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The Role of Confidence and Competence in the Social Verification of Judgments in a Dyadic Interaction

Ekaterina A. Tolstova*, Nadezhda V. Moroshkina
St. Petersburg State University, St. Petersburg, Russian Federation
*Responsible author's e-mail: 1207tea@gmail.com

Abstract

Introduction. When making judgments under uncertainty, people often use social verification, i.e., comparing their judgments with the opinions of others. In some cases, social verification leads to increased accuracy of judgments (the "two heads are better" effect). However, to improve accuracy, it is important to take into account the partner's competence and current confidence in the answer. The ways in which confidence is conveyed in computer-mediated dyadic interaction situations are still poorly understood. The present study allowed us, for the first time, to isolate direct (confidence judgment) and indirect (response time) confidence transfer pathways and to test their effects on the success of social verification judgments in computer-mediated interaction. **Methods.** The experiment followed a between-subjects design, with groups differing in the way confidence was conveyed (direct / indirect). There were a total of 70 participants (50 females, 20 males) aged 18 to 33 years (M = 22.2, SD = 3.15). Participants worked in pairs at the same computer, with a non-transparent screen separating them so that they could not see each other. In the first stage, participants completed the reading experience test independently, and in the second stage they had the opportunity to compare their answers with a partner and to revise them. Between stages, information about the success (competence) of both participants was presented. **Results.** The concurrence of participants' responses increased significantly after they revised them. Confidence conveyed both indirectly and directly had a significant effect on the likelihood of response change. There was no significant effect of participants' relative competence. However, only the group with direct conveyed confidence significantly increased the accuracy of revised responses. **Discussion.** A possible explanation could be that accuracy

is increased by orienting to the partner's confidence, which was easier to accomplish in the direct confidence transfer group. An alternative explanation may be that explicit confidence evaluation not only conveys information to the partner, but also helps the person themselves better understand where they are more likely to be wrong.

Keywords

social verification, computer-mediated interaction, decision making, confidence judgment, competence

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Introduction

When we're not sure what decision to make, we often seek help from others in the hope of increasing the accuracy of our decisions. This phenomenon was described by A. Bandura in The Social Learning Theory: "When experiential verification is either difficult or impossible, people evaluate the soundness of their views by comparing them against the judgments of others." (Bandura, 2000, p. 250). He also introduced the term "social verification", under which modern researchers understand the assessment of the validity of knowledge based on the comparison of one's own knowledge and judgments with the opinions of other people (Allakhverdov, 1993; Gershkovich, Moroshkina, Naumenko, Allakhverdov, 2010; Tikhonov, Ovchinnikova, 2016; Tikhonov, 2020). In the process of social verification, people focus on the coincidence of answers as a signal about the correctness of the answer. At the same time, the independence of initial judgments is an important condition to ensure exactly informational rather than normative social influence (Rader, Larrick & Soll, 2017). However, a reasonable question arises: are "two heads always better than one"? To what extent does social verification improve accuracy in cognitive tasks, and on what factors does this depend?

Birnbaum & Stegner (1979) showed that people who combine information from different external sources take into account the expertise of those sources. However, Harvey & Fischer (1997) later found that even experts listen to advice from novices, i.e.,

despite obvious differences in expertise, people do not completely reject the help offered to them. In addition, they found the effect of "egocentric discounting", according to which people tend to rely more on their own knowledge and less on the opinions of others, which can lead to suboptimal decisions. However, this tendency weakens when advice is given by someone more experienced than the decision maker. The greater the difference in the level of competence between the advisor and the decision maker, the more likely the advice was to be accepted. A recent meta-analysis by Bailey and colleagues (Bailey, Leon, Ebner, Moustafa, & Weidemann, 2022), combining results from 129 independent datasets, found that information about the advisor that measures the quality of their advice was the only unique predictor of the overall weight of advice ("weight of advice" is a quantitative measure of how much the original decision shifts toward the advice when the two disagree).

However, information about the advisor's competence is not always available; moreover, the advisor may be judged to be of equal competence to the decision maker. Research shows that in the absence of objective feedback on the quality of advice, participants' confidence becomes an important factor in social verification. For example, ample empirical evidence suggests that people who are uncertain about their answers tend to seek social information more and rely on it more when making decisions (Gradassi, van den Bos & Molleman, 2022; Pescetelli, Hauperich & Yeung, 2021; Tikhonov & Moroshkina, 2023; Undorf, Livneh & Ackerman, 2021). That said, participants can use their own confidence quite flexibly. When self-confidence is low, it acts as a signal to seek advice, and when self-confidence is high, it is used to test the competence of the advisor (Carlebach & Yeung, 2023).

Research on joint decision making has shown that in situations of inconsistent opinions, people tend to use confidence heuristics, i.e., to focus on the opinion of the more confident participant (Thomas & McFadyen, 1995; Swol & Sniezek, 2005; Zarnoth & Sniezek, 1997). A. Koriat has shown that the use of confidence heuristics can improve the accuracy of joint decisions over individual decisions (the "two heads are better" effect), but only if confidence is initially correlated with correctness (Koriat, 2012).

