

Multicommunicating During Team Meetings and Its Effects on Team Functioning



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Abstract This research-in-progress examines the phenomenon of multicommunicating during team meetings (Meeting MC). Drawing upon social interdependence theory, multilevel theorizing, and research on multitasking, we examine the positive and negative effects of Meeting MC on individual team members' reactions, as well as on team processes and team outcomes. We propose a two-phase experimental approach to investigate the individual-level affective, cognitive, and behavioral responses in other team members, as well as the how these individual-level effects of Meeting MC spill over and affect team-level functioning and performance. This research advances our understanding of Meeting MC and how it affects individuals and groups. It also provides guidelines to managers and decision makers to leverage the beneficial aspects of Meeting MC while limiting and mitigating its detrimental effects.

Keywords Multicommunicating · Team meetings · Meeting MC · Team processes · Team performance · NeuroIS · Physiological measures

1 Introduction

Workplace teams are increasingly popular and have become one of the main structures used to perform organizational work [1, 2]. Team research has shown that effective team performance is largely determined by the processes team members use to interact with one another in order to achieve their goals [3, 4]. Our research-in-progress focuses on team processes performed within the context of meetings,

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© Springer Nature Switzerland AG 2020
F. D. Davis et al. (eds.), *Information Systems and Neuroscience*,
Lecture Notes in Information Systems and Organisation 32,
https://doi.org/10.1007/978-3-030-28144-1_3

defined as “communicative event[s] involving three or more people who agree to assemble for a purpose ostensibly related to the functioning of an organization or group” [5]. Meetings are a ubiquitous team tool that can benefit team members [6, 7], but they can also be detrimental to individual wellbeing and team effectiveness [8, 9].

Meeting Multicommunicating (Meeting MC) is one key behavior that can influence meeting effectiveness. It is defined as “being simultaneously engaged both in an organizational meeting and in one or more technology-mediated secondary conversation(s)” [10]. Meeting MC can involve various forms of secondary conversations such as texting, checking email, or mobile phone use during face-to-face or technology-mediated meetings [6, 11–16]. While evidence from neuro- and cognitive psychology research shows the task performance detriments associated with multitasking [17–19], the consequences of Meeting MC are expected to be more complex because individuals engage not only in secondary tasks, but must also balance “different media, conversations, and communication partners” [20].

Our research examines secondary conversations that occur with others who are outside of the meeting. This type of Meeting MC is quite common and is often used for conversation leveraging (gathering information in the secondary conversations to serve the meeting) [21]. Extant research has shed light on the effects of MC on individual outcomes [20, 22]. Our study complements this research by focusing on how the actions of a person engaged in multiple conversations during a meeting (herein termed the MCer) affect other team members and team processes and performance. We address the following research questions: (i) how do Meeting MC trigger individual-level affective, cognitive, and behavioral responses in the other team members in the meeting who are not engaging in Meeting MC?, and (ii) how do these individual-level effects spill over and affect team-level functioning and performance? Given the complexity of Meeting MC outlined above, we leverage multiple theoretical frameworks to address this phenomenon, namely social interdependence theory, multilevel theorizing, and research on multitasking.

2 Theoretical Development

The basic premise of social interdependence theory is that the goal structure of a team determines how team members will interact, which in turn influences the outcomes of the situation [23–25]. Teams with congruent goals tend to exhibit “effective” actions that promote perceptions of joint goal achievement. Alternatively, teams with incongruent goals tend to display “bungling” actions and self-interested behaviors that decrease perceptions of joint goal accomplishment [24, 25].

A team’s goal structure and its effective and bungling actions influence team functioning through three processes, namely cathexis, inducibility, and substitutability. Cathexis refers to the willingness to invest psychological energy in others. Inducibility refers to one’s willingness to be influenced by others [24]. Substitutability is the degree to which one’s actions can be performed by other members [24].

In our research, social interdependence theory is applied to the Meeting MC context, in which an MCer is simultaneously working toward multiple goals (e.g., being involved in a team meeting while also engaging in a secondary conversation). Congruent Meeting MC refers to situations where the MCer is engaging in a secondary conversation that is pertinent to the meeting goals [10, 26]. Incongruent Meeting MC refers to situations where the secondary conversation is unrelated to the meeting goals (e.g., pertaining to another work project, a personal issue, etc.). A third option also exists, with the goal congruence of the Meeting MC being unknown to the other team members. Unknown goal congruence—while not covered by social interdependence theory—is practically important to examine, as other team members do not always know the content of the MCer’s secondary conversations [22].

