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# Effects of Consensus Information and Task Demonstrability on Preference-Consistent Information Evaluation and Decision Quality in Group Decision Making

Tobias Rothmund

University of Koblenz-Landau

Andreas Mojzisch and Stefan Schulz-Hardt

Georg-August-University of Goettingen

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Address for correspondence:

Dipl. Psych. Tobias Rothmund

Department of Psychology

University of Koblenz-Landau

Fortstr. 7, 76829 Landau, Germany

Phone: +49 / 6341 / 28031304

E-mail: rothmund@uni-landau.de

## Abstract

Groups often fail to solve hidden profiles even when all information is exchanged. This is partly due to biased evaluation of information. We examined the effects of consensus information and task demonstrability on preference-consistent information evaluation and decision quality. The results showed that the evaluation of unshared but not shared information was moderated by consensus information and task demonstrability. For unshared information, majority members exhibited a higher evaluation bias favoring preference-consistent information than minority members. Task demonstrability reduced the evaluation bias only when group members received no information about the other members' preferences. Finally, majority members were less likely to solve the hidden profile than minority members, and this was partially mediated by the evaluation bias favoring preference-consistent unshared information.

# Effects of Consensus Information and Task Demonstrability on Preference-Consistent Information Evaluation and Decision Quality in Group Information Pooling

Hidden profiles are group decision tasks in which a correct choice alternative exists, but no group member can detect this alternative based on his or her individual information set prior to the discussion (Stasser, 1988). This is due to the distribution of unshared information across group members. In a hidden profile, unshared and shared information point to different decisions, and the alternative implied by the unshared information is the correct one (relative to the entire information set available to the group). Hence, groups can only detect the correct decision by pooling the unshared information. Although hidden profiles are prototypical tasks in which groups can outperform individual decision-makers, research has shown that groups frequently fail to solve hidden profiles (for reviews, see Mojzisch & Schulz-Hardt, 2006; Stasser & Birchmeier, 2003).

Two group-level processes have been identified that account for this failure: First, groups fail to exchange the critical unshared information during discussion (Stasser & Titus, 1985). Second, even if group members discuss sufficient unshared information, they do not give much weight to what is discussed but focus rather on negotiating the weighting of their prediscussion preferences (Gigone & Hastie, 1993).

*Preference-consistent evaluation of information during group information pooling*

Recent evidence suggests that group-level processes do not fully account for the failure of groups to solve hidden profiles. Even if all information is discussed, the solution of hidden profiles is hampered by the group members' tendency to stick to their suboptimal preferences (Faulmüller, Kerschreiter, Mojzisch, & Schulz-Hardt, 2010; Greitemeyer & Schulz-Hardt, 2003). This tendency is due to biased evaluation of information. In a hidden-profile, the critical unshared information (which is required to be exchanged in order to solve

a hidden profile) is typically inconsistent with the group members' initial preferences. Since preference-consistent information is judged to be more important and compelling than preference-inconsistent information, group members individually tend to stick to their suboptimal preferences and, hence, fail to solve the hidden profile in the group. Therefore, even if all unshared pieces of information are exchanged during discussion, preference-consistent evaluation of information fosters the maintenance of the initial incorrect preference and hence hampers the solution of a hidden profile.

In the experiments by Greitemeyer and Schulz-Hardt (2003), participants first received information about three alternatives and were asked to indicate their preference. The information was either representative of the entire information set (manifest profile) or not representative (hidden profile). Next, participants received a transcript of a fictitious discussion, containing full information about the alternatives. Participants had to reach a final decision after having studied the transcript. For each item of information, participants had to rate its importance, credibility, and valence. As predicted, most participants failed to solve the hidden profile. Preference-consistent information was evaluated more favorably than preference-inconsistent information (both in the hidden profile and in the manifest profile condition), and this evaluation bias mediated the tendency of individuals to stick to their initial incorrect preferences. Thus, preference-consistent information evaluation works against the solution of hidden profiles even if all information is exchanged.

An important lesson that can be learned from this result is that in order to help groups to solve hidden profiles we need to know which variables moderate preference-consistent evaluation of information during group decision-making. Over the last two decades, many studies have focused on the question which variables moderate the *exchange* of information. In contrast, the question which variables moderate the *evaluation* of the information

exchanged has been largely neglected. Therefore, the primary aim of the present study was to investigate this issue.

*Consensus information and the Consensus implies Correctness Heuristic*

Previous research has found that the distribution of pre-discussion preferences has a strong impact on information exchange and group decision-making (e.g. Brodbeck, Kerschreiter, Mojzisch, Frey, & Schulz-Hardt, 2002; Hollingshead, 1996; Mojzisch & Schulz-Hardt, 2010; Scholten, Van Knippenberg, Nijstad, & De Dreu, 2007; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006). So far, however, we do not know whether consensus information (i.e., information about the extent to which the other group members share one's decision preference) also influences the *evaluation* of the information exchanged during discussion. But why should consensus information affect preference-consistent evaluation of information?

