Understanding the Impact of GSS: The Role of Anonymity and Culture

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ANONYMITY AND GROUP PERFORMANCE

Managers spend a considerable part of their work in meetings, participating in group decisions. Group work, however, is often inefficient and unproductive, suffering from a number of process losses. Inhibition and evaluation apprehension are among the most important problems that are known to hamper the active participation of group members. By allowing anonymous communications, group support systems (GSS) are expected to reduce inhibition and evaluation apprehension. Anonymity is believed to create an environment that improves participation, communication and the objectivity of evaluation of ideas, enhancing in this way the productivity of groups and their decision-making process. However, empirical evidence about the effects of anonymity in GSS is at best inconclusive. Actually, some studies, e.g., George et al. (1990), found that anonymity had no effects on inhibition, group communications and group performance. It is believed that these inconclusive results can be attributed to the fact that the effects of anonymity might depend on some contextual and group factors such as the degree of evaluation apprehension and conformance pressures of group members (Pinsonneault & Heppel, 1998).

ANONYMITY AND CULTURE

With globalization, the cultural diversity of groups is growing significantly. It is therefore important to understand how groups from different cultures are affected by GSS. In this study, we examine the cross-cultural effects of one particular feature of GSS, anonymity. Specifically, we investigate whether anonymity of GSS-supported meetings affects in different ways the performance of groups from North American (Canadian) and Chinese (Hong Kong) cultures. Groups from different cultures are expected to have different levels of evaluation apprehension and conformance pressures and are hence expected to react differently to anonymity.

A review of GSS and social psychology literature, and Hofstede's (1980) model of cultural differentiation formed the basis of the theory used to investigate the effects of culture on anonymous GSS meetings. According to the literature, there will be a different effect of anonymity on culturally different GSS groups working on preference tasks.

Public self-awareness, involving accountability and awareness of ones own appearance in a group (Pinsonneault and Heppel 1998), explains how individuals from certain backgrounds and cultures can be more affected by the evaluation of others. When public self-awareness is raised, concerns with social standards and conformity are also increased, and can lead to inhibition when participating during group meetings. Likewise, when punishment is not expected, individuals can become disinhibited (Pinsonneault and Heppel 1998) leading to higher participation. Therefore, when public self-awareness is high, a correspondingly high level of anonymity will be required in order to liberate people from social evaluation. That is, when people fear social evaluation, disinhibition will occur only when they feel fully protected from it by anonymity.

Thus, the Hong Kong and Canadian group's reaction to anonymity will depend on the degree of evaluation apprehension experienced by participants in the group interaction. The participants of groups that have a culture with a tendency towards high power distance, uncertainty avoidance, and collectivism will experience high public self-awareness in non-anonymous GSS sessions during preference tasks, which will normally be associated with evaluation apprehension.

The Hong Kong Chinese culture is rooted in the social ethic advocated by Confucius (Oh, 1991). Unlike the North American culture, which promotes the importance of individuals (rather than the groups), Confucianism promotes status hierarchies, loyalty to people, norms of conformance, mutual obligation and reciprocity. In the Hong Kong Chinese culture, group interactions stress harmony, conformance and reciprocal respect, rather than openness and spontaneity. In this case, the participants will be inhibited from submitting comments that deviate from the norm (uncertainty avoidance), are against their superior's ideas (power distance), or may break harmony with the group (collectivism). Anonymity will enable the participant to submit ideas and comments without being identified which will reduce the perceived threat of punishment. Therefore, as Hong Kong's culture usually exhibits these three influences, the Hong Kong group will benefit from anonymity as it causes disinhibition in the GSS group, leading to improved performance.

However, as the Canadian group's culture allows them to deviate from the norm, and there will be no significant level of inhibition in the Canadian GSS group, anonymity will not significantly induce disinhibition, and there will be no positive effect on performance or perceived participation. Therefore Hong Kong's groups will respond more positively to anonymity than the Canadian group

The theory outlined above regarding culture's effects on GSS groups leads us to hypothesize:

H1: Anonymity will have a higher significant positive effect for Hong Kong groups than Canadian groups in terms of number of ideas generated.