2.1 Individual-Level Effects of Using Meeting MC

We propose that Meeting MC can induce affective, cognitive, and behavioral responses in the other team members and that many of these responses will differ based on the goal congruence of the Meeting MC. Additionally, we propose that Meeting MC can have negative effects on the other team members through distraction, and this effect will exist regardless of goal congruence.

Specifically, we predict that congruent Meeting MC will lead to positive affective responses in the other team members, as the MCer is bringing new relevant information to the meeting. Congruent Meeting MC also induces cognitive responses in the other team members, such as increasing the other team members’ perceptions of the MCer’s capabilities and motivation. Thus, we expect that they will invest more psychological energy in their relationships with the MCer (cathexis), particularly in terms of willingness to work with the MCer on subsequent tasks and to help the MCer as needed (e.g., directing prosocial behaviors at the MCer). Further, through inducibility, other team members are expected to develop higher levels of trust towards the MCer. Finally, through substitutability, goal congruent Meeting MC will be perceived by other team members as evidence that the MCer is working toward the common good. Consequently, other team members will be more likely to feel ownership of the MCer’s teamwork tasks, and thus more willing to adapt and shift roles with the MCer as needed.

Whereas incongruent Meeting MC may be considered an effective action by the MCer, it would be perceived as a bungling action by the other team members. This is because the MCer is focusing on their own productivity rather than contributing to the joint goals of the team. Thus, incongruent Meeting MC will lead to other team members experiencing negative affective responses (e.g., feelings of frustration or anger). Cognitively, the other team members may perceive the MCer as rude [21] and unprofessional. Hence, related to cathexis, we would predict lower willingness to work together and to help the MCer, as well as less prosocial behaviors and more counterproductive behaviors targeted at the MCer (e.g., incivility or aggressiveness). Through inducibility, other team members are expected to develop lower level of trust

towards the MCer. They are less likely to be influenced by the MCer, which reduces the MCer's influence on team discussions and meeting outcomes. Finally, goal incongruent Meeting MC would reduce substitutability, with other team members being less willing to adapt their work roles to emerging needs of the MCer.

With unknown goal congruence, social interdependence theory does not help us to understand the effects of Meeting MC on other team members' responses. However, the fundamental attribution error [27] would suggest that when the content of the MCer's secondary conversations are unknown, other team members might make internal attributions and therefore judge the MCer more harshly than when the goals are known to be congruent. Preliminary results of one of the authors' pretest video vignette studies support this proposition. Thus, Meeting MC with unknown goal congruence may engender generally negative responses in the other team members (decreased interest, increased perceptions of rudeness, decreased trust, and decreased prosocial behaviors to help the 'important' MCer), similar to those associated with goal-incongruent Meeting MC.

Drawing upon the multitasking literature, we argue that Meeting MC will also have a negative distraction effect that will materialize irrespective of goal congruence. Meeting MC, much like any form of multitasking, reduces task processing efficiency and effectiveness [2, 11, 28, 29]. Whereas these negative outcomes occur due to attention switching and directly affect the MCer, we argue that the other team members will also be influenced negatively via a distraction effect. Regardless of goal congruence, meeting participants can become distracted by the activities of the MCer (e.g., wondering what the MCer is doing and whether it is meeting-related). This effect is consistent with evidence from the literature on multitasking in the classroom, which shows that laptop usage by a student distracts others around them [30]. We predict that these distractions negatively influence the quantity and quality of information contributed to the meeting by the other team members.

2.2 Team-Level Effects of Using Meeting MC

Our research will examine how the individual-level effects of Meeting MC spill over to influence team-level outcomes. We posit that Meeting MC will influence team outcomes via two types of emergence processes: dynamic interactions between team members during the meeting [31, 32] that affect intra-team trust (an inducibility-related construct) and team adaptation (a substitutability-related construct) and emotional contagion processes [33] that affect team cohesion (a cathexis-related construct).

