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Mindfulness is detrimental to performance in computer-mediated interdependent tasks



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ABSTRACT

In today's organizations interdependent tasks (e.g., negotiations or group-decision makings) are often conducted with computer mediation. Two experiments examined whether mindfulness, known to improve face to face negotiations and decision makings, influences the performance in computer-mediated interdependent tasks. In Study 1, manipulated mindfulness led to a worse outcome in a simulated computer-mediated negotiation compared to a control group. In Study 2, induced mindfulness undermined the decision performance of dyads interacting via text-based computer-mediated communication compared to a no-mindfulness control group. At the same time attention to the social relation was higher in the mindfulness condition. Hence, mindfulness is detrimental to performing on interdependent tasks if interaction partners use it in computer-mediated communication, although it fosters attention to interpersonal relations. Implications for mindfulness research and for research on computer-mediated communication are discussed.

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1. Introduction

Computer-mediated communication (i.e., instant messaging or emailing) is an integral part of the means used to interact in today's work environments. For example, virtual teams whose members are working across geographic or organizational boundaries share and discuss information via computer mediation when they need to negotiate or come to joint decisions (Paul, Seetharaman, Samarah, & Mykytyn, 2004). Even face to face groups often fail to share, discuss, and integrate knowledge and thus their performance is below their potential (Hollingshead, 1996; Stewart & Stasser, 1995). In text-based computer-mediated communication, performance on interdependent tasks is even worse (e.g., Heninger, Dennis, & Hilmer, 2006; Robert, Dennis, & Ahuja, 2008).

Research suggests that mindfulness influences how well information is integrated in face to face interactions (Dane, 2011; Garland, Farb, Goldin, & Fredrickson, 2015; Langer & Moldoveanu, 2000). Moreover, it has been found that mindfulness improves performance in distributive face to face negotiations (Reb & Narayanan, 2014) and that it reduces biases in individual

decision-makings (Hafenbrack, Kinias, & Barsade, 2014). Mindfulness enfolds its positive impact best in dynamic or information-rich and thus confusing tasks and social environments (Dane, 2011; Parker, Nelson, Epel, & Siegel, 2015; Sedlmeier et al., 2012), and there is a body of evidence showing positive effects of mindfulness in dynamic and socially rich contexts (Hülshager, Alberts, Feinholdt, & Lang, 2013; Hülshager et al., 2014; Reb, Narayanan, & Chaturvedi, 2014; Reb, Narayanan, & Ho, 2013). However, there is also evidence for a negative impact of mindfulness in contexts where these features are not provided (e.g., false memory; Wilson, Mickes, Stolarz-fantino, Evrard, & Fantino, 2015).

Text-based computer-mediated communication is often not very dynamic and lacks social richness (Daft & Lengel, 1986; Sassenberg & Jonas, 2007). Therefore, the current research aimed to test whether mindfulness is beneficial to performance in computer-mediated negotiating and group decision-making or perhaps detrimental, considering the characteristics of this way of communication. Thereby, the current research is the first to test the impact of mindfulness on joint performance in computer-mediated interdependent tasks and, thus, it contributes to the understanding of task performance in computer-mediated communication and tests the impact of a mental state that may be not suitable in such situations, namely mindfulness.

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1.1. Mindfulness in the context of static task environments

Mindfulness can be defined as an enhanced attention to and awareness of a present reality or current experience (Brown & Ryan, 2003). In addition, it is often described as a state of consciousness which relates to a “wide attentional breadth” (Dane, 2011, p. 1001), in both external and internal processes (Brown & Ryan, 2003). As a consequence, information processing is also getting more extensive, which is supposed to come along with higher openness and enhanced sensitivity to unexpected outcomes (Dane, 2011; Garland et al., 2015).

In contrast to the numerous gains of mindfulness, it might also hinder focusing on tasks in environments where attentional breadth (which is inherent in mindfulness) does not lead to access to additional task related information but to the perception of irrelevant and potentially distracting information (Dane, 2011). In line with this notion, it has been demonstrated that trait mindfulness is positively related to individuals' performance in a complex dynamic and unpredictable task environment, but not to performance in tasks within a static and predictable task environment (Zhang, Ding, Li, & Wu, 2013).