Thus, confidence can fulfill several important functions at once: to act as a trigger of social verification, to be used as a criterion for choosing the answer of one of partners in joint decision-making, and to contribute to the assessment of the partner's competence and the building of epistemic trust in him/her (Moroshkina, Zverev, Nezdoymyshapko, Tikhonov, 2023). It is important that in order to apply the confidence heuristic, partners need not only to monitor their own confidence, but also to somehow compare it with the partner's confidence, which raises the question of channels and ways of communicating information about confidence.

Most studies investigate the verbal transmission of confidence in face-to-face interactions through explicit evaluations (Eskenazi et al., 2016; Bahrami et al., 2011). However, it is known that observers are able to correctly determine partner confidence

even in the absence of verbal communication, relying only on nonverbal cues of confidence, such as facial expression, movement patterns, and response time (Mori & Pell, 2019; Savina & Moroshkina, 2019; Slepian, Young, Rutchick, & Ambady, 2013; Vuillaume, Martin, Sackur, & Cleeremans, 2020). Pulford and colleagues (Pulford, Colman, Buabang & Krockow, 2018) investigated whether the use of confidence heuristics is affected by the format of the interaction. They found that participants were equally successful in applying confidence heuristics in both face-to-face and computer-mediated interaction conditions (where participants could not see each other). The authors concluded that it was the verbal communication of confidence that was important to participants. In addition, the authors found that more confident partners tended to communicate their opinions first. Consequently, the factor of response speed could also serve as an indirect channel of confidence transmission, including in computer-mediated communication.

Unfortunately, there are currently not many studies that compare different ways of conveying confidence. In one such paper (Bang et al., 2014), researchers built two algorithms that simulated different confidence heuristics in dyadic decision making based on the results of an experiment already conducted (Bahrami et al., 2012) and then compared them to the original data. The first algorithm was based on subjective confidence estimates (MCS) and always chose the most confident participant's answer when there was a mismatch. The second algorithm was based on response time (MRTS) and selected the response of the fastest participant. The results showed that by using both algorithms, a collective improvement in the response accuracy could be achieved, although MCS showed a significantly higher performance than MRTS. Comparing the results of the algorithms with the real data of the experiment, the authors obtained that the algorithms performed significantly better only for dyads with the same competence of the participants, and in dyads where the participants differed greatly in competence, their real interaction was more effective than the algorithms. It should be noted that in the experiment, participants received feedback after each trial, which allowed them to evaluate their partner's competence. The authors conclude that when making joint decisions, people take into account each other's competence, which presumably makes them less susceptible to those situations in which the more confident participant turns out to be less competent, so that the "two heads are better" effect is possible. In future research, the authors suggest building models that include a competence factor.

Modern research shows that social verification plays an important role in decision making. To understand the mechanisms of social verification, it is necessary to simultaneously take into account a set of factors, the most important of which are information about the competence of partners and their subjective confidence in the answer. At the same time, both explicit (verbal) assessments and non-verbal signs of confidence (including the time of decision making), which are read by interaction partners, can act as channels of confidence transmission. Because much of communication takes place through modern technologies, the question arises as to what extent these technologies take into account the ways of sharing confidence (and metacognitive cues in general)

described above. When verbal communication is not possible, or when communication is hampered by asynchronous time delays or blurred images, as on video conferencing platforms, it is important to understand what verbal and nonverbal cues a person relies on.

Purpose of the study

The purpose of our study was to test whether the ways to share confidence (direct - confidence judgment or indirect - speed of response) and partner competence affect whether the partner's opinion will be taken into account when making judgments in computer-mediated interaction.

Hypotheses of the study

1. In the absence of objective feedback, response change will be influenced by whether the partners' initial responses match or mismatch: matched responses are more likely to be retained than mismatched responses.
2. When responses are mismatched, if a participant's confidence is lower than his partner's, he is more likely to change his response in favor of his partner in both the direct and indirect confidence transfer groups.
3. Information about the partner's competence will influence whether the participant will consider the partner's opinion: if the participant's competence is lower than the partner's, the participant will be more likely to change the answer in the partner's favor.
4. Participants' revised responses will be more accurate than their initial responses (the "two heads are better" effect). This effect will be stronger in the group with direct confidence transfer.

Methods

Sample

The study involved 70 volunteers (50 females, 20 males) aged 18 to 33 years (M = 22.2, SD = 3.15) recruited through an online social media advertisement. All participants were divided into pairs such that they did not know each other, were of the same sex, and were approximately the same age. One pair of participants did not make it into the final sample because the post-experimental interview revealed that they had not paid attention to feedback after the first phase. Participant pairs were randomly assigned into two groups:

- EG-d was the group in which confidence information was conveyed directly in the form of a confidence judgment;
- EG-i was a group in which confidence information was communicated indirectly through reporting who gave the answer faster.

Stimulus material

To examine the social verification process and how confidence and competence contribute to it, we required the following conditions:

- tasks would be difficult enough to create uncertainty;
- all participants would have relevant but unequal knowledge for completing these tasks. In this case, they could improve the accuracy of each other's answers through social verification.

The tasks from the Reading Experience Test (Chernova, Bakhturina, 2021) were used as stimulus material. The participant's task was to determine which of the presented names and surnames belong to real writers. To provoke feelings of uncertainty, we selected the names of those writers who, according to Chernova and Bakhturina's (2021) study, people recognized as writers the worst (mean recognition rate of 33% (SD = 15%)). We selected a total of 60 names (30 were writers and 30 were not), from which two balanced lists of 30 names each were compiled.