According to research by Chaiken and Stangor (1987), individuals follow a *consensus implies correctness heuristic* in decision making. This heuristic can be summarized as follows: If many people have come to prefer the same alternative, it is likely to be the better one. Hence, when people learn that their fellow group members have come to the same conclusion (majority feedback) this should make them more convinced about the correctness of their choice. Since confidence in the correctness of one's choice has been found to increase preference-consistent processing of information (Brannon, Tagler, & Eagly, 2007; Schulz-Hardt, Frey, Lüthgens, & Moscovici, 2000), majority feedback should increase preference-consistent evaluation of information. In other words, majority members should exhibit a higher evaluation bias favoring preference-consistent information than minority members.

Moreover, we assume that, in general, consensus information has a stronger effect on the evaluation of unshared information than on the evaluation of shared information. Since shared information, by definition, is evaluated before individuals learn about their fellows

group members' preferences, whereas most of the unshared items are encountered for the first time during the discussion, it is plausible that consensus information has less impact on the evaluation of shared information than on the evaluation of unshared information.

So far, only two studies have tested whether consensus information affects group members' biased evaluation of information, but both studies have important methodological shortcomings. The first study (Greitemeyer & Schulz-Hardt, 2003) found evidence for the impact of biased evaluation of information on decision quality, but did not find any effect of consensus information on biased evaluation of information. However, the failure to find any effect of consensus information may have been due to the fact that participants were not led to believe that they would interact with real fellow group members. Instead, participants received a transcript of a fictitious discussion, with fictitious group members as protagonists. The second study (Van Swol, 2007) employed face-to-face interacting groups and found that minority members rated preference-inconsistent information as more important than majority members did. However, this study did not control for which items of information were pooled during discussion, nor did it examine the impact of consensus information on decision quality. Therefore, it was not possible to test whether the impact of consensus information on the solution of hidden profiles is at least partially mediated by preference-consistent evaluation of information.

Summing up, our first hypothesis is that consensus information has a stronger effect on the evaluation of unshared information than on the evaluation of shared information. Second, we hypothesize that majority members exhibit a higher evaluation bias favoring preference-consistent unshared information than minority members. Our third hypothesis is that majority members will be less likely to solve hidden profiles, a tendency which is mediated by biased evaluation favoring preference-consistent unshared information.

*Task Demonstrability*

According to Laughlin (1980), problem solving and decision-making tasks can be ordered on a continuum anchored by intellective and judgmental tasks. Intellective tasks are "problems or decisions for which there exists a demonstrably correct answer within a verbal or mathematical conceptual system", whereas judgmental tasks are "evaluative, behavioral, or aesthetic judgments for which there does not exist a demonstrably correct answer" (Laughlin & Ellis, 1986, p. 177). In the case of intellective tasks the criterion of successful performance is finding the correct answer. In contrast, in the case of judgmental tasks the criterion of successful performance is reaching a group consensus (Laughlin & Ellis, 1986). Stasser and Stewart (1992) found that groups whose members perceived a decision task as intellective discussed more critical information (information that is both unshared and preference-inconsistent) and made higher quality decisions than groups whose members perceived the task as judgmental. This finding can be interpreted as indicating that task demonstrability[1] may have an effect on biased evaluation of information: If individuals view the task as intellective, they may be more open to information contradicting their preferences, and hence evaluate the information in a more unbiased manner (Kruglanski & Freund, 1983).

More specifically, we propose an interaction effect between consensus information and task demonstrability. If individuals are not informed about each others' preferences, perceiving a task as intellective should make them more open to preference-inconsistent information and, hence, should decrease the evaluation bias favoring preference-consistent information. On the other hand, for both majority and minority members, we expect that consensus information eliminates the effects of demonstrability. First, being part of the majority increases one's confidence in the correctness of the decision, and this should be particularly pronounced if there is a correct answer, that is, in the intellective condition. Since confidence in the correctness of the decision increases preference-consistent processing of information, majority feedback should undo the positive (debiasing) effect of the intellective

task but should not change the negative effect of the judgmental task. In other words, for majority members there should be no difference between the intellective and the judgmental condition. For minority members, there should also be no difference between these two conditions, albeit for different reasons: If participants perceive themselves as a part of the minority, they should be interested in the viewpoint of the majority (i.e., they should be interested in preference-inconsistent information) even if there is no demonstrably correct solution. Hence minority feedback should induce a positive (debiasing) effect in the case of judgmental tasks but should not change the positive effect of the intellective task. This is our fourth hypothesis. In sum, the following four hypotheses were formulated:

*Hypothesis 1*: Consensus information has a stronger effect on the evaluation of unshared information than on the evaluation of shared information.

