Learning about Team Members' Preferences: Computer-Supported Preference Awareness in the Negotiation Preparation of Teams

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Abstract: Although members of a negotiation team form one joint negotiation party, they often have different preferences within the team. This impairs the team's negotiation performance. Learning about the team members' preferences in order to align them to accurate joint priorities for the negotiation therefore becomes an important part of the negotiation preparation. This experimental study examines, whether computer-supported awareness about the team members' preferences (i.e. Preference Awareness) helps to foster the knowledge about these preferences within the team and thereby leads to accurate team priorities. 150 participants were randomly assigned to teams of three members with different preferences in either a condition with or without Preference Awareness. They had to prepare jointly for an upcoming negotiation via audio conference. In the condition with Preference Awareness, the priorities, which were stated by the team members afterwards, covered the preferences of all team members significantly better than in the condition without awareness.

Keywords: preference awareness, negotiation teams, negotiation preparation, negotiation performance, computer-supported learning

Introduction

Conflicts between groups are widespread. They do not only occur in many situations of everyday life, but also between different organizations, (working-) teams, school classes, political parties and nations (van Kleef, Steinel & Homan, 2012). One of the most common and constructive ways to solve such conflicts is through negotiation. Especially when the situation is very complex and complicated, negotiation teams are used to solve the issues (Brett, Behfar & Friedman 2009). The reason for that is the expected broader range of resources, skills, knowledge and information teams can contribute compared to individuals (Mesmer-Magnus & DeChurch, 2009; van Ginkel, 2007).

Yet, studies that compare the negotiation performances of negotiation teams with those of solo negotiators show no general superiority of teams (Cronin & Weingart, 2007; Morgan & Tindale, 2002; Thompson et al., 1996). The use of negotiation teams is rather associated with particular difficulties due to a higher complexity when several individuals are supposed to cooperate as one negotiation party (Lewicki, Saunders & Barry, 2007).

Behfar, Friedman and Brett (2008) investigated such difficulties by analyzing organizational negotiation teams in the work context. The main problem which was stated out in this analysis lies in the team itself: Although the members of a negotiation team form one joint negotiation party, they often have different preferences for an upcoming negotiation (Behfar et al., 2008). If these aren't exchanged and aligned by the team members *prior* to the negotiation in order to agree on joint priorities, they achieve poorer negotiation results for their team, especially when there is integrative potential (Halevy, 2008). Integrative potential is given, when there are negotiation issues which are differently important for the negotiation parties. This is the case in most negotiation situations (Swaab, Galinsky, Medvec & Diermeier, 2012). Then mutually profitable trade-offs are possible between the negotiation parties. This means, that concessions are made on negotiation issues of low priority for the own party, but high priority for the other party, to get in return concessions on issues of high priority for the own, but low priority for the other party (e.g. Ten Velden, Beersma & De Dreu, 2007).

To be able to make such mutually profitable trade-offs with the other negotiation party in favor of the whole team, the team members need to have knowledge about all team members' preferences and have to agree on what the joint team priorities are. Importantly, this alignment process has to take place prior to the negotiation. The negotiation preparation of the team therefore becomes an essential part of the negotiation process.

But teams often insufficiently prepare for an upcoming negotiation (Brett et al., 2009). Furthermore, there are various collaboration barriers which hinder the proper exchange and alignment of team members'

preferences within the team. A number of findings show, that members of teams discuss more about shared information and common preferences during team discussions, whereas unique information or preferences are often neglected (Bowman & Wittenbaum, 2012; Stasser & Titus, 1985). Additionally, complex issues often require the participation of experts from different fields, who are often hindered to meet in person but have to prepare computer-supported in a virtual environment, for example via the telecommunication application software Skype. In such virtual contexts, there is less contextual information than in face-to-face situations and also the social presence is reduced (Martinez-Moreno, Zornoza, Gonzalez-Navarro & Thompson, 2012). This makes it even more difficult to develop a model about the knowledge of others (cf. Engelmann & Hesse, 2010) or about which information and preference backgrounds the other team members have.

