ELECTRONIC MULTITASKING DURING WORKPLACE MEETINGS: WHY DO EMPLOYEES DO IT?

by

Eleanor Bliss Williams

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Approved by:

_____
Dr. Steven Rogelberg

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Dr. Linda Shanock

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Dr. John Kello

_____
Dr. Cliff Scott

ABSTRACT

ELEANOR BLISS WILLIAMS. Electronic Multitasking During Workplace Meetings: Why Do Employees Do It? (Under the direction of DR. STEVEN ROGELBERG)

Employees are increasingly engaging in electronic multitasking during workplace meetings, as the proliferation of technology is on the rise. Though electronic multitasking is common and potentially harmful to meeting effectiveness because it distracts individuals from achieving meeting goals, research in the organizational sciences is limited and largely atheoretical. Thus, the current study leverages the counterproductive work behavior framework to better understand why employees engage in electronic multitasking and also its relationship with individual/group meeting productivity. Data were collected from 406 working adults in a series of two surveys asking them about a recurring staff meeting they attend. Results suggest that there are both individual (i.e. conscientiousness) and meeting-oriented (i.e. meeting medium, norms for multitasking, and meeting size) predictors of electronic multitasking. Additionally, employee workload moderates several of these relationships; for example, highly committed employees/employees who perceive high levels of organizational justice were actually more likely to engage in electronic multitasking, which could suggest that they are electronically multitasking for worthy reasons (i.e. coping with their workload). However, the results also suggest a negative relationship between electronic multitasking and perceived individual/group meeting productivity, which points to the fact that this behavior is nuanced. Meeting leaders can use the results of the current study to learn how to carefully manage electronic multitasking during their meetings.

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DEDICATION

I would like to dedicate my dissertation to a few family members and friends who have supported me through my graduate school journey.

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INTRODUCTION

Meetings are pervasive in today's organizations. The statistics on workplace meetings are staggering: in 2015, the estimate for the number of meetings that took place was between 36 and 56 million every day (Keith, 2015). In addition to the sheer number of meetings, employees are also spending a great deal of time in workplace meetings; though there are various estimates, a conservative number is at least six hours per week (Rogelberg et al., 2006). This amount of time increases dramatically at higher levels of the organization, with senior managers spending over 75% of their time preparing for and attending meetings (Van Vree, 1999). There is also a large cost associated with these meetings: estimates indicate—using meeting time multiplied by the salaries of meeting attendees—that organizations spend up to 15% of their personnel budgets on meetings (Romano & Nunamaker, 2001).

A phenomenon that is also increasingly prevalent within these meetings is employees engaging in multitasking, with some estimates as high as 73% of employees multitasking in some manner during meetings (Pidgeon, 2014). Even though attendees are invited to meetings for their input or required attention, employees oftentimes do not give their full attention to the meeting and instead multitask. The focus of this study is on electronic multitasking specifically, which is defined as "the use of one or more communication technology devices [e.g. laptop, smart phone, tablet] during a face-to-face or mixed mode meeting" (Stephens & Davis, 2009, p. 66). Electronic multitasking is more pervasive now with the proliferation of technology in the workplace; many employees bring laptops, smartphones, and tablets to their meetings. Not only is electronic multitasking more common in the modern meeting, but some research shows it

can be negatively perceived by other attendees (Bajko, 2012), distracting to others (Sana et al., 2013), and thus suboptimal for the meeting overall. Though electronic multitasking during meetings is increasing and can potentially impact meeting productivity, scholarly research in this area, particularly within the organizational sciences, is lagging behind.

This study aims to fill two gaps in the meetings literature. First, researchers have thus far examined a very narrow set of predictors of multitasking in general, let alone meeting-specific multitasking, especially in the organizational science literature. Most of the research on this topic has taken place in the general psychology and education realms using cognitive psychology theories, which are largely not relevant to the workplace meeting; in the organizational sciences, the research is limited and largely atheoretical. Thus, in the current study, I will leverage the counterproductive work behavior (CWB) framework to empirically examine a wide range of individual and meeting-oriented predictors of electronic multitasking during meetings. Introducing the CWB framework not only provides structure for my research, but it also allows me to make a contribution to the meetings literature by introducing a framework to better understand why employees engage in this type of counterproductive behavior during meetings.

Second, in the majority of the organizational sciences literature, there is an inherent assumption that electronic multitasking during meetings is harmful for employees and organizations (e.g. Wasson, 2004; Stephens & Davis, 2009), but I question whether that is always the case. For example, if a manager has a high workload and is attending a meeting that does not require his/her full participation, it could be the case that answering work-related emails is a more productive use of time than fully participating in the meeting. As another example, if a conscientious employee is forced to

attend a recurring staff meeting each week that is poorly run, then he/she might engage in electronic multitasking in an effort to better use his/her time and stay on top of work tasks. Therefore, in this study I examine this assumption that multitasking during meetings is inherently negative; I do this by differentiating between two types of electronic multitasking. According to Yoerger et al. (2018), "pro-organizational" electronic multitasking refers to an employee multitasking by using technology to attend to other work-related responsibilities during the meeting (e.g. reading and responding to work-related email or working on other projects). "Self-interested" electronic multitasking, on the other hand, refers to technology use that is aimed at attending to personal objectives (e.g. surfing social media or texting friends/family). Although scholars studying multitasking have largely not made this distinction, I argue that these different forms of electronic multitasking likely have different correlates and that employees engage in both types of electronic multitasking in today's meetings. Furthermore, I also include more nuanced outcome variables, such as perceived meeting productivity for both individuals and the collective group, to better understand if these types of multitasking are differentially related to individual/group meeting productivity.