Experimental procedure

The experiment was conducted in person. Pairs of participants worked at one computer with two keyboards: the one who sat at the left keyboard became participant #1, the one who sat at the right keyboard became participant #2. The monitor was placed in the middle so that both participants could see the entire screen. A non-transparent screen was placed between the participants so that they could not see each other. During the whole experiment, the participants worked in silence without direct contact with each other.

The procedure of the experiment consisted of two stages.

1. At the first stage, participants completed the tasks individually. On the screen, 30 names appeared sequentially in random order with the question "Is this the name of a real writer?". Within 10 seconds, the participants had to press the (Yes/No) key. Each participant entered their answer using their own keyboard. After 0.2 sec after both participants had entered their answers, the next trial began. After all trials were completed, the percentage of correct answers of each participant was displayed on the screen, allowing them to evaluate who was more competent in the given tasks.

2. A second phase with 30 new tasks was then initiated, in which participants completed the tasks together: they first entered their initial response, then read their partner's opinion, and then entered their revised response. Each task was presented in the same way as in the first phase, for a maximum of 10 seconds. Within 10 seconds, participants had to select their answer and press the appropriate key (Yes/No).

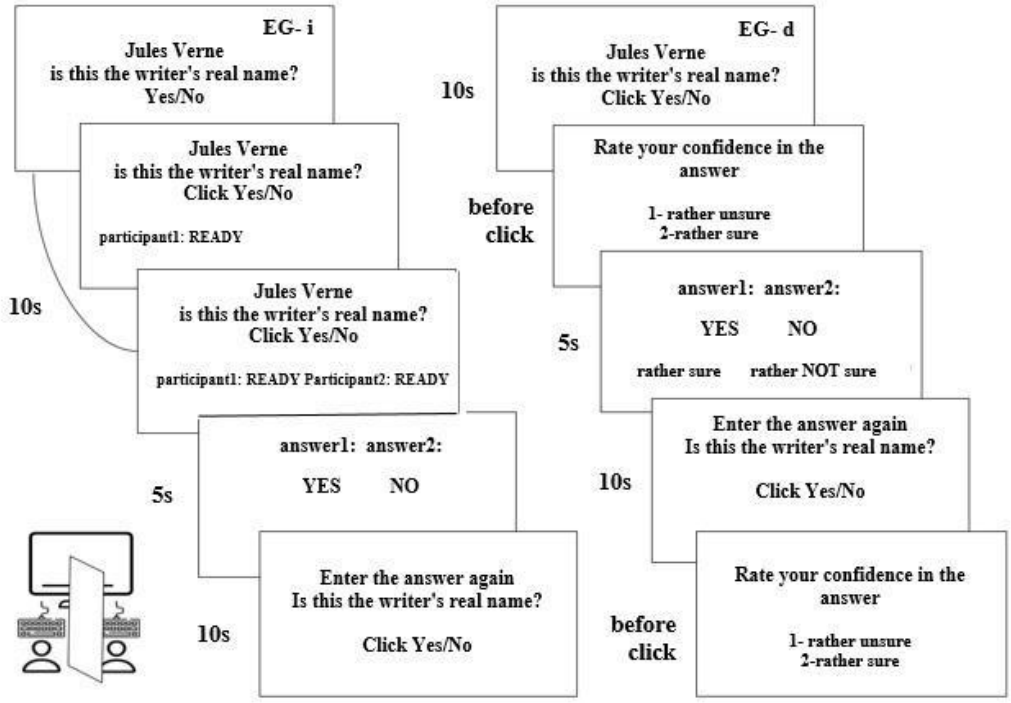
2.1 In EG-i, as soon as one participant entered his or her answer, the corresponding message "participant #1(2) ready" appeared on the screen. As soon as the second

participant entered his or her answer, the message "participant #2(1) ready" was added (Figure 1). These messages were displayed on the side of the screen that was closer to the responding participant. Both participants' responses were then displayed on the screen for 5 seconds. Participants were then asked to enter their revised response within 10 seconds. The next trial then began after 0.2 seconds.

2.2. In EG-d, in the second phase, the tasks were also presented for a maximum of 10 sec. After both participants gave an initial response, they were asked to indicate their confidence in the answer by pressing the appropriate key (1 - "rather sure", 2 - "rather unsure") (Figure 1). After both had responded, there was a time delay (which varied randomly from 0.5 to 1 sec). This was done so that participants would not know which one responded earlier and which one responded later. Both participants' responses, as well as their confidence judgments, were then presented on the screen for 5 sec. Participants were then asked to enter their revised response and final confidence judgment within 10 seconds.

Figure 1

Procedure of the second stage in the EG-i group (left) and EG-d group (right)



The results were analyzed using the SPSS Statistics 23 program. To test all hypotheses, repeated measures analysis of variance with aggregation across subjects was used. In an additional analysis of the relationship of competence and response change with initial response time, analysis of variance was used without aggregation across subjects.