*Hypothesis 2*: Majority members should exhibit a higher evaluation bias favoring preference-consistent unshared information than minority members.

*Hypothesis 3*: Majority members should be less likely to solve hidden profiles than minority members, a tendency which is mediated by biased evaluation favoring preference-consistent unshared information.

*Hypothesis 4*: In the control condition without consensus information, perceiving a task as intellective should decrease the evaluation bias favoring preference-consistent unshared information. In contrast, differences between the intellective and the judgmental condition should not be significant for either majority or minority members.

*The present study*

We aimed to examine the effects of consensus information and task demonstrability on preference-consistent evaluation of information and the solution of hidden profiles. We distinguished between a control condition with no consensus information, a condition in which individuals learned they were in the majority, and a condition in which individuals

learned they were in the minority. In the latter two conditions, participants received bogus information about their fellow group members' preferences (who were physically present in the same room). To manipulate task demonstrability, participants were either led to believe that one of the two alternatives was clearly better than the other and that the correctness of this alternative could be demonstrated (intellective task condition) or that the decision was a matter of taste and that there was no demonstrably correct answer (judgmental task condition).

To control which pieces of information were exchanged, we employed a paradigm which builds on the procedure developed by Greitemeyer and Schulz-Hardt (2003). Similar to their study, our participants did not discuss the decision with each other but received additional information in written form and finally made an individual decision. However, in contrast to Greitemeyer and Schulz-Hardt, our participants did not read a discussion transcript but anticipated a real discussion and sequentially received additional information sheets which were allegedly the sheets their fellow group members had been given. The information was distributed in a hidden profile manner: The entire information set proved one alternative as superior, and this alternative was always the one which participants initially did not prefer. As a consequence, we were also able to test whether the effect of consensus information on decision quality is mediated by biased evaluation of information.

## Method

### *Participants and Design*

The sample included 120 students (82 women, 38 men). The experiment is based on a 3 (consensus information: majority vs. minority vs. no feedback) × 2 (task demonstrability: intellective vs. judgmental task) between-subjects factorial design.

### *Procedure and Materials*

Four students participated in each experimental session. Upon arrival, participants were told that they would first work on individual material about a personnel selection case. Thereafter, they would work together as a group to make a decision about which of two job candidates should be hired. At this point, task demonstrability was manipulated: In line with the prerequisites for demonstrability set forth by Laughlin and Ellis (1986), participants in the *intellective task* condition were told that they would work on a decision task in which one alternative was better than the other and that there were objective criteria allowing the superiority of this alternative to be demonstrated. In contrast, participants in the *judgmental task* condition were told that both candidates had their strengths and weaknesses and that the superiority of one alternative over the other could not be demonstrated.

The decision case was adapted from the material used by Mojzisch, Schulz-Hardt, Kerschreiter, Brodbeck, and Frey (2008). Participants read descriptions of two candidates applying for a job in a travel agency. On the first information sheet each candidate was characterized by five positive and three negative attributes. Hence, the participants should have perceived the candidates as more or less equally suited. The participants had to indicate which candidate they preferred on a separate questionnaire. Moreover, they were asked to evaluate each item with regard to its valence ("To what extent does this item support or oppose the candidate?"), credibility ("How credible is this item?"), and relevance ("How relevant is this item for your decision?"). Response scales ranged from 0 (not at all) to 7 (totally) for credibility and relevance and from -3 (very opposing) to 3 (very supportive) for valence.

Next, participants were informed that, according to previous research, decision quality benefits if individuals first exchange the information in written form before discussing the decision face-to-face. Hence, they would consecutively receive the candidate information sheets that their fellow group members had been given initially. As the group consisted of

four members, they would each receive three additional sheets. Participants were told that they would discuss the decision after having read each others' sheets.

Before participants received the additional sheets, consensus information was manipulated. In the *no feedback* control condition, participants received no information about the others' preferences. In the bogus feedback conditions, participants received a sheet showing a table which informed the participants about their fellow group members' preferences. Specifically, in the *minority condition*, the experimenter filled in the sheet to indicate that all three other members unanimously preferred a different candidate than the participant. By contrast, in the *majority condition*, the experimenter filled in the sheet to indicate that two other group members preferred the same candidate as the participant, whereas one member preferred the other candidate.