Theoretical Framework: Electronic Multitasking as a Counterproductive Work Behavior (CWB)

I argue that electronic multitasking during a workplace meeting can be considered a form of CWB. CWBs refer to voluntary employee behaviors that are viewed by the organization as contrary to its legitimate interests (Bennett & Robinson, 2000). There is a wide range of behaviors considered to be CWBs. The Counterproductive Work Behavior Checklist (Fox et al., 2001; Spector et al., 2004), which has been used and validated in

countless CWB studies, contains five subscales: production deviance, sabotage, theft, withdrawal, and abuse against others. Three of the subscales—production deviance, withdrawal, and abuse against others—contain items that are similar to electronic multitasking during workplace meetings. Production deviance, made up of three items, is "the purposeful failure to perform job tasks effectively the way they are supposed to be performed" (Spector et al., 2006, p. 449). The items include purposefully doing work incorrectly, working slowly when things need to get done, and failing to follow instructions. Electronic multitasking during a meeting, whether it is the pro-organizational or self-interested type, involves an employee not participating in a meeting in the way that is expected, thus behaving "incorrectly" and failing to follow instructions from the meeting leader. Another subscale is withdrawal; it is made up of four items, consisting of "behaviors that restrict the amount of time working to less than is required by the organization" (Spector et al., 2006, p. 450). Although most of the items refer to employee lateness or absenteeism (e.g., coming to work late without permission, staying home from work and saying you were sick when you were not, taking a longer break than you were allowed, and leaving work earlier than you were supposed to), electronic multitasking during a meeting could be considered a type of withdrawal behavior because it takes away from the amount of time an employee spends on meeting-related tasks (e.g. following along with the agenda, contributing to the meeting discussion, etc.). Finally, the "abuse against others" subscale contains items consisting of harmful behaviors that can harm coworkers physically or psychologically, with items referring to "ignoring coworkers and undermining others' ability to work effectively" (Spector et al., 2006, p. 448). Engaging in electronic multitasking during meetings could have a negative impact

on others, since research shows that it can be distracting and detract from others' ability to work and participate in meetings efficiently (e.g. Sana et al., 2013).

CWBs have been classified into subcategories using several different, though not necessarily conflicting, schemes (Spector & Fox, 2002). Bennett and Robinson (2000) presented a comprehensive typology with two dimensions to classify deviant actions. The first dimension refers to severity, whereby behavior can range from minor to severe; electronic multitasking during a meeting could be considered a more minor act, whereas theft or aggression towards coworkers would be more severe. The second dimension refers to the target of the CWB: whether the behavior is directed towards other individuals/teammates (i.e. interpersonal deviance) or the organization (i.e. organizational deviance). Electronic multitasking during a meeting, though it may impact other attendees, would be considered organizationally directed deviance since it is not intentionally directed at other individuals and is more of a withdrawal behavior, akin to lateness. CWBs have also been subcategorized into aggressive and passive acts. Aggressive or active behavior is directed immediately at the target (i.e. yelling at a supervisor), while passive behavior involves more inactive or withdrawal behaviors (i.e. failing to follow instructions or withholding performance; Spector & Fox, 2002). Although some attendees are fairly obvious when they engage with their device(s), electronic multitasking—whether it is pro-organizational or self-interested in nature—would be considered a more passive act, rather than an aggressive act resulting in immediate punishment. Overall, given how CWBs are classified and operationalized in the literature, electronic multitasking can be considered a form of this type of behavior

since it is an organizationally directed, voluntary behavior that is contrary to the interests of the meeting.

In terms of the predictors of CWBs, the seminal paper on the CWB framework by Fox et al. (2001) describes how environmental and personal factors—stressors—lead to CWB(s) through processes of perception and emotion activation. The process that is described by this model begins with the work environment; as people go about their work lives, events and situations—labeled as stressors—provide stimuli that are perceived and appraised. If these stressors are perceived negatively, they induce negative emotions, which can produce CWBs (positive emotions can result in organizational citizenship behaviors). Following the work by Fox et al. (2001), researchers have since refined the CWB model and added more specificity. For example, Penney and Spector (2005) defined a set of stressors—many of which are relevant for the current study—that can lead to CWBs such as role ambiguity, role conflict, workload, organizational constraints and interpersonal conflict. Other work has focused on the relationships between CWB and personality (Bolton et al., 2010; Bowling & Eschleman, 2010), OCBs (Dalal, 2005), and other work stressors (Meier & Spector, 2013).

O'Boyle et al. (2011) introduced an updated, multifaceted perspective on predictors of CWBs that I adopt for this study. Their work is consistent with the Fox et al. (2001) model in that it retains the affective and cognitive processes as the mechanisms that cause CWBs, but also acknowledges that these emotions and cognitions are affected by factors at multiple levels. This multifaceted approach offers insight into cases "in which individuals who are known to be of good moral character engage in inappropriate behavior" in certain groups or situations, which could be the case with someone

multitasking during a workplace meeting. Studying employees' perceptions of predictors that exist at different levels also acknowledges that employees are influenced by the group—or in my case, workplace meeting—which is important in the organizational science literature (Maas & Hox, 2005).

Now that I have explained how the CWB framework is theoretically relevant to studying electronic multitasking during workplace meetings, I turn to the existing literature on multitasking to give an overview of the correlates that have been examined and explain how the current study moves beyond the existing research.

