only one of candidate X’s positive traits from their initial resumes. In other words, candidate Y looks very good on paper and candidate X needs to brush up on his/her resume’ skills. If however, during the one-on-one interview process, each of the three committee members learns two more notable-
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