Next, depending on the participant's initial preference, the experimenter consecutively handed out a set of three additional information sheets, each of which looked identical to the one the participants had been given initially. The entire information set (comprising all four information sheets) proved one candidate to be superior, and the superior candidate was always the one not initially preferred by the participants. Thus, the information was distributed in a hidden profile manner (Table 1). On every one of the three additional information sheets, Candidates A and B were each characterized by five positive and three negative items. Six of the eight items about each candidate on each sheet were identical to the items on the first sheet. From the participants' perspective, these items were *shared*. Additionally, each sheet contained two new items about each candidate for a total of four new items. From the participants' perspective, these items were *unshared*[1]. Three of the new unshared items on each additional information sheet were preference-inconsistent, and one item was preference-consistent. Thus, participants learned more new preference-inconsistent items than preference-consistent items on reading the three additional sheets. Participants

could only solve the hidden profile by integrating the unshared items. In addition to each of the information sheets, participants received a questionnaire on which they had to rate the valence, credibility, and relevance of each item. To avoid confounding the content of the items with their shared-unshared-status, we used two versions of the material which differed with respect to which items were shared and which were unshared. Participants randomly received one of the two versions.

After participants had evaluated the items on the last sheet, they were asked to make a final decision about which candidate was best based on the entire information set. Thereafter, participants were thanked and thoroughly debriefed.

## Results

### *Check for possible confounds and manipulation check*

The data of four participants were discarded because they either received the wrong information sheets or expressed doubts about the correctness of the preference feedback. Of the remaining 116 participants, 55 initially voted in favor of Candidate A and 61 in favor of Candidate B, $\chi^2(1, N = 116) = 0.31$, $p = .58$, indicating that the candidates were perceived as about equally attractive at the beginning. No significant effects of participants' sex or candidate preference were found.

As a manipulation check for task demonstrability, participants had to answer three questions ("Do you think that there were objective criteria for the decision?"; "Do you think that subjective evaluations are important for the decision?", recoded; "Do you think that one candidate is demonstrably better than the other?"). Response scales ranged from 0 (not at all) to 6 (totally). The resulting ratings were averaged, and submitted to a 3 (consensus information: majority vs. minority vs. no feedback) × 2 (task demonstrability: intellective vs. judgmental) analysis of variance (ANOVA). The results revealed a main effect for task demonstrability, $F(1, 110) = 7.97$, $p = .006$, $\eta_p^2 = .07$, reflecting that participants in the

intellective condition were more likely to perceive the task as having a demonstrably correct solution ($M$ = 3.34, $SD$ = 1.20) than participants in the judgmental condition ($M$ = 2.70, $SD$ = 1.46). In contrast, there was neither a significant main effect of consensus information on task perception, $F(2, 110) = 0.83$, $p = .44$, $\eta_p^2 = .01$, nor a significant interaction, $F(2, 110) = 1.08$, $p = .34$, $\eta_p^2 = .02$. Hence, the manipulation of task demonstrability worked as intended. Note that we did not include any manipulation checks for consensus information because asking what preferences the other group members had might have alerted participants to the manipulation.

*Preference-consistent evaluation of information*

Before testing whether the evaluation bias is moderated by consensus information and task demonstrability, several points need to be clarified: First, we decided to include only the items on the additional information sheets (and not the items on the initial sheet) in the analyses. The rationale for this was that, based on their initial sheet, participants were unable to recognize which items were shared and which were unshared.

The second point worth noting is that unshared items had to be evaluated only once since they (by definition) appeared on only one of the three additional sheets. By contrast, each shared item had to be evaluated three times since shared items appeared on each of the additional sheets. To obtain one score for each shared item, we averaged the evaluation ratings on each of the three additional sheets[2].

Finally, in order to control for the distinctness of each argument used, we conducted a pre-study in which every item of information used in the main study was evaluated by $N$ = 28 students with regard to its valence, credibility, and relevance. Using these data, baseline values were calculated for every item on the three evaluation dimensions. These baseline values were used to transform the evaluation values of the main study into difference values. These difference values indicate whether an item was evaluated as more (positive values) or

less (negative values) valuable, important, or credible in the main study compared to the pre-study. Since the difference values of each evaluation dimension were highly correlated, we averaged them into a single difference value reflecting the favorability difference of an item in the main study compared to the pre-study (Cronbach's $\alpha = .79$; for a similar analysis see Fischer, Jonas, Frey, & Schulz-Hardt, 2005). In line with previous research (see again Fischer et al., 2005), we next subtracted the difference value of all preference-inconsistent items from the difference value of all preference-consistent items. The resulting difference values indicate whether information evaluation was biased in favor of preference-consistent (positive values) or preference-inconsistent information (negative values). A value of zero means unbiased evaluation (i.e., the evaluation of preference-consistent vs. preference-inconsistent items was similar to the evaluation in the pretest where the participants had not formed a preference).