Perceptions of Electronic Multitasking

Much of the applied research on electronic multitasking comes from educational scholars. One focus of educational scholars is perceptions of electronic multitasking in the classroom: Campbell (2006), for example, found students support policies for restricting the use of phones during class. However, there were some important moderators: younger participants reported less support for restricting phones in classrooms and more tolerance for phones ringing during class. Also, those who had a longer history of cell phone ownership and those who were heavy users were more in favor of allowing multitasking using cell phones, as compared to recent adopters and/or light users. In a similar study about perceptions of electronic devices in the classroom, Baker et al. (2012) found that faculty and students differed greatly in their opinions of whether multitasking using various technologies in the classroom (e.g. laptops, cell phones, and MP3 players) was acceptable. In almost every instance, faculty perceptions differed from student perceptions, with students believing technology use is more appropriate.

Electronic Multitasking and Performance

In addition to researching perceptions of electronic multitasking, educational scholars have also investigated the potential impact of multitasking in the classroom on students' performance. Hembrooke and Gay (2003) performed an experiment in which they allowed one group of students in a classroom to use a laptop and the other group, which served as the control, could not. The results showed that those students with laptops were more likely to multitask and they performed poorer on immediate measures of memory of class content. This study was one of the few in the literature to distinguish between class-related and personal electronic multitasking. In follow-up analyses, they found that "relevant," class-related multitasking, such as browsing webpages that are related to the lecture topic, did *not* predict better test performance, as compared to those students who were on social media, playing games, etc. They concluded that memory decrement in multitasking situations is the result of the proportion of time drawn off task, regardless of whether the off-task time is relevant or not.

Furthermore, Wurst et al. (2008) also showed that electronic multitasking had a negative relationship with test performance. In addition, they found laptop use had a negative relationship with student satisfaction: that is, students who were assigned to use laptops were not any more satisfied with their education as compared to those who did not use laptops throughout the semester. In another study on electronic multitasking in the classroom, Sana et al. (2013) focused on the impact electronic multitasking can have not only on the individual who is multitasking, but also on those around that individual. They found, using a field experiment in a classroom setting, that comprehension was impaired for participants who were seated surrounding peers that were using their laptops

during class. Interestingly, those engaging in electronic multitasking were largely unaware that their behavior would affect others; a survey after the experiment showed that participants in the laptop condition were aware that their multitasking would "somewhat hinder" their own learning, however, they estimated peers' learning would be "barely hindered." In actuality, the observed effect from peer distraction due to the laptop use was nearly twice as large as observed self-distraction effect size.

Although the aforementioned studies on the perceptions of electronic multitasking and its impact on performance are from the education literature, I argue that the classroom setting is similar to a meeting. In both classes and meetings, there is a leader disseminating knowledge, attendees are there to gain information that is relevant to their success, and there are increasingly more technological devices present in both settings that can impact both the individuals and the group.

Electronic Multitasking in Workplace Meetings

Even though organizational scholars have noted, "virtually everyone who has attended a meeting at work has engaged in activities not directly related to the meeting…people can now use portable devices to engage in nonmeeting activities," (Stephens & Davis, 2009, p. 64) the research in the meetings literature on electronic multitasking during workplace meetings is limited. There have only been a handful of studies in the last decade or so to specifically focus on electronic multitasking during workplace meetings that have been published in peer-reviewed journals.

Similar to research done by education scholars, research on electronic multitasking in the organizational sciences largely falls into two categories: the perceptions of the behavior or its relationship to select predictors and performance. In

terms of how multitasking is perceived in workplace meetings, Bajko (2012) investigated the attitudes towards technology use and found that a majority of participants used a laptop during meetings regardless of who is present in the meeting, and that laptops were most positively perceived (75.2% of participants somewhat agreed or agreed that it is reasonable to use a laptop during a meeting), while smartphones were least positively perceived (only 37.9% somewhat agreed/agreed that it is reasonable to use a smartphone during a meeting) by other attendees. Interestingly, the results also show that a majority of participants who were engaging with their devices believed their electronic multitasking was productive and socially acceptable. That is, there was a dichotomy between those engaging in the multitasking and those other attendees who were observing the multitasking, regardless of whether the multitasking was pro-organizational or self-interested in nature. On the other hand, another study by Washington et al. (2013) focused on perceptions of using technology—in this case they focused on cell phone use for personal objectives specifically—to multitask during meetings. The results showed that participants agreed or strongly agreed that making a call (87%), writing and sending texts or emails (84%), checking texts or emails (76%), and browsing the Internet (75%) were seen as "unacceptable" forms of multitasking in formal meetings.

With regards to research examining the correlates of electronic multitasking during workplace meetings, Wasson (2004) examined predictive factors of multitasking in an ethnographic study. The author presented five predictors of electronic multitasking, which she defined as "simultaneously participating in the meeting and engaging in at least one other activity unrelated to the meeting" (p. 54): lack of visual access, personal technological skill, the type of "competing" activity, level of urgency of the competing

activity, and meeting topic relevance. The author also discussed the potentially positive outcomes that can come from electronic multitasking, saying in part, "employees who multitask are usually putting in an extra level of effort, not wasting time" (p. 48). In another study on the correlates of electronic multitasking, Stephens and Davis (2009) focused on the social influence on employees engaging in the behavior. The authors found that social influences strongly predict how individuals electronically multitask during meetings; specifically, the strongest predictor of whether an individual chose to electronically multitask was observing others multitasking using their devices. Participants' perceptions of how socially acceptable electronic multitasking is during meetings was also a significant, strong predictor of multitasking, which further highlights the importance of social influence and group/organizational norms in predicting electronic multitasking.