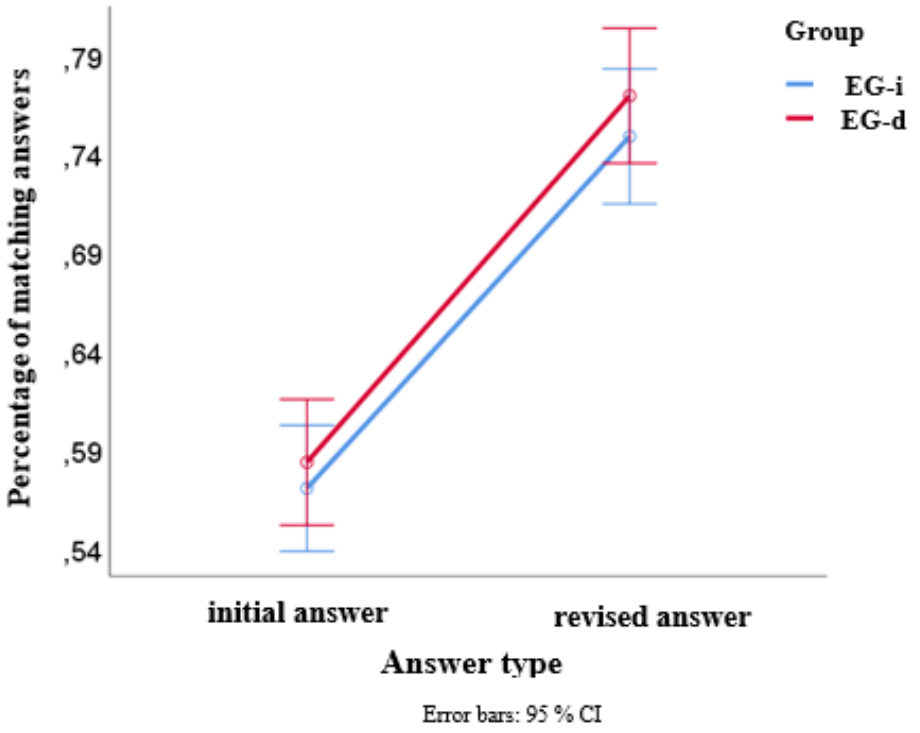
Results

Analysis of the coincidence of initial and revised responses of partners in groups at the second stage

To test the hypothesis of social verification, we took the share of matching answers as the dependent variable, the independent variable was the type of answer (initial/revised), and the between-group factor was the type of group - with direct or indirect transfer of confidence. It was found that in both groups the proportion of matching responses increased with revised response: in EG-d from 0.58 (SD = 8.9) to 0.77 (SD = 9.5), in EG-i from 0.57 (SD = 9.7) to 0.75 (SD = 10.4), this increase was statistically significant ($F(1, 66) = 267.84$; $p < .001$; $\eta^2 = ,802$). No effect of the group factor was found ($F(1, 66) = .672$; $p = .415$; $\eta^2 = .01$), as were factor interactions ($F(1, 66) = .111$; $p = .74$; $\eta^2 = ,002$). Thus, the response match statistically significantly increased with revised response regardless of group (Figure 2).

Figure 2

Average share of matched answers depending on the group and type of answer



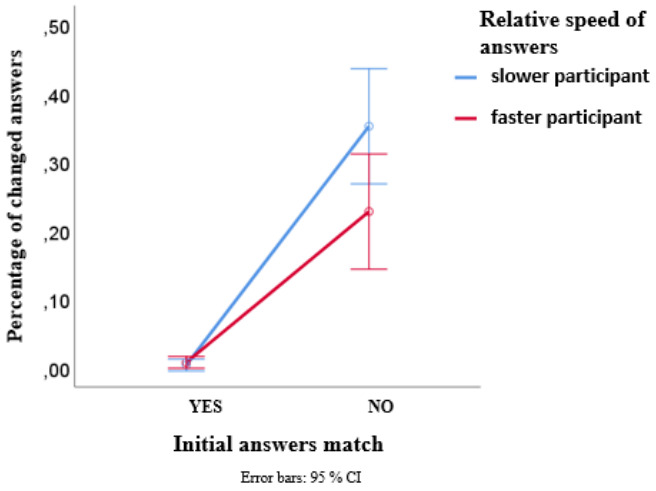
Analyzing the contribution of confidence and the way it is conveyed to the probability of answer change

Next, we analyzed the relationship between response time and confidence in the direct confidence transfer group (EG-d). This served as an independent validation that, in our task, response time can indeed be used as a cue of confidence. Confident initial response times averaged 2.6 sec (SD = 0.68) and uncertain responses averaged 3.44 sec (SD = 0.87), this difference was statistically significant (t (66) = 4.387; p < 0.001; d = 1.064). Thus, in EG-d, uncertain responses were significantly slower than confident ones.

Next, we tested the hypothesis that in the group with indirect confidence transfer (EG i), confidence conveyed through the message of response speed influences the change of the initial response. The dependent variable was the proportion of changed responses, the independent variable was the presence of an initial response match (yes/no), and the relative speed of the initial response (gave the response first, before the partner / gave the response second, after the partner). A significant influence of the confidence factor (F(1, 62) = 4.052; p = .048; η^2 = .061), the factor of matching initial responses (F(1, 62) = 90.82; p < .001; η^2 = .594) and their interaction (F(1, 62) = 4.628; p = .035; η^2 = .069) was found (Figure 3). If the responses matched, it did not matter whether the person answered faster or slower than their partner, as the mean percentage of change in response was small. And if the responses did not match, the person who initially responded slower was more likely to change the response.