H2: Anonymity will have a higher significant positive effect for Hong Kong groups than Canadian groups in terms of quality of ideas

H3: Anonymity will have a higher significant positive effect for Hong Kong groups than Canadian groups in terms of perceived level of participation

CROSS-CULTURAL FIELD STUDY

A 2 X 2 factorial design was used to test the hypotheses of the present study. As depicted in Figure 1, the two independent variables were *anonymity* and *culture*, resulting in four treatment conditions (See Figure 1). The initial assignment of subjects to groups within their own culture was randomly determined.

In all, 144 subjects participated. The Canadian sample consisted of 72 subjects who were managers on a post-graduate course in information systems. The Hong Kong sample also consisted of 72 subjects who were managers on an identical post-graduate course in Hong Kong. In each location, 18 groups of 4 individuals each were given two business cases to analyze. All of the subjects performed under non-anonymous conditions for the first task and anonymously for the second task (see Figure 1).

The respective parts of the experiment took place in identical group decision support system laboratories at each site (Hong Kong and Canada), with tables arranged in a U-shaped pattern, a computer terminal in front of each chair, and a projection facility at the front of the tables that constituted a public viewing screen. Each group mem-

Figure 1: Research methodology

Cultural background

	Canada	Hong Kong
Anonymous		
(Anonymity)		
Identified		

ber first was asked to read a background statement for the Case Analysis Tasks and to submit ideas and comments, based on their personal judgment. They then were given training in the use of the GSS. Group members then worked together using the GSS to analyze the first business case with submitted comments in anonymous conditions, and then the second case submitting comments in non-anonymous conditions. The instructions, facilitators, procedure, and conditions were identical for each culture. At the end of each analysis, each group member filled out a post-meeting questionnaire to measure the perceived level of participation during the group task. Thus, group performance was measured according to the number of ideas generated, idea quality, and perceived level of participation.

RESULTS AND LESSONS LEARNED

The results of the field studies verified our hypothesis. Anonymity was found to have more significant positive effects for Hong Kong groups. With anonymity, the performance of the Hong Kong group improved significantly in terms of number of contributions, quality of contributions and perceived level of participation. No significant differences in the performance measures were found for the Canadian groups, except for the quality of contributions, which deteriorated with anonymity. A qualitative analysis of this negative effect revealed as possible causes social loafing and lack of accountability.

Our findings show clearly that culture is an important factor affecting anonymity in the GSS context. As we move into the world of virtual organizations and electronic commerce, the use of GSS by groups of different cultures becomes an irreversible trend. For practitioners or user of GSS, groupware applications, or other electronic communication systems, the implications are important. We simply cannot think of anonymity as a concept that is good or bad in itself. The use of anonymity should depend on the culture in which it is applied. For example, it is probably not a good idea to use anonymity in some cases where the culture of the group does not emphasize status hierarchies, conformance, mutual obligation and reciprocity. In these situations, anonymity could even lead to negative outcomes such as social loafing due to the reduction in motivation and effort that occurs when individuals work in anonymous groups. Conversely, it may be beneficial to use anonymity for GSS-supported groups with cultures involving higher levels of conformance pressure and evaluation apprehension.

In a broader sense, GSS and groupware designers and developers should pay special attention to the implementation of anonymity features. For example, they could make it easier for users to turn these features on and off to accommodate the culture of the groups using the systems. Finally, facilitators should study the culture of the group using the technology before blindly using anonymity to generate or evaluate ideas.

FURTHER RESEARCH

The study of GSS requires a clear framework to enable rigorous research to be carried out in this area. Therefore, the model used in this study may be useful to researchers who wish to conduct studies that examine the effects of culture on GSS.

Considering the lack of research on the effects of culture on GSS, further research in this field would appear to be worthwhile. Research may also be conducted on other interactions associated with cultures using the anonymous function of GSS. Future work may try to isolate the relative impact of culture on different tasks and in different situations.

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