Furthermore, in another study by Stephens (2012), which was focused on multicommunicating—a specific form of electronic multitasking whereby employees conduct multiple, nearly simultaneous conversations using information and communication technologies (Reinsch et al., 2008)—the author found that this type of electronic multitasking can result in poorer quality decisions and rushed conclusions due to excessive cognitive load used in trying to communicate with multiple parties. However, Stephens (2012) also noted the potential benefits to multicommunicating as well. For example, employees can be more available to multiple colleagues when they multicommunicate (i.e. by chatting with colleagues using the organization's messaging system, or by texting/emailing them), which can allow them to integrate information into the meeting discussion from diverse sources while also allowing them to efficiently deal

with issues that come up during the meeting (Cameron & Webster, 2013; Cameron et al., 2018).

Overall, while peer-reviewed research in the organizational sciences on this phenomenon has increased since Stephens and Davis defined the term "electronic multitasking" in 2009, it is still lacking in comparison to educational research on the topic. With regards to the research that *has* been done on electronic multitasking, much of it has been focused on either the perceptions of electronic multitasking or its effect on performance (mostly student test performance). Research on the predictors of electronic multitasking, specifically, is rare. Therefore, a primary goal of the current study is to leverage the CWB framework and integrate the meetings multitasking literature to better understand why employees electronically multitask during meetings. I also introduce different outcome variables, individual and group meeting productivity, so that I can not only begin to understand why employees multitask, but also the potential influence electronic multitasking has on the individuals engaging in it and also the collective group.

Hypotheses

According to the CWB framework introduced by O'Boyle et al. (2011), individuals who engage in counterproductive work behaviors, such as electronically multitasking during a meeting instead of contributing, do so not only because of individual-level characteristics, but also because of their perceptions of group-level characteristics as well (i.e. aspects of the meeting in the current study). Therefore, my first set of hypotheses examines the multifaceted factors that predict an employee's decision to engage in pro-organizational (i.e. work-related) and self-interested (i.e. non-work-related) electronic multitasking during meetings. More specifically, I examine the

following individual and meeting-oriented variables: conscientiousness, organizational commitment, job satisfaction, organizational justice, leader satisfaction, meeting medium, meeting norms for multitasking, and meeting size; as I explain in the rationale leading up to each hypothesis, these variables are consistent with previous CWB literature and also previous research on multitasking during meetings.

Predicting self-interested electronic multitasking. Sometimes during workplace meetings, attendees start browsing social media, texting friends and family, playing games on their smartphone or laptop, or otherwise engaging in self-interested multitasking behavior that does not further individual or organizational goals. Unlike pro-organizational multitasking, which can at least have some benefit to the productivity of the individual, self-interested multitasking would appear to be purely counterproductive behavior since there are no organizationally positive outcomes (e.g., getting work tasks done) and it is taking away from their focus on the meeting. In these instances, according to the CWB framework, there are environmental and personal factors that lead to self-interested electronic multitasking (Fox et al., 2001).

Individual-oriented predictors of self-interested electronic multitasking. Conscientiousness reflects dependability; that is, being careful, thorough, responsible, organized, and planful (Barrick & Mount, 1991). CWB research shows a negative relationship between conscientiousness and engaging in counterproductive behaviors (Dalal, 2005; Bowling & Eschleman, 2010). Authors explain that conscientiousness involves a general tendency to follow ethical principles, which makes conscientious employees unlikely to engage in CWBs (Bowling & Eschleman, 2010). Applying this line of thinking to the current study, conscientious employees are unlikely to engage in

self-interested electronic multitasking during a meeting given their tendency to act responsibly and engage in the meeting as an active participant.

Hypothesis 1. Conscientiousness will be negatively related to self-interested electronic multitasking.

A meta-analysis by Dalal (2005) showed negative correlations between several job attitudes and engaging in CWBs, including the ones I focus on in the present study (organizational commitment r = -.36, job satisfaction r = -.37, organizational justice r = -.25). To explain these relationships, the CWB literature draws upon the social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) to explain why certain job attitudes are related to engaging in counterproductive behaviors. Social exchange theory argues that behavior by one party in an exchange relationship engenders a felt obligation to respond in kind to the other party, conforming to the norm of reciprocity (Gouldner, 1960). When employees feel they are supported by the organization, they feel obligated to reciprocate by acting in ways that support the organization (i.e. showing commitment to the organization, increased job performance, etc.; Blau, 1964). On the other hand, as Sackett and DeVore (2001) wrote, "there is a certain poetry in behaving badly in response to some perceived injustice." Thus, also according to this theory, employees can also retaliate against dissatisfying conditions and unjust workplaces by exhibiting lower organizational commitment and job satisfaction along with engaging in behaviors that harm the organization and/or other employees (i.e. CWBs). I extend this logic to explain why affective commitment, job satisfaction, and organizational justice—specifically the distributive and procedural types of organizational justice, similar to other CWB research that has included these two types (Spector & Fox, 2002; Dalal, 2005)—

should have negative relationships with self-interested electronic multitasking: if employees are feeling low levels of affective commitment, job satisfaction, and organizational justice, then they are more likely to retaliate by not fully participating in workplace meetings and instead electronically multitask in an entirely unproductive, self-interested way.

Hypothesis 2a. Affective commitment will be negatively related to self-interested electronic multitasking.

Hypothesis 2b. Job satisfaction will be negatively related to self-interested electronic multitasking.