Figure 3

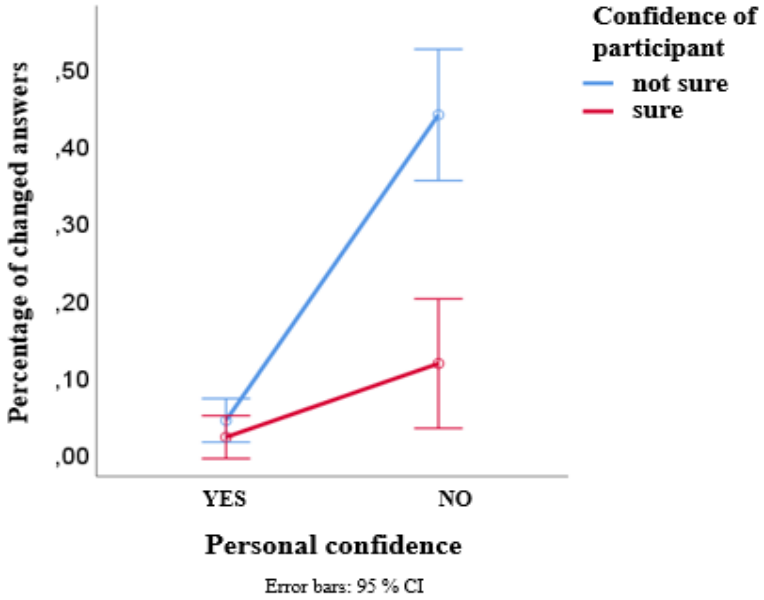
Proportion of changed responses as a function of matching and relative speed of initial responses in EG-i



We then tested the effect of confidence conveyed through explicit evaluations in EG-d, and found a significant effect of the confidence factor ($F(1, 65) = 33.736$; $p < .001$; $\eta^2 = .342$), the factor of matching initial responses ($F(1, 65) = 54.449$; $p < .001$; $\eta^2 = ,456$) and their interaction ($F(1, 65) = 20.383$; $p < ,001$; $\eta^2 = ,239$) (Figure 4). It turns out that if the answers matched, confidence does not affect the answer change because the average percentage of answer change is small. And if the answers did not match, the person who was uncertain is more likely to change the answer. Thus, hypothesis 2 was confirmed because confidence in both groups influenced the answer change.

Figure 4

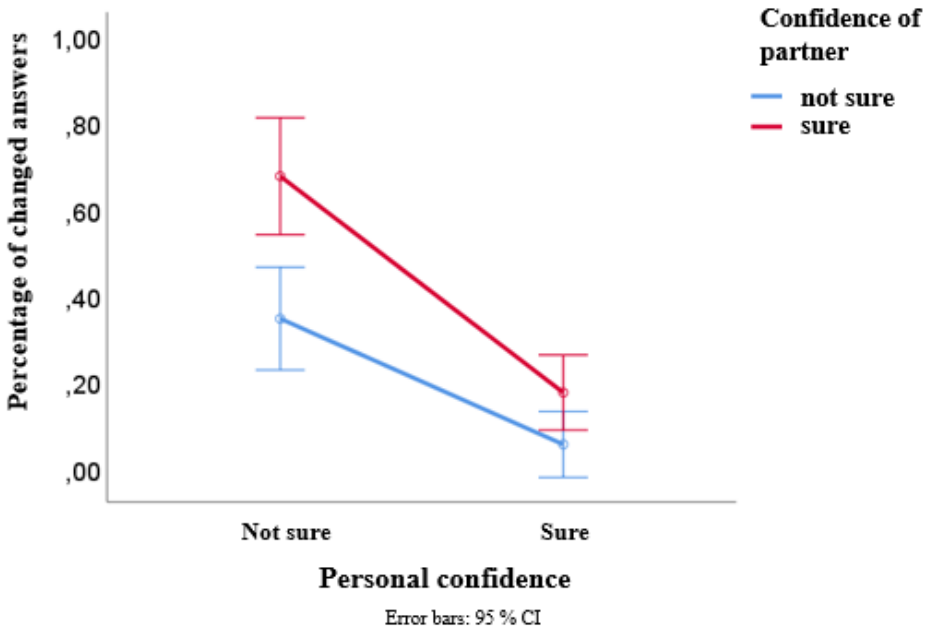
Proportion of changed answers depending on matching and own confidence in initial answers in EG-d



Additionally, we decided to check the contribution of both participant's own confidence and the confidence of the partner to the change of the answer in EG-d. Only initially non-matching answers were analyzed, since the previous analysis showed that matching answers hardly change at all. A significant effect of the factor of participant's own confidence ($F(1, 50) = 75.1442$; $p < .001$; $\eta^2 = .592$), partner's confidence ($F(1, 50) = 12.202$; $p = .001$; $\eta^2 = .207$) and their interaction ($F(1, 50) = 5.209$; $p = .027$; $\eta^2 = ,092$) was found. Thus, when a participant is confident, they generally do not change their responses much, regardless of their partner's confidence. And when the participant is uncertain, he or she is more likely to change the answer when the partner is certain than when both are uncertain (see Figure 5).