Overall, there was a significant evaluation bias favoring preference-consistent information ($M = 0.17$, $SD = 0$ .50), $t(115) = 3.70$, $p < .001$. To test our hypotheses, we submitted the evaluation bias to a 3 (consensus information: majority vs. minority vs. no feedback) × 2 (task-demonstrability: intellective vs. judgmental task) × 2 (information type: shared vs. unshared information) ANOVA with repeated measures on the last factor. The analysis revealed a main effect for information type, $F(2, 110) = 12.28$, $p = .001$, $\eta_p^2 = .10$, indicating that the evaluation bias was more pronounced for shared ($M = 0.25$, $SD = 0.41$) than for unshared information ($M = 0.07$, $SD = 0.62$).

Additionally, we found a two-way interaction between consensus information and information type, $F(2, 110) = 8.13$, $p = .001$, $\eta_p^2 = .13$. In line with Hypothesis 1, follow-up ANOVAs showed that consensus information had a significant effect for unshared information, $F(2,113) = 5.12$, $p = .007$, $\eta_p^2 = .08$, yet had no significant effect for shared information, $F(2,113) = 0.80$, $p = .45$, $\eta_p^2 = .01$. Furthermore, in accordance with Hypothesis

2, post hoc tests revealed that majority members showed a higher evaluation bias favoring preference-consistent unshared information than minority members, $p = .002$. In contrast, the differences between the control condition and each of the two bogus feedback conditions failed to reach significance, both $p$s > .10. In sum, consensus information had a stronger effect on the evaluation of unshared information than on the evaluation of shared information (Hypothesis 1). Moreover, majority members showed a significantly more pronounced evaluation bias favoring preference-consistent information than minority members (Hypothesis 2).

The two-way interaction between consensus information and information type was further qualified by a three-way interaction between information type, consensus information, and task demonstrability, $F(2, 110) = 4.00$, $p = .021$, $\eta_p^2 = .068$. To unpack the three-way interaction, we examined the two-way interaction between consensus information and task demonstrability separately for shared and for unshared information. For shared information, there was no significant interaction effect, $F(2, 110) = 0.23$, $p = .80$, $\eta_p^2 = .02$ (see Figure 1). In contrast, for unshared information there was a significant interaction between consensus information and task demonstrability, $F(2, 110) = 3.29$, $p = .041$, $\eta_p^2 = .056$. As predicted by Hypothesis 4, this interaction is due to the fact that in the control condition with no consensus information perceiving the task as intellective decreased the evaluation bias favoring preference-consistent unshared information, $F(1, 38) = 6.31$, $p = .02$, $\eta_p^2 = .142$ (see Figure 2). By contrast, both in the majority and in the minority condition task demonstrability had no significant effect on the evaluation of unshared information, both $ps$ > .32. In other words, perceiving a task as intellective decreased the evaluation bias only if participants received no bogus information about their fellow group members' preferences.

*Decision Quality*

Overall, 51 of the 116 participants (44%) made the correct decision after having read all information sheets. There was no significant difference between participants in the intellective (41%) and the judgmental task condition (47%), $\chi^2(1, N = 116) = 0.53$, $p = .47$. In contrast, consensus information did affect decision quality, $\chi^2(2, N = 116) = 11.13$, $p = .004$. Majority members solved the hidden profile less frequently (22%) than participants in the minority condition (56%), $\chi^2(1, N = 76) = 9.62$, $p = .002$, and participants in the control condition (53%), $\chi^2(1, N = 76) = 7.81$, $p = .005$. There was no significant difference between the latter two conditions, $\chi^2(1, N = 79) = 0.12$, $p = .73$. A logistic regression analysis revealed no significant interaction between consensus information and task demonstrability, $p > .30$.

*Mediation analyses*

Since preference-consistent evaluation of information impedes the solution of hidden profiles, it is conceivable that participants in the majority condition were less likely to solve the hidden profile than participants in the other conditions *because* the former had a more pronounced evaluation bias favoring preference-consistent information than the latter (Hypothesis 3). To test this idea, we examined whether the effect of consensus information on decision quality is mediated by biased evaluation of unshared information. Since majority members were less likely to solve the hidden profile than minority members and members of the control group (with no significant differences between the latter two groups), consensus information was dummy-coded such that 0 indicated that participants were minority members or members of the control group and 1 indicated that they were majority members.