Meeting MC may trigger dynamic interactions that shape a team-level response to the behavior [cf. 31, 32]. For example, a team member who notices incongruent Meeting MC may aggressively challenge the MCer by questioning why they are engaging in secondary conversations or asking them to stop the behavior. Such conflicts can affect both the degree and emergence of intra-team trust [34]. Intra-team trust represents the shared generalized perceptions of trust among team members

[35]. The nature of emergence of this construct follows a direct consensus compositional model [36]. Also, the referent in our case is a specific team member, namely the MCer, rather than the team as a whole [34].

Furthermore, Meeting MC may influence team adaptation, a substitutability-related construct defined as adjustments to relevant role configurations in the team in response to unforeseen changes [28]. We posit that team adaptation will increase by both congruent and incongruent Meeting MC. For congruent Meeting MC, the increased individual willingness to adapt will emerge to the group level through a compositional process [37]. Team members will develop a shared responsibility to help with the MCer's teamwork tasks and create adaptive mechanisms to recalibrate who performs what task. For incongruent Meeting MC, we expect a cross-level effect on team adaptation. Team members are likely to react to the MCer's actions by redesigning their roles and withholding responsibility from the MCer as a punitive act [38]. Hence, the team will reconfigure their roles and structures to take over responsibility from the MCer.

Meeting MC may also influence team outcomes via less overt social processes. More specifically, emotional contagion research indicates that individuals can transmit their affective experiences [e.g., 33] and stress perceptions to others, along with their accompanying subjective feelings [39]. Thus, we predict that individual affective reactions of specific team members to Meeting MC will spill over to influence the affective experiences of other team members [40]. For example, one team member might notice and become annoyed by the MCer's incongruent Meeting MC. This feeling of annoyance (although not necessarily its cause) may be expressed and transferred implicitly (e.g., through facial or vocal gestures that get mimicked). Positive feelings (e.g., excitement) elicited by goal congruent Meeting MC can similarly be transmitted via contagion. These emotional contagion processes are likely to influence team cohesion, which is defined as "the extent to which group members are socially integrated, possess shared feelings of unity, and are attracted to the group and each other" [6]. We propose that Meeting MC will influence all three facets of team cohesion, namely task cohesiveness, interpersonal cohesiveness, and team pride [7]. We expect that the emergence of these affective and cognitive responses has an isomorphic nature, meaning that individuals contribute a similar type and amount of elemental content to the group [41].

The final team-level outcome we examine is meeting effectiveness. Existing multitasking literature would suggest that engaging in multiple tasks during a meeting would negatively influence meeting effectiveness by increasing the quantity of information processed, causing dual task interference, and reducing the quality of the team's decision [e.g., 29]. Multicommunicating research further suggests that goal congruence plays a role. Through the relevant new information that the MCer brings to the meeting, goal congruent Meeting MC should increase meeting effectiveness [10]. We argue that the effects are more complex due to both the dynamic interactions and team outcomes (team cohesion, intra-team trust, and adaptation) outlined above. For example, whereas Meeting MC may negatively impact meeting effectiveness due to the distraction effect, goal-congruent Meeting MC may increase team cohesion and ultimately reshape the dynamic interactions and team performance.

In sum, our research suggests that dynamic interactions and emotional contagion are important processes that will translate the individual-level effects of Meeting MC into team level outcomes such as team cohesion, intra-team trust, and team adaptation. Further, these will have implications for overall team meeting effectiveness.

3 Proposed Methodology

A two-phase experimental approach will be used to investigate the effects of Meeting MC on team functioning and performance. Phase I will focus on the individual-level affective, cognitive, and behavioral responses in other team members. Phase II will explore how these individual-level effects of Meeting MC spill over and affect team-level functioning and performance.

In Phase I, three-person experiments using a hidden profile paradigm [42] will be employed in which each team member receives unique information, all of which will be needed to produce an optimal team decision during the meeting. In the first experimental condition, all team members in the control condition will be asked to focus on the meeting exclusively (condition 1: control group). In other groups, one participant in each team will be given a series of secondary tasks to complete during the meeting. These secondary conversations will occur via text message with a research assistant who is outside of the meeting. Some of these secondary conversations will be goal incongruent (condition 2: unrelated content), while others will be goal congruent (condition 3: information that is needed to make the optimal team decision). In conditions 2 and 3, other team members will be explicitly made aware of the goal congruence of the secondary conversations. To increase ecological validity, participants will bring their own text-enabled smartphone to the experiment. Meeting effectiveness will be measured by comparing the team's decision to the optimal decision. Post-meeting questionnaires using existing scales will be used to examine individual-level outcomes such as each individual's willingness to work with the MCer in the future.