Figure 5

Percentage of changed answers depending on participant's own confidence and partner's confidence in EG-d



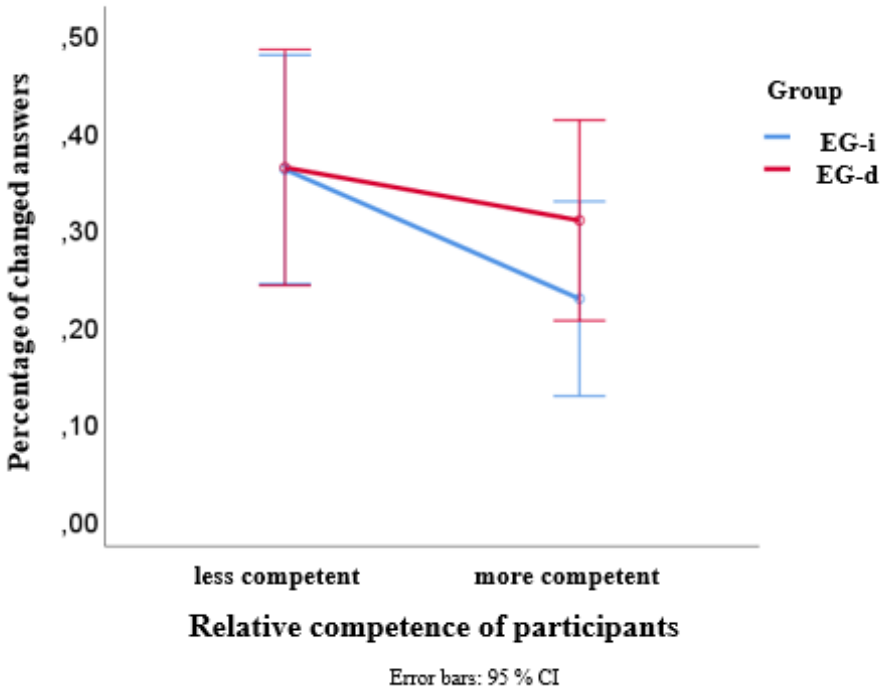
Analyzing the response accuracy (competence) at the first stage and its contribution to the probability of changing answers in the second stage

To test the effect of partner competence on the probability of changing answers, we first calculated the percentage of correct answers in the first stage of the experiment for each partner in the pair and determined who was more competent (relative competence factor). The mean competence in EG-d was 57% (SD = 10.3%) and in EG-i was 59% (SD = 12.1%). We compared the mean proportion of correct answers with the level of random guessing (50%) and found significant differences for both experimental groups: EG-d - ($t(33) = 3.715$; $p = .001$; $d = 0.637$), EG-i - ($t(33) = 4.445$; $p < 0.001$; $d = 0.763$), i.e. the tasks were challenging enough to provoke uncertainty, but still participants were able to solve them correctly. The mean difference in competence between partners was 12% (SD = 9.7%) in EG-d, and 17% (SD = 10%) in EG-i. We took only the non-matching responses for analysis, as the matched responses were hardly changed by the participants. The dependent variable was the proportion of changed responses, while the independent

factors were the experimental group (EG-d / EG-i) and the relative competence of the partner in the pair (more competent / less competent). The influence of the competence factor (F(1, 31) = 2.452; p = .127; η^2 = .073), the group factor (F(1, 31) = .73; p = .399; η^2 = ,023) and their interaction was not found (F(1, 31) = ,431; p = ,516; η^2 = .014) (Figure 6).

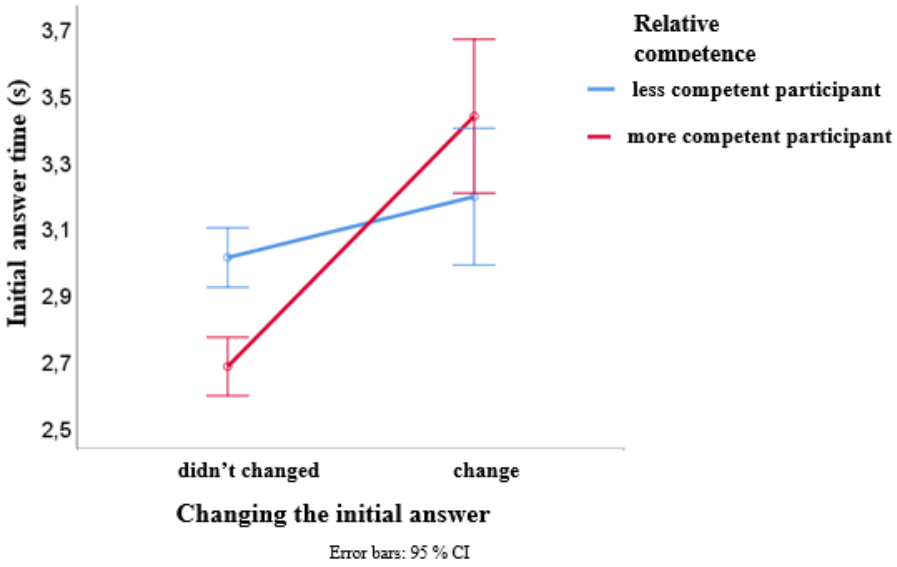
Figure 6

Proportion of changed answers for more and less competent participants by group



Because the main analysis did not reveal an effect of competence on the likelihood of changing a response, an additional analysis was conducted. We hypothesized that competence might act as a factor mediating the extent to which a participant relies on his or her own confidence to revise a decision. As in the previous analysis, we only took nonmatched responses. The dependent variable was the time of initial responses (as a proxy for confidence), while the independent factors were the presence of change in responses (changed/not changed) and relative competence (more competent/less competent). No significant effect of the competence factor was found (F(3, 1954) = .254; p = .614; η^2 < .001), but a significant effect of the response change factor (F(3, 1954) = 30.188; p < .001; η^2 = .015) and their interaction (F(3, 1954) = 11.183; p = .001; η^2 = ,006) (Figure 7).