1.2. The effects of mindfulness on interpersonal processes

The advantages of mindfulness are not restricted to a dynamic task environment, but they have also been demonstrated for social and relationship outcomes. Mindfulness is associated with better interpersonal outcomes (Sedlmeier et al., 2012) as it correlates with the quality of romantic (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007; Carson, Carson, Gil, & Baucom, 2007; Wachs & Cordova, 2007) and professional relationships (Reb et al., 2014). This might result from better interpersonal skills as for example better identifying the emotional state of another person (Winning & Boag, 2015). All in all, this suggests that mindfulness might direct the attention to social and relationship issues, which seems to be beneficial in many social situations such as negotiations where it is possibly useful to identify the emotional state of another person. And indeed, a brief mindfulness exercise improved the outcome of face to face negotiations (Reb & Narayanan, 2014). However, research on the impact of mindfulness has not yet tested what will happen when social cues are lacking and the impact of mindfulness on identifying others' emotional state cannot unfold its potential as in text-based computer-mediated communication. In these cases mindfulness will definitely not be beneficial. It might even be detrimental to performance, because broad attention (i.e., the search for external information but which is not available) might lead people to considering irrelevant and distracting information (e.g., internal information about irrelevant own states).

1.3. Overview of current research

Based on these considerations, we suggest that mindfulness might actually be detrimental to performance in computer-mediated negotiations or group decision-making. This is, because (a) the beneficial effects of mindfulness might not apply in these static task environments and (b) attention to interpersonal processes might occur only in socially rich media. We, thus, hypothesize that mindfulness reduces performance in computer-mediated interpersonal negotiations and group decision-making.

This prediction was tested in two studies using text-based computer-mediated communication. In Study 1, we investigated the influence of manipulated mindfulness on outcomes in a computer-mediated zero-sum negotiation with a simulated other person using a paradigm adapted from van Kleef, De Dreu, Pietroni, and Manstead (2006). Study 2 likewise tested the impact of

manipulated mindfulness on decision making quality in dyads using a chat for communication and a paradigm developed by van Kleef and van Knippenberg (2008). This selection of tasks allows for testing the impact of mindfulness on two types of task performance in interpersonal computer-mediated setting. In the negotiation performance the individual benefit achieved *against* the interests of the interaction partner is the indicator of performance, whereas in the decision making task joint performance *together with* the interaction partner is the indicator of performance. We clearly instructed participants to pursue the respective goal, as we aimed to test the impact of mindfulness on both types of performance in the social context. We expected mindfulness to undermine performance in both cases based on the rational outlined above.

2. Study 1: computer-mediated negotiation

2.1. Method

2.1.1. Participants and design

Fifty users of a library of economics at a German university (women = 27, men = 21, no gender indicated = 2; $M_{age} = 25.88$, $SD = 9.52$, range = 19–61 years) participated voluntarily and without receiving a compensation in an experiment with two conditions (mindfulness vs. control).¹

2.1.2. Procedure

The study was conducted in a room equipped with six computers. After provision of informed consent, participants were seated in front of a computer and randomly assigned to one of the experimental conditions. In the mindfulness condition, participants listened to an audio file instructing them to eat two raisins mindfully (e.g., “What is the consistency of a raisin? What is the taste on the tongue?”). This is a frequently used mindfulness exercise, applied in clinical as well as nonclinical settings and also in experimental research (Heppner et al., 2008; Hong, Lishner, Han, & Huss, 2011; Kabat-Zinn, 2003; Reb & Narayanan, 2014; Weger, Hooper, Meier, & Hothrow, 2012). After one guided round with a raisin, participants were asked to repeat the exercise on their own with a second raisin. Participants in the control condition filled in a Sudoku puzzle. The goal of a Sudoku is to fill a 9×9 Sudoku grid with digits, where each row, each column and each of the 3×3 quadrants may contain every digit from 1 to 9 only once. A medium-difficult Sudoku puzzle was chosen as a task on which participants could get on within the given time frame. Both tasks were comparable because they require some attention, but are not very energy consuming. At the same time, they clearly differed in the attentional scope: the mindfulness condition induced a broad attentional scope, whereas the Sudoku condition induced focused attention. In both conditions, participants were interrupted after 9 min and asked to continue with the negotiation task.

2.1.2.1. Negotiation task. The negotiation task was an adapted version of the paradigm from van Kleef, De Dreu, Pietroni, and Manstead (2006), which is characterized by the main features of a real-life negotiation: For the negotiator, the issues to be negotiated are of different importance, he/she knows only about his/her

¹ The experiment included a third condition in which participants were to reflect about negotiations in general *before* receiving any information about the current negotiation task. This condition was not included into the analysis, because many participants were unexperienced concerning negotiations and reported difficulties in following the instruction. What they reflected about, has actually not become clear.

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