Phase II will use the same three-person hidden profile experiments to examine how the individual-effects of Meeting MC influence the team's dynamic interactions and team-level outcomes. Phase II will have the same three conditions as Phase I; however, the experimental sessions will be longer, allowing time for the dynamic interactions to unfold during the team meeting. In addition, other team members will not be explicitly made aware of the goal congruence of the secondary conversations. Using one camera per participant, the meetings will be recorded and manually coded after the experiment to capture the dynamic interactions that occur during the meeting. Coding of the verbal statements during the meeting will occur using the INTERACT software and Advanced Interaction Analysis [act4team[®], e.g., 43], which includes four main categories of interaction (problem-focused, procedural, socioemotional, and action-oriented statements). These interaction categories are then further subdivided in multiple sub-categories. Phase II will enable us to identify

the dynamic processes that follow Meeting MC and their subsequent impact on team functioning and performance.

Table 1 summarizes the individual- and team-level outcomes of the study. As illustrated in the Table, we plan to use neuro-physiological measures to complement the traditional psychometric measurement for several of the key variables [44]. The reasons for this are to provide converging evidence, alleviate subjective biases, and provide complementary insights into the findings. To capture nuanced affective responses and stress of other team members in reaction to Meeting MC, each participant will have one mobile wrist unit to measure electrodermal activity. Physiological tools will be used (e.g., face reader to capture emotion, skin conductance to capture stress, and wearable eye trackers to capture participant gaze) during the meeting. In terms of prosocial attitudes and behaviors (a measure of cathexis), Volk and Becker [27] suggested that how people react to and behave toward others (especially prosocial behavior) is determined by their perceptions of the fairness of others’ behaviors. These fairness perceptions produce prepotent response tendencies (automatized response patterns that support pro-social attitudes) that can be measured through skin conductance [30] or by tracking activity in the brain’s limbic system [e.g., 45, 46]. Similarly, for the inducibility mechanism, neuro-physiological measures of trust will be developed. IS studies used fMRI to map the different individual trust dimensions to different areas of activation in the brain [47, 48]. Others have called for applying EEG to study trust mechanisms [49].

At the team-level of analysis, we seek to assess the neural correlates of team cohesion. Research in social neuroscience—while still in the early stages—has suggested that team processes such as team cohesion can be measured by mapping brain activity configurations: “it may be possible to compare configurations of brain activity patterns across teams to see which configuration might be associated with more cohesion, including the excessive cohesion that accompanies groupthink, as well as conflict in teams.” [50, p. 287]. Others have echoed the need to use neuro-physiological

Table 1 Measurement of the key outcomes

Level of analysis	Outcomes	Measures	
		Psychometric	Neuro-physiological
Individual level	Stress and affective reactions of other team members	X	X
	Willingness to work with MCer (cathexis)	X	X
	Trust (inducibility)	X	X
	Willingness to adapt (substitutability)	X	
Team level	Team cohesion (cathexis)	X	X
	Intra-team trust (inducibility)	X	X
	Team adaptation (substitutability)	X	
	Meeting effectiveness	X	X

measures of team cohesion—including skin responses and EEG [51]—and aggregating the individual belief measures to form a statistical score that represents a shared belief [52]. For intra-team trust, there is preliminary evidence indicating that measuring the synchrony of the heart rate profiles of team members could be used to assess the building of team trust [53].

Finally, our research operationalizes meeting effectiveness as the quantity of information processing (number of pieces of new information assimilated by the team) and the team's decision quality [29]. Neuro-physiological tools will shed more light on these objective outcomes. Specifically, it will be used to determine whether shortcomings in the quantity of information used is due to lack of attention by the team or deliberate discounting of the information provided by the MCer.

4 Contributions and Conclusion

The present research-in-progress is expected to provide important theoretical and practical contributions. It advances our understanding of the positive and negative effects of Meeting MC on individual team members' outcomes and on team processes and performance. Our research will also provide practical contributions that enable managers and decision makers to leverage the beneficial aspects of Meeting MC while limiting and mitigating its detrimental effects.

Our hope is to benefit from the Neuro IS workshop by engaging with the Neuro IS community and getting feedback on how to execute our research in a way that provides accurate physiological measures of team members' reactions to Meeting MC.

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