Solution approach: Preference Awareness

Hints for a solution to these problems are provided by the Knowledge and Information Awareness approach (Keller, Tergan & Coffey, 2006). Findings show, that group members reach better solutions in computer-supported collaborative problem solving tasks when they are informed about the knowledge and its underlying information of their collaborators (i.e. Knowledge and Information Awareness; Engelmann, Tergan & Hesse, 2010). Additionally the exchange of unshared information is fostered (Engelmann & Hesse, 2011). Based on these findings, the concept of *Preference Awareness* was developed by the first author, defined as being informed about the team members' preferences for an upcoming negotiation. It is expected, that computer-supported Preference Awareness during the negotiation preparation fosters the exchange and alignment of preferences within negotiation teams and thereby leads to a better knowledge about the joint team priorities among the team members.

Method

To examine the postulated effects of Preference Awareness, an experimental study with university students was conducted. One-hundred-fifty participants (119 female, 31 male, M_{age} = 23.33, SD_{age} = 2.97, age range: 18–32) were randomly assigned to a condition with Preference Awareness or a condition without Awareness and then to teams of three members, representing a water-supply corporation. This resulted in 50 teams, with 25 teams per condition.

In this economic scenario, the team members had to prepare jointly for a negotiation with another corporation about the distribution of ten building grounds for water-supply companies in Africa. The negotiation preparation took place computer-supported via audio-conference in three different rooms. Within the team, each team member took over the role of one manager of the corporation with individual preferences for nine different attributes of the building grounds (e.g. water quality, transport possibilities, cultural environment). The values for the preferences ranged from 0 to 100 and were presented in a spreadsheet, graphically supported by different sized bar charts. In the condition with computer-supported Preference Awareness, each member could see the preferences of all team members in the spreadsheet during the audio conference. In contrast, in the condition without awareness, each team member could only see his/her own preferences. So the Preference Awareness-Tool enabled the team members to have direct access to all team members' preferences on the computer screen in a structured way during the audio conference. For better discrimination, different colors were used for the bar charts of each team member. The team members were told that the time to prepare for the upcoming negotiation was limited to 20 minutes and that the presented information would only be available during this audio conference, but no further instructions were given. So it was up to them if and how they used the available information offered by the Preference Awareness on the computer screen during their discussion.

When the audio conference was finished, all team members were individually asked what priorities they would pursue for their team, if they were selected to represent it in the upcoming negotiation. Therefore each team member was asked to rank the nine attributes of the building grounds by importance. In order to represent the whole team, the amount of knowledge about the joint team priorities gained during the audio-conference was crucial. The accurate team priorities resulted, when all team members' preferences were considered equally. So the perfect ranking for the joint team priorities could be achieved by averaging the individual preference values of all team members for each of the nine attributes. It was expected that Preference Awareness during the negotiation preparation would help the team members to learn about the preferences within the team and thereby would lead to priorities for the negotiation, which cover all team members' preferences to a higher extent.

Additionally it was also tested, how well the single team members could judge the importance of five building grounds for the whole team via ranking. The purpose of this task was to test, if the knowledge about team members' preferences could also be transferred to the judgment of concrete issues for the negotiation. For each building ground it was therefore presented how well it covers the nine attributes by stars from one to ten. In

order to rank the building grounds accurately, one had to consider the accurate team priorities. The more stars a building ground had in attributes which were important for the whole negotiation team, the more valuable it was. The quality of the ranking of the building grounds serves as an indicator of whether the team members knew which profitable trade-offs could be made for the whole team. This is an important requirement for achieving good negotiation results (e.g. Ten Velden, Beersma & De Dreu, 2007). Therefore the task is a direct indicator for the expected negotiation performance.

Findings

To analyze the data statistically, it was aggregated on group-level because of the interdependence of the team members within a team.

First it was analyzed, if Preference Awareness fosters the knowledge about the accurate joint priorities within the team. Therefore the deviation of the rankings stated by the team members from the accurate ranking based on the averaged preferences was calculated and summed up for each team. The priority rankings of team members with computer-supported Preference Awareness during the negotiation preparation deviated significantly less from the accurate team priorities (M = 12.48, SD = 7.30) than the rankings of team members without awareness (M = 22.64, SD =11.82, $t(48)$ = -3.657, p = .001). So the hypothesis, that Preference Awareness during the negotiation preparation fosters the knowledge about the accurate joint priorities within the team, can be confirmed.