Hypotheses 2c and 2d. Organizational justice—specifically the distributive and procedural types—will be negatively related to self-interested electronic multitasking.

In terms of employees' perceptions of leadership as a predictor of counterproductive behaviors, research in the CWB literature has largely focused on abusive supervision and its relationship to subordinates engaging in CWBs. For example, work by Tepper et al. (2001, 2008) showed that abusive supervision is positively related to employees engaging in multiple counterproductive behaviors, such as theft, sabotage, withdrawal and lateness. Research suggests that the reason for this relationship is due to a "tit-for-tat" mentality, driven by social exchange mechanisms, such that perceived mistreatment evokes anger reactions and a desire to get retribution by engaging in counterproductive behaviors (Inness et al., 2005). In the current study, I do not focus on abusive supervision specifically, but rather employees' satisfaction with their leader and its relationship with engaging in self-interested electronic multitasking. Organizational

science research shows the crucial role that leaders can play in meetings. As Baran et al. (2012) explain, what "leaders do in group meetings they lead informs how what happens in a specific group process (the process of meeting) may influence outcomes both within and outside of the meeting" (p. 331). Furthermore, Leach et al. (2009) studied meeting aspects under the control of leadership that are associated with positive attendee ratings of meetings. They found that using an agenda, taking minutes, and starting and ending on time were key drivers of attendee satisfaction. Thus, similar to the work by Tepper et al. (2001, 2008) and Inness et al. (2005), Baran et al. (2012) and Leach et al. (2009) are suggesting that when employees feel positively about their supervisor in general, they are likely in exchange to give him/her their full attention during his/her meeting and not engage in multitasking. The opposite is likely true for employees who feel negatively about their supervisor: if an employee is not satisfied with his/her supervisor, then he/she might cope with those feelings by engaging in self-interested electronic multitasking.

Hypothesis 3. Leader satisfaction will be negatively related to self-interested electronic multitasking.

Meeting-oriented predictors of self-interested electronic multitasking. CWBs are deliberate actions that harm the group or organization. In some cases, these actions are performed by a single person alone, but in most cases, CWBs occur within a collective context, as is the case with electronic multitasking during a group meeting. Thus, employees' perceptions of meeting-oriented factors will likely also predict their likelihood to engage in self-interested electronic multitasking. In the current study, I focus on meeting medium, meeting norms for engaging in multitasking, and meeting size

as the contextual factors that predict higher levels of self-interested electronic multitasking.

Attendees who join a meeting virtually have a fundamentally different experience than they would have joining in-person. According to Clark and Brennan (1991), when there is a barrier between the interactional spaces in which the virtual meeting attendees participate, this encourages multitasking. That is, in face-to-face meetings, participants have full visual and auditory access to everyone, which creates one interactional space. In a virtual meeting, however, there are barriers between the local space (where someone is taking the meeting from) and the meeting space. This creates a lack of visual channel—unless it is a videoconference where every participant is participating via video, which is rare for virtual meetings—so attendees cannot see what is going on in others' local spaces. Also, there is a lack of auditory channel since virtual attendees usually keep themselves on mute until they need to participate. Thus, these barriers between interactional spaces can encourage electronic multitasking, so much so that participants can even get away with self-interested multitasking, since there is not usually any visual/auditory accountability (Clark & Brennan, 1991). O'Boyle et al. (2011) also echo the idea that when there are no organizational/group sanctions for committing CWBs, employees can more easily engage in these behaviors; they give the example of telecommuters who are not physically surrounded by others feeling "immune" to consequences, which is perhaps akin to a virtual meeting. Furthermore, this relationship between virtual participation and self-interested multitasking is echoed in the education literature as well: in a study by Burak (2012), the author found that students were more likely to multitask during online courses as compared to in-person courses. More

specifically, when asked what type of multitasking behaviors they engage in while they were doing online coursework, the students reported "cooking dinner, caring for children, playing with pets, and conversing with family/roommates," (p. 8) all of which are self-interested multitasking behaviors. Taken together, joining a meeting virtually, which creates interactional barriers, seems to allow participants to feel that self-interested electronic multitasking is permissible and will not result in negative consequences.

Hypothesis 4. Virtual attendance will be associated with higher levels of self-interested electronic multitasking, as compared to in-person attendance.

Norms are mutually agreed-upon standards, often unspoken, that describe what behaviors should and should not be performed in a given context (Feldman, 1984). As O'Boyle et al. (2011) explain, norms provide individuals with information about what types of behaviors are expected in a given situation and those that will likely result in negative sanctions, increase cognitive clarity, and reduce uncertainty. Groups often take steps to increase members' conformity to norms, and therefore an individual who does not comply with the norms—even norms that encourage CWBs—may be pressured or bullied. Extending this logic to the meetings context, Stephens and Davis (2009) found evidence that social influences, in the form of observed behaviors and perceptions of others' beliefs about electronic multitasking, are norms that strongly predict individuals' likelihood to engage in the multitasking. Therefore, if it is socially acceptable to engage in self-interested electronic multitasking during a meeting, then employees who perceive this behavior as normative are more likely to engage in the behavior themselves. Overall, I hypothesize that self-interested electronic multitasking could become normative in a staff meeting, thus resulting in employees engaging in it without consequence.

Hypothesis 5. Employees who perceive that engaging in self-interested electronic multitasking is acceptable in their recurring meeting will increase their own self-interested electronic multitasking behaviors.