As predicted, consensus information significantly affected decision quality, $B = -1.47$, Wald = 10.20, $p = .001$, and the evaluation bias favoring preference-consistent unshared information, $\beta = .25$, $t(115) = 4.07$, $p = .007$. When both consensus information and the evaluation bias favoring preference-consistent unshared information were used to predict decision quality in a logistic regression, the evaluation bias turned out to be a significant

predictor, $B$ = -2.35, Wald = 20.21, $p < .001$, whereas the magnitude of the effect of consensus information was substantially reduced, but remained significant, $B$ = -1.28, Wald = 5.85, $p = .016$. A Sobel test confirmed that the mediation was significant, $Z$ = -2.33, $p = .02$. To corroborate this finding, we tested for mediation using bootstrapping methods as advocated by Preacher and Hayes (2008). Using 10,000 bootstrap resamples and bias-corrected and accelerated confidence intervals (BCa CIs), the results revealed that biased evaluation of unshared information was a significant mediator, with a 95% Bca CI of -.23 to -0.03. In sum, we can conclude that the effect of consensus information on decision quality was at least partially mediated by biased evaluation of unshared information. Thus, Hypothesis 3 was confirmed.

## Discussion

Although previous research has systematically investigated which variables moderate the *exchange* of information in groups (for reviews, see Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007; Mojzisch & Schulz-Hardt, 2006; Stasser & Birchmeier, 2003), the question which variables moderate the *evaluation* of the information exchanged has been largely neglected (for exceptions, see Postmes, Spears, & Cihangir, 2001; Van Swol, 2007). In the present study, we examined the impact of consensus information and task demonstrability on preference-consistent evaluation of information and decision quality.

For shared information, our results revealed a robust evaluation bias favoring preference-consistent information which was not moderated by consensus information. A plausible explanation for this finding is that shared information, by definition, is held prior to forming the initial decision. Hence, for shared information the bias favoring preference-consistent information may not only be the *result* of having made a decision but may additionally or exclusively be due to the idiosyncratic weighting of the information prior to the decision, that is, it may be a *cause* of the particular preference that the person exhibits.

This may explain why, for shared information, the evaluation bias seems to be immune to the effects both of task demonstrability and of consensus information.

In contrast to shared information, for unshared information there was overall no significant evaluation bias favoring preference-consistent information. Rather, the occurrence of an evaluation bias depended on contextual factors such as consensus information and task demonstrability. In line with Hypothesis 2, majority members showed a more pronounced evaluation bias favoring preference-consistent unshared information than minority members. This finding corresponds to predictions of the consensus implies correctness heuristic advocated by Chaiken and Stangor (1987). Accordingly, majority members are more convinced about the correctness of their choice than minority members. Since confidence in the correctness of one's choice has been found to increase preference-consistent processing of information (Brannon et al. 2007; Schulz-Hardt et al., 2000), majority members show a more pronounced evaluation bias than minority members.

When differentiating between the intellective and the judgmental task conditions, an additional aspect emerged: In line with Hypothesis 4, task demonstrability decreased preference-consistent evaluation of unshared information in the control condition with no bogus feedback about the others' preferences. This finding supports the idea that, in general, individuals are more open to arguments contradicting their preferences when they think that there is a demonstrable correct solution (Kruglanski & Freund, 1983). However, again in line with Hypothesis 4, task demonstrability did not significantly influence the evaluation bias in both the majority and the minority condition. Simply stated, task demonstrability had no effect on biased evaluation of information if group members were aware of each others' preferences.

Regarding decision quality, we found that majority members were less likely to solve the hidden profile than minority members and members of the control group. In accordance

with Hypothesis 3, mediation analyses revealed that the lower decision quality in the majority condition can partially be explained by the fact that majority members showed a more pronounced evaluation bias favoring preference-consistent information and, hence, were more likely to stick to their initial preference. One tentative conclusion that can be drawn from this finding is that the effect of the consensus implies correctness heuristic is at least partially mediated by biased evaluation of information. Yet, it is important to note that the mediation was only partial. Hence, other processes must contribute to the effect of consensus information on decision quality. For example, it is plausible that minority members were not only more likely to solve the hidden profile because they had a less pronounced evaluation bias than majority members but also because at least some of them simply adopted the position of the correct majority.

*Limitations of the study and implications for the group decision-making literature*

At this point, two limitations of our study should be taken into account: First the setting we used in our experiment was somewhat artificial as compared to a natural group discussions. Thus, the additional pieces of information participants learned were always presented in written form without any evaluations tied to them, and there was no group discussion at all. However, it is worth noting that previous research has found that the results obtained with controlled settings such as in the present study can be replicated in studies using face-to-face group discussions (e.g., Mojzisch & Schulz-Hardt, 2010).

A second limitation of our study is that our manipulation of task demonstrability was relatively weak (although the results of the manipulation check were significant, they were not very strong). This might explain why, for example, task demonstrability had no effect on decision quality. Hence, future research should employ stronger manipulations of task demonstrability.

Our findings have several important implications for the group decision-making literature. First, our study provides convincing support for the consensus implies correctness heuristic (Chaiken & Stangor, 1987). Surprisingly, the recent group decision-making literature has almost completely ignored this heuristic. We therefore hope that our study will stimulate other researchers to examine the role of this heuristic for group decision-making.