Furthermore the rankings of the building grounds were analyzed in order to find out whether the team members knew which profitable trade-offs could be made for the whole team. Therefore it was calculated, how much the rankings of the members of each team for the five building grounds deviated from the accurate ranking based on the accurate team priorities. The rankings of team members with computer-supported Preference Awareness during the negotiation preparation deviated significantly less from the accurate ranking (M = 7.36, SD = 5.47) than the rankings of team members without Awareness (M = 12.48, SD = 8.65, $t(48)$ = -2.502, p = .016). So members of teams with Preference Awareness during the negotiation preparation were better able to judge the importance of the different negotiation issues for the team accurately in a transfer task. The findings are illustrated in figure 1.

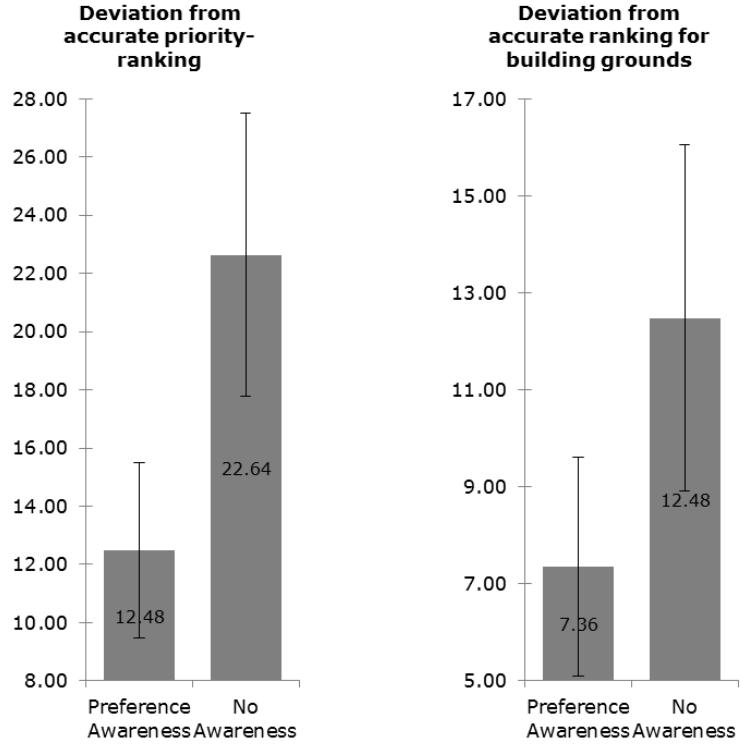

Figure 1. Deviations from accurate priority ranking (left) and accurate ranking for the building grounds (right) on team-level with 95% confidence interval for the experimental condition with Preference Awareness and the control condition without awareness.

Conclusions and implications

The results of this experimental study show that computer-supported Preference Awareness not only fosters the knowledge about the accurate joint priorities within negotiation teams. A further transfer task showed that it also enables the team members to judge the importance of the different negotiation issues for the team accurately. This is an important indicator for the expected negotiation performance: the team members do not only have to know the priorities of the whole team, but also need to be able to transfer this knowledge to an accurate judgment of the negotiation issues. To know the importance of each negotiation issue for the team is crucial in order to act as a unit and claim the demands of the whole team during the negotiation. It is furthermore a necessary requirement for the ability of the team members to know which profitable trade-offs could be made with the other negotiation party in favor of the *whole* team. Otherwise trade-offs are made, which are not beneficial for the team. This impairs the negotiation performance and consequently the negotiation result.

So it can be concluded, that Preference Awareness is a very promising approach to optimize the negotiation preparation of teams, especially when the team cannot meet in person but prepares computer-supported. In this experiment, the concept of Preference Awareness was tested in an economic scenario with a student sample. However, due to the promising results, it is highly recommended to implement this Preference Awareness-Tool in the negotiation preparation of real organizational teams. But this approach also has the potential to be extended to other collaborative situations in which the awareness about the group members' individual preferences could be useful, for example in order to get to a team decision. It could also be very valuable for a learning group in order to help its members to agree on joint learning contents and goals. Further studies should therefore investigate the implementation of Preference Awareness in more settings.

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