Prior research shows that meeting size can influence meeting outcomes and the employees within the meeting (Cohen et al., 2011; Cameron et al., 2018). One of the reasons that meeting size matters is because larger meetings can have higher levels of social loafing. In a meta-analysis done by Karau and Williams (1993), the authors explain that social loafing occurs because individuals expect their effort to be less likely to lead to valued outcomes in a collective group as compared to working as individuals. Therefore, in a large workplace meeting, attendees feel they can get away with not fully participating in the meeting because they think there are likely enough other attendees to carry the burden of accomplishing the meeting goals. This idea is supported by the work of Leach et al. (2009), who found that meeting size was negatively related to attendee involvement; that is, the larger the meeting, the less employees participated. Since individuals do not feel a need to participate, they might feel free to engage in self-interested electronic multitasking. Furthermore, group decision-making research has shown that group size alters group processes and performance (Ingham et al., 1974); larger groups have greater coordination needs and can also have reduced involvement from individuals (Gladstein, 1984). Thus, when a meeting is overly large, employees might feel that their effort and participation is undervalued. This lack of consideration that employees feel when invited to such a large meeting could result in an employee reacting negatively and instead engaging in social loafing behaviors, such as self-interested electronic multitasking.

Hypothesis 6. Meeting size will be positively related to self-interested electronic multitasking.

Predicting pro-organizational multitasking. Sometimes during a meeting, employees electronically multitask by sending an email to a colleague, work on completing another project, or chat with colleagues outside the meeting about something work-related. These types of behaviors, in contrast to self-interested electronic multitasking that is unproductive, are considered to be pro-organizational electronic multitasking (Yoerger et al., 2018), due to the fact that they have some benefit to the organization. Since meeting attendees are expected to actively participate/engage in the meeting they were asked to attend and research shows that multitasking has negative effects on others, pro-organizational electronic multitasking during a meeting is still considered to be counterproductive behavior (Yoerger et al., 2018). However, I posit that whether pro-organizational multitasking functions as a true CWB depends on two conditions: satisfaction with the meeting and the workload of the attendee engaging in the electronic multitasking. That is, in the cases when someone is attending a good, well-run meeting or does not have a lot of work to get done and *still* chooses to engage in pro-organizational multitasking, this is still considered to be a CWB since they are engaging in behaviors that are counter to the goals of the meeting and there is no clear need (Yoerger et al., 2017). However, when attendees are part of a bad meeting or they have a high workload, then pro-organizational multitasking could conceivably be an effort by that attendee to protect or reclaim their time. Thus, the relationship between the aforementioned predictors and engaging in pro-organizational electronic multitasking is

dependent on experiencing one of two moderating conditions: low meeting satisfaction or high workload.

Meeting satisfaction as a moderator with individual-oriented predictors.

Despite the importance of meetings, both research and popular press articles show that "bad meetings" are extremely prevalent (Rogelberg et al., 2012; Cohen et al., 2011). In one sample of managers, more than 1/3 of their time in meetings was considered unproductive (Green & Lazarus, 1991), and these bad meetings cost the U.S. somewhere between $70 and $283 billion each year (Keith, 2015). Researchers acknowledge that there are both direct costs of these unproductive meetings (i.e. in salary and benefit dollars associated with participants' time) and also indirect costs as well, including opportunity costs (i.e., time lost that could be used in other, more productive ways; Rogelberg et al., 2012). One way to reduce opportunity costs in unproductive meetings can be done through engaging in pro-organizational electronic multitasking: that is, when employees are in particularly dissatisfying meetings, they are more likely to give their attention to other work they can accomplish on the portable devices they bring with them in an effort to gain back lost time.

In thinking about how meeting satisfaction could interact with the predictors in this study, if a conscientious person is part of a bad meeting, for example, the innate desire to stay on top of his/her work and be industrious might drive him/her to engage in pro-organizational electronic multitasking. For affective commitment, if an employee is committed to their organization—they feel a strong sense of belonging, an emotional attachment, feel the organization has a great deal of personal meaning for them, etc.—then he/she could show their allegiance to the organization by getting work done via

electronic multitasking during a dissatisfactory meeting instead of wasting time. A similar logic applies for job satisfaction: that is, if an employee feels a high level of job satisfaction, he/she might engage in work-related multitasking during a bad meeting because he/she finds satisfaction in the work. In the case of organizational justice, if an employee feels he/she has been treated fairly by the organization in terms of decision outcomes (distributive) and organizational processes (procedural), he/she might work during a bad meeting in exchange for these feelings of justice and appreciation. Finally, if an employee values the relationship with his/her supervisor, then getting work done during a low-quality meeting that does not otherwise call for his/her full attention might be a way of reciprocating that satisfaction and continuing to build upon that supervisor-subordinate relationship.

Hypotheses 7a-e. Meeting satisfaction will moderate the relationships between a) conscientiousness b) affective commitment c) job satisfaction d) distributive and procedural justice e) leader satisfaction and pro-organizational electronic multitasking such that the relationships will be positive rather than negative in the cases of dissatisfactory meetings.

Workload as a moderator with individual-oriented predictors. A different condition that an employee could experience that changes the relationship between the individual-oriented predictors and engaging in pro-organizational electronic multitasking is having a high workload. Research has shown there is a positive relationship between workload and engaging in CWBs; a higher workload can lead an employee to feel stressed and engage in behaviors to reduce that stress (Chen & Spector, 1992), such as multitasking in a pro-organizational way to reduce that task list. This tendency to engage

in behaviors aimed at reducing stress when faced with high job demands is consistent with the Conservation of Resources Theory (COR; Hobfoll, 1989), which states that people strive to retain, protect, and build resources, and that losing resources is stressful. According to COR, time is a resource that humans try to retain and protect. Thus, when employee an employee has a high workload and their working time is interrupted by meetings, he/she can become stressed and perhaps engage in pro-organizational electronic multitasking as a way to protect their time and reduce workload.