A second interesting implication results from the finding that task demonstrability had no effect on biased evaluation of information if group members received bogus information about their fellow group members' preferences. Since 90% of all group discussions start with the group members exchanging their preferences, we can conclude that for almost all groups task demonstrability is unlikely to have an effect on biased evaluation of information. This implies that the positive effect of perceiving a task as intellective on the solution of hidden profiles in group decision making (Stasser & Stewart, 1992) is likely to be due to other factors, for example, the impact of task demonstrability on information pooling during discussion.

Finally, our finding that majority members were less likely to solve the hidden profile than minority members and members of the control group fits nicely with the finding that homogeneous groups are less likely to solve hidden profiles than heterogeneous groups (e.g., Scholten et al., 2007; Schulz-Hardt et al., 2006). Although there is evidence that the failure of homogeneous groups to solve hidden profiles is at least partially due to a less intensive and more biased discussion, it may also be due to the fact that members of homogeneous groups show a particularly pronounced evaluation bias favoring preference-consistent information. Testing this idea is an important avenue for future research.

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## Notes

[1] In line with Laughlin & Ellis (1986) we propose that task demonstrability requires four conditions, namely (a) a logical system that is commonly shared among the group members, (b) the availability of sufficient information for identifying a solution, (c) sufficient ability, motivation, and time for a group member to demonstrate the correctness of a solution to the other group members, and (d) the ability of all group members to recognize and accept a correct solution.

[2] The additional information sheets included more preference-inconsistent unshared items than preference-consistent unshared items in order to induce a hidden profile. The same logic of distributing preference-consistent and preference-inconsistent items was employed by Greitemeyer and Schulz-Hardt (2003).

[3] In order to demonstrate the homogeneity of the evaluations of shared information on the additional information sheets, we calculated Cronbach's Alpha for the three evaluations of each shared piece of information ($M = .88$, $SD = .05$).

Table 1

*Information Distribution*

| | Initial Information Sheet | |
|---|---|---|
| Information Type | Candidate A | Candidate B |
| Shared items | 5 + / 3 - | 5 + / 3 - |

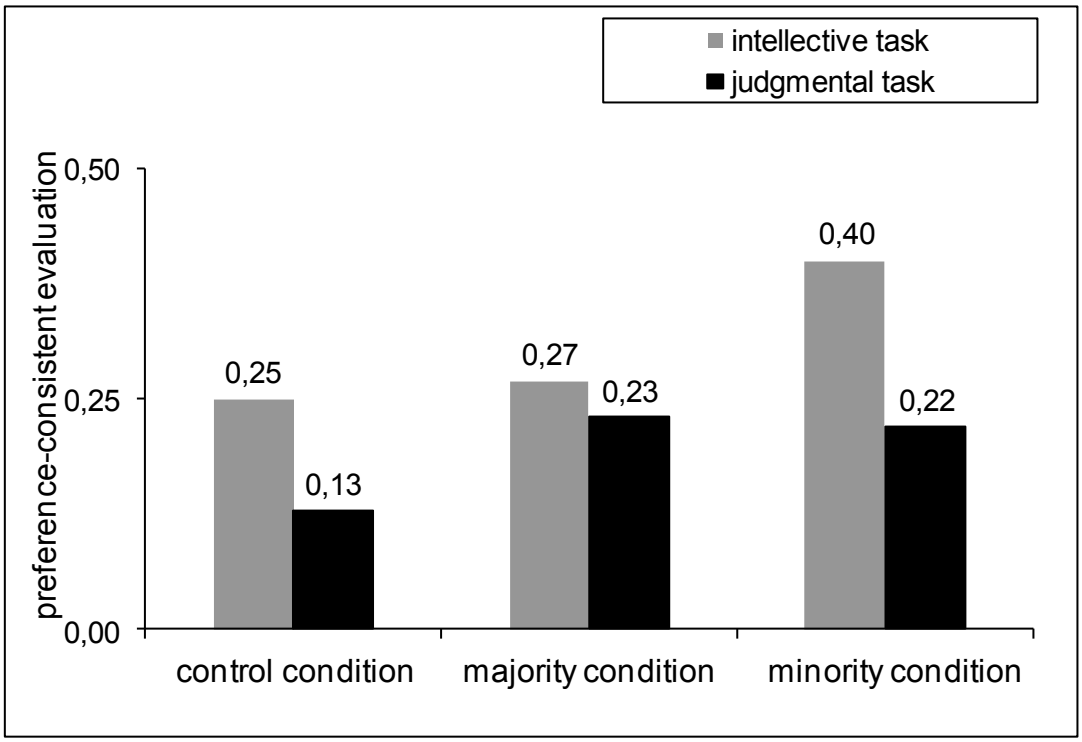
| | Additional Information Sheets | | | |
|---|---|---|---|---|
| | If candidate preference = A | | If candidate preference = B | |
| Information Type | Candidate A | Candidate B | Candidate A | Candidate B |
| 1st additional sheet | | | | |
| shared items | 4 + / 2 - | 3 + / 3 - | 3 + / 3 - | 4 + / 2 - |
| unshared items | 1 + / 1 - | 2 + | 2 + | 1 + / 1 - |
| 2nd additional sheet | | | | |
| shared items | 5 + / 1- | 4 + / 2 - | 4 + / 2 - | 5 + / 1- |
| unshared items | 2- | 1 + / 1 - | 1 + / 1 - | 2- |
| 3rd additional sheet | | | | |
| shared items | 4 + / 2 - | 3 + / 3 - | 3 + / 3 - | 4 + / 2 - |
| unshared items | 1 + / 1 - | 2 + | 2 + | 1 + / 1 - |