Figure 7
Relation of initial response times to the probability of changing responses in more and less competent participants



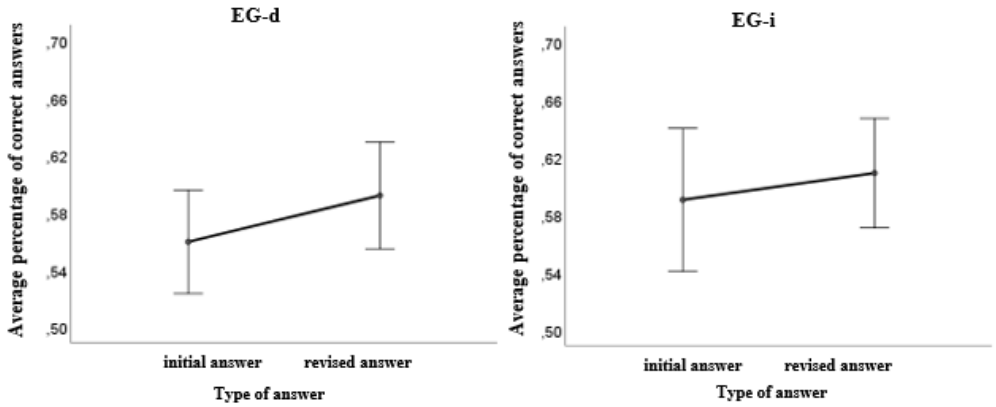
Thus, the time of an initial response significantly predicts the likelihood of its subsequent change (the slower the response, the higher the likelihood of its change). In more competent participants, the time of initial responses correlates more strongly with the likelihood of their subsequent change: fast responses are significantly less likely to change later than slow responses. For less competent participants, the same trend is observed, but it is significantly weaker (as evidenced by the interaction effect of factors).

Analysis of the share of correct answers in groups at the second stage

In testing the fourth hypothesis of an increase in the proportion of correct answers in the second stage after comparing with a partner, it was found that the mean proportion of correct answers in EG-d increases from 0.56 (SD = 10) to 0.59 (SD = 11) and this difference is statistically significant ($F(1, 33) = 9.022$; $p < .005$; $\eta^2 = ,215$). The mean proportion of correct answers in EG-i also increases slightly from 0.59 (SD = 14) to 0.61 (SD = 11), this difference did not reach a statistically significant level ($F(1, 33) = 1.528$; $p = .225$; $\eta^2 = .044$) (Figure 8).

Figure 8

Proportion of correct answers in the group with direct and indirect confidence transfer depending on the type of answer (initial/revised)



Discussion

The first hypothesis was aimed at testing the effects of social verification on making judgments in computer-mediated partner interaction. The analysis of the results confirmed the hypothesis. In the absence of objective feedback, participants in both groups focused on matching responses with a partner and were more likely to change non-matching responses. This led to the fact that the proportion of matching answers increased significantly in revised answers (by about 20%) and amounted to about 75-77% of the total in both groups. Given that the proportion of correct answers in this case averaged about 60%, the consistency effect is not a consequence of matching only correct answers. These results are consistent with previous studies (Tikhonov, 2020; Gershkovich et al., 2010), which also showed that partners come to greater consistency. Thus, the methodology we developed allows us to capture the effect of social verification in making judgments in computer-mediated interaction, which opens up prospects for future research.

The second hypothesis assumed the influence of the confidence factor on the probability of response change. Let us first turn to the results of the analysis of response time and certainty / uncertainty reports in the group with direct confidence transfer. Response time was found to be related to confidence - the faster the response is given, the higher the probability of certainty report and vice versa (consistent with previous findings: Kiani, Corthell & Shadlen, 2014; Pulford et al., 2018; Vuillaume et al., 2020). This suggests that response time is an indirect way of conveying confidence in our chosen task.

As expected, in both experimental groups, the results showed that confidence conveyed in both indirect and direct ways was related to the likelihood of subsequently changing a response: those who were less confident or slower than their partner were significantly more likely to change their response. This is broadly consistent with previous studies of confidence heuristics (Pulford et al., 2018; Bang et al., 2014). In these works, the authors attempted to separate the ways in which confidence is communicated, distinguishing between verbal transmission and nonverbal transmission via facial expressions and gestures (Pulford et al., 2018), as well as post-hoc algorithms based on response times and explicit confidence ratings (Bang et al., 2014). However, to date, the factors of response time and explicit confidence ratings have generally not been isolated from each other in studies of synchronous computer-mediated communication (see, e.g., Pulford et al., 2018; Tikhonov & Moroshkina, 2023). In our study, we were able to experimentally separate these factors and show the influence of confidence heuristics in each condition.