In terms of my predictors, if a conscientious, hard-working employee is required to attend a recurring staff meeting but has a lot of work to get done, he/she might engage in pro-organizational electronic multitasking in order to keep up with other work tasks and protect his/her time that is otherwise being taken up by the meeting. For affective commitment, an employee could show his/her commitment to the organization, and reinforce that commitment, by engaging in pro-organizational multitasking during a meeting in an effort to contribute to the organization that he/she is committed to, particularly when there is lots of work to attend to. Similarly, if an employee is satisfied with his/her job, then having a high workload should be predictive of engaging in pro-organizational multitasking because he/she finds the work tasks satisfying. With regards to organizational justice, perceiving a high level of distributive and procedural justice at work could be predictive of engaging in pro-organizational electronic multitasking when an employee has high workload, so long as the workload is perceived as fair. Finally, if an employee is satisfied with his/her supervisor, then having a high workload will be positively associated with pro-organizational electronic multitasking in an effort to please his/her boss by getting more work done.

Hypotheses 8a-e. Workload will moderate the relationships between a) conscientiousness b) affective commitment c) job satisfaction d) distributive and procedural justice e) leader satisfaction and pro-organizational electronic multitasking such that the relationships will be positive rather than negative in the cases of high workload.

Meeting satisfaction and workload as moderators for meeting-oriented predictors. Unlike the aforementioned individual-oriented predictors where I hypothesize that the direction of the relationship between the predictors and pro-organizational multitasking will be negative rather than positive with the inclusion of meeting satisfaction and workload as moderators, I believe the meeting-oriented predictors will still be positively associated with pro-organizational electronic multitasking even in the cases of dissatisfactory meetings or high workload. However, these relationships will be stronger in the case of someone experiencing the moderators. As an example, if someone attending a meeting virtually, it is easy to work on other tasks or email a colleague due to the lack of visual access and accountability. However, this tendency to engage in these behaviors will be heightened if someone is experiencing a bad meeting or if they have a lot of work that needs to get done. With regards to meetings where multitasking is normative, an attendee is likely to comply with norms that encourage pro-organizational electronic multitasking, and this would be even more so in the case of a dissatisfactory meeting or high workload since he/she can get work done without consequences due to the behavior being normative. Finally, the same logic applies to large meetings: social loafing theory dictates that engaging in pro-organizational electronic multitasking can occur if participants feel their input is not valuable in a large group, but this tendency to

attend to other work via electronic multitasking could be even stronger in the cases of poorly run large meetings or when someone is in a large meeting that has a heavy workload.

Hypotheses 9a-c. Meeting satisfaction will moderate the relationships between a) meeting medium b) meeting norms for engaging in pro-organizational multitasking c) meeting size and pro-organizational electronic multitasking such that the relationships will be stronger in the cases of dissatisfactory meetings.

Hypotheses 10a-c. Workload will moderate the relationships between a) meeting medium b) meeting norms for engaging in multitasking c) meeting size and pro-organizational electronic multitasking such that the relationships will be stronger in the cases of high workload.

Outcomes of electronic multitasking. I am extending the O'Boyle et al. (2011) counterproductive work behavior model to include potential outcomes of employees engaging in electronic multitasking. Their model, and other literature in the CWB literature as well, is focused on predicting CWBs, whereas I extend the model to include other correlates that are central for individuals and ultimately the organization. I believe that self-interested and pro-organizational electronic multitasking are differentially related to individual- and meeting-oriented outcomes (Yoerger et al., 2018).

As stated, research on electronic multitasking—in both the educational and organizational realms—largely assumes that multitasking is inherently negative. However, a subject matter expert in a qualitative study by Wasson (2004) acknowledged, "[multitasking] is good for the individual, but bad for the group" (p. 56). Thus, while I agree that a room full of attendees electronically multitasking during a meeting could be

problematic for the productivity of the meeting from an organizational perspective, I posit that the multitasking could, at the same time, be beneficial for employees' productivity during that time, if they are engaging in the pro-organizational type of electronic multitasking.

Group productivity. With regards to productivity of the group from an organizational perspective, research shows that CWBs during meetings can hinder meeting attendees from effectively accomplishing their meeting goals (Kauffeld & Lehmann-Willenbrock, 2012). Furthermore, research on multitasking in the classroom shows individuals engaging in electronic multitasking can be distracting to others (Sana et al., 2013), which can take individuals' focus away from the topic being discussed during the meeting. In addition to being distracting, electronic multitasking can have a negative impact on the social dynamics within the meeting. One specific instance of this negative impact is that individuals tend to ask for things to be repeated or that they mishear information, which could waste time and lessen the group's productivity (Bajko, 2012). Taken together, I acknowledge that attendees paying attention to their technological devices can take away from their contributions to the meeting and therefore make it less likely that an organization's meeting goals are met. This relationship between multitasking and meeting productivity is applicable to both types of electronic multitasking. That is, whether a person is engaging in pro-organizational or self-interested electronic multitasking, not fully participating in the meeting will be problematic for perceived group productivity in either case.

Hypothesis 11a. Pro-organizational electronic multitasking will be negatively related to perceived group productivity.

Hypothesis 11b. Self-interested electronic multitasking will be negatively related to perceived group productivity.