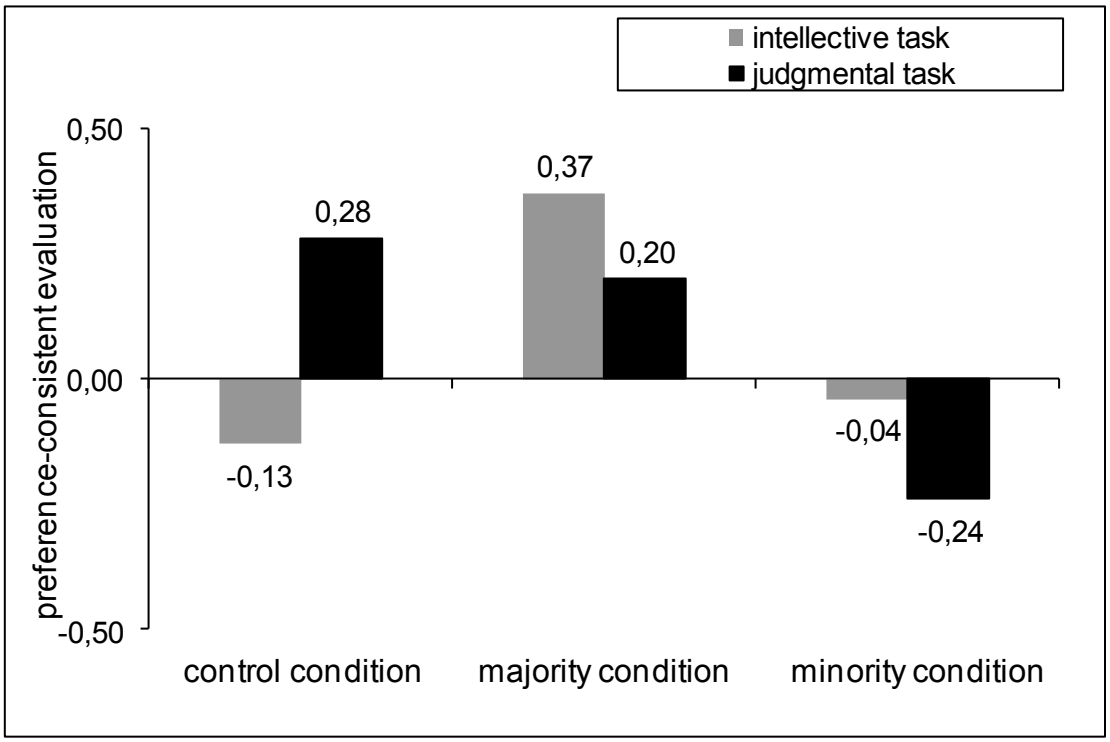
| | Entire Information Set | | | |
|---|---|---|---|---|
| | If candidate preference = A | | If candidate preference = B | |
| Information Type | Candidate A | Candidate B | Candidate A | Candidate B |
| shared items | 5 + / 3 - | 5 + / 3 - | 5 + / 3 - | 5 + / 3 - |
| unshared items | 2 + / 4 - | 5 + / 1 - | 5 + / 1 - | 2 + / 4 - |

*Notes.* Numbers refer to the amount of information, + refers to supportive information, - refers to opposing information.

*Figure 1*. The effects of consensus information and task demonstrability on preference-consistent evaluation of shared information

*Figure 2*. The effects of consensus information and task demonstrability on preference-consistent evaluation of unshared information


intellective task
judgmental task
preference-consistent evaluation
0,50
0,25
0,00
0,25
0,13
0,27
0,23
0,40
0,22
control condition
majority condition
minority condition


intellective task
judgmental task
preference-consistent evaluation
0,50
0,00
-0,50
0,28
-0,13
0,37
0,20
-0,04
-0,24
control condition
majority condition
minority condition