Additional analysis of the EG-d results allowed us to separately test the contribution of the participant's own confidence and the partner's confidence to the probability of response change. The results showed that self-confidence was more important, as partner confidence was only taken into account when self-confidence was low. This is consistent with research suggesting that low confidence is a trigger for advice requests (Undorf et al., 2021; Pescetelli et al., 2021) and its acceptance (Tikhonov & Moroshkina, 2023; Carlebach & Yeung, 2023).

The third hypothesis aimed to examine the competence factor. Information about competence in our study was varied in a quasi-experimental way: after the first stage, participants saw a message about what was the percentage of correct answers they and their partner had. These results were used to determine which participant was more competent in their pair, and this variable was included in the analysis. In summary, we were unable to document a relationship between the partner competence score and the likelihood of response change, although earlier studies have shown that advisor competence is one of the important predictors of acceptance (Harvey & Fischer, 1997; Bailey et al., 2022). This may be due to the fact that the difference in partners' accuracy rates was not too significant in the first stage (15% on average, corresponding to 4-5 responses out of 30 tasks). It is also possible that the way of informing participants of their partners' competence was not very valid and participants did not rely heavily on the information obtained. Nevertheless, we obtained results indicating that participants' competence factor was related to the extent to which they relied on the time of their initial response when changing it later. More competent participants were significantly less likely to subsequently change their fast responses than their slow responses. Since we found that the time of the initial response correlates with confidence in the response, this may mean that more competent participants are more focused on their confidence when deciding to change their response.

The fourth hypothesis was aimed at testing the "two heads are better" effect. It was found that in both groups, the average proportion of correct answers slightly increased after revision (by 2-3% on average), and the effect reached statistical significance in the group with direct confidence transfer. Previously, the "two heads are better" effect was obtained in some studies (Bahrami et al., 2010; Koriat, 2012) and not in others (Tikhonov, 2020; Gershkovich et al., 2010), which may be related to the type of tasks presented to the subjects. Importantly, the effect was significant only in the group with direct confidence transfer. A possible explanation could be that explicit confidence reports not only communicate information to the partner, but also help the individuals themselves to better understand where they are more likely to be wrong. It has previously been shown that people, although they can monitor their cognitive processes, do not use this capability in all situations (Goldsmith, 2016; Undorf et al., 2021). It seems that social interaction that provokes confidence explication may act as a trigger for more accurate metacognitive monitoring (see also the review by Moroshkina et al., 2023). An alternative explanation could be that success is enhanced not by increasing the accuracy of one's own confidence estimates, but by orienting to one's partner's confidence, which was easier to accomplish in the direct confidence transfer group (Bang et al., 2014). To test the proposed explanations, an additional study could be conducted with the introduction of a third group, in which participants would also make an estimate of their own confidence in the answer, but only the message of response speed would be broadcast to the partner. Comparison of the results with the data of the conducted study will allow us to assess which factor contributes more to the improvement of judgment accuracy: the need to explicitly assess one's own confidence or to receive an explicit assessment of the partner's confidence. Thus, our results raise new questions for future research.

Conclusion

The results of our experiment confirmed that partners making joint decisions in computer-mediated interaction use social verification, i.e., comparing one's own judgment with the partner's opinion. It was shown that in the absence of objective feedback, participants are oriented toward matching answers with their partner and are more likely to change answers that do not match. Confidence conveyed both indirectly (through reporting response ready time) and directly (through reporting confidence judgment) had a significant effect on the likelihood of changing a response, which is consistent with previous research. However, only in the group with direct transfer of confidence social verification contributed to an increase in accuracy of revised responses. Further research is needed to clarify the reasons for this effect and to test our proposed explanations.

At the same time, we did not manage to find the influence of the competence factor on the processes of social verification in making judgments. This can be explained by some methodological aspects of our experiment, as well as by the fact that the competence of the participants did not differ significantly in the selected dyads. Further research could include pre-tests to better target participant pairs and vary differences in competence.

Overall, we believe that the results obtained in our study can be generalized to a wide range of situations in which people make judgments based on general knowledge and share them in real time with other participants of similar social status and background.

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Author Contribution

Ekaterina Alekseevna Tolstova development of research methodology, preparation of the experiment program, data collection, data analysis, visualization of results, literature analysis, preparation of the text of the article, editing of the article.

Nadezhda Vladimirovna Moroshkina supervisor of the research, literature analysis and formulation of the research problem, development of the research methodology, data analysis, preparation of the text of the article, editing of the article.

Author Details

Ekaterina Alekseevna Tolstova – Student, St. Petersburg State University, St. Petersburg, Russian Federation; RINC AuthorID: 1211174; SPIN code RSCI: 3410-7603; ORCID ID: https://orcid.org/0009-0009-2341-8155; e-mail: 1207tea@gmail.com

Nadezhda Vladimirovna Moroshkina – PhD in Psychology, Senior Researcher, St. Petersburg State University, St. Petersburg, Russian Federation; WoS ResearcherID: H-3841-2015; Scopus Author ID: 57128586400; RSCI Author ID: 157210; SPIN code RSCI: 6358-1379; ORCID ID: https://orcid.org/0000-0002-4778-379X; e-mail: n.moroshkina@spbu.ru

Conflict of Interest Information

The authors have no conflicts of interest to declare.