Individual productivity. On the other hand, even though electronic multitasking can have a negative impact on the meeting itself, it can still potentially be a productive use of time for the individual, provided that they are engaging in pro-organizational, constructive multitasking. Wasson (2004) wrote "we were impressed by [employees'] good management of multitasking" (p. 56)—some employees are good managers of their multitasking. That is, that they are able to participate in the meeting when needed but still be personally productive by electronically multitasking during times when their full attention is not required. In addition, engaging in multitasking can be a productive form of individual protest (Kelloway et al., 2010), a coping mechanism for dealing with stress at work and reducing negative emotions (Krischer et al., 2010), and an effort to conserve the valuable resource of an employee's time in accordance with Conservation of Resources Theory (COR; Hobfoll, 1989). Therefore, from the perspective of an individual who is engaging in electronic multitasking, it is quite possible that even though the behavior can detract from achieving meeting goals for the group overall, it can still be productive for him/herself so long as it is pro-organizational in nature.

Hypothesis 12. Pro-organizational electronic multitasking will be positively related to perceived individual productivity during the meeting.

METHOD

For the methodology of the current study, I focused on recurring (i.e. "regularly-scheduled" or "standing") staff meetings. There were two main reasons for this: first, staff meetings are the most prevalent form of meetings. According to Romano and Nunamaker (2001), nearly half of all meetings (45%) in organizations are staff meetings. Furthermore, in their qualitative research on understanding meeting purposes, Allen et al. (2014) found "to discuss ongoing projects" and "to routinely discuss the state of business" were the two most prevalent categories, which are aligned with the purpose of staff meetings. Secondly, there has recently been a call in the meetings literature to specify the type of meeting(s) being studied (Kello, 2015). For example, as Allen et al. (2014) explain, "researchers in the meetings domain appear to overlook the purposes of meetings even as they attempt to understand how meetings affect employees and organizations" (p. 793). Therefore, I felt it was imperative to focus on a specific type of meeting because it is possible that the correlates of electronic multitasking might be different in other types of meetings (i.e., employees might be less likely to engage in electronic multitasking in a brainstorming-type meeting as compared to a recurring staff meeting).

Pilot Survey

Before beginning data collection, a pilot survey was conducted with a sample of 84 working adults recruited via social media (the pilot survey can be found in Appendix A). There were three primary goals of this pilot survey: 1) to elicit the correct terminology for the type of recurring meetings to be used in the subsequent surveys 2) to

gain a better understanding of how employees multitask during meetings and 3) to also better understand why employees multitask during meetings.

First, when asked what participants "would call a meeting that is led by your supervisor, occurs regularly, and involves everyone in the department/team," over 2/3rds of respondents said either a staff meeting (44%) or team meeting (23.8%), which is why I used both terms in the subsequent surveys (i.e. I asked participants about "a recurring staff/team meeting"). I also included the third most popular answer (10.7% of pilot participants indicated they would refer to that type of meeting as a "department meeting") in the definition at the beginning of the Phase 1 survey. In terms of how employees multitask during meetings, I confirmed that the majority of multitasking participants were engaging in was electronic. Pilot participants were asked how often they engaged in a variety of activities (the 12-item list included both electronic and pen/paper activities; everything from "use phone/tablet/laptop to send work-related emails" to "use pen/paper to write to-do lists"). The only activities with means over 2 (on a scale from 1-5) were electronic in nature ($M = 2.76$ for "use phone/tablet/laptop to send work-related emails, $M = 2.38$ for "use phone/tablet/laptop to work on other work-related tasks/projects" and $M = 2.20$ for "use phone/tablet/laptop to message about work-related topics"). Finally, participants were asked via both open- and closed-ended questions to identify their main reasons for multitasking during meetings. The top two reasons, across question types, were "because I have a lot of work to do" (84.2% of participants indicated they agreed/strongly agreed this was a reason they multitasked) and "because it is a bad meeting" (58.5% of participants agreed/strongly agreed). The two most other most

common responses were “because I am participating virtually” and “because I have too many meetings.”

Overall, the pilot survey achieved its principal goals. First, I felt confident about the wording for “recurring staff/team meetings” for how to refer to the specific type of meeting I was interested in for the current study. Also, the data suggested that if employees are choosing to multitask during a meeting, they are mostly doing so using technological devices they bring with them to meetings, as opposed to paper-and-pencil multitasking. Finally, the top reasons participants gave for multitasking were captured in the subsequent surveys.

Recruitment

To be eligible for the current study, participants had to 1) work full-time 2) be employed by an organization within the United States 3) have access to a computer, phone or tablet during the workday in order to participate in the surveys and 4) attend at least one recurring staff meeting per week that is led by his/her supervisor. Furthermore, per the pilot study and definition from the meetings literature, I defined a recurring (i.e. regularly-scheduled) staff meeting as (a) a scheduled gathering of two or more individuals for the purpose of a work-related interaction that is more structured than a simple chat, but less structured than a lecture; (b) is primarily attended by employees of their organization and those with whom they work regularly (e.g., in their work group, team, etc.); (c) occurs at least once per month; (d) is led by your supervisor (Rogelberg et al., 2006).

Participants were recruited via two main streams: social media and a large research services company. For those recruited via social media, information about the

study was posted to the primary author's Facebook profile page. The second stream of participants were contacted directly through a research services company named "ROI Rocket."

Procedure

The data collection procedure was divided into two phases. First, participants were initially invited to participate in the Phase 1 survey, either via the social media posting or ROI Rocket recruitment email. This Phase 1 survey captured the following: 1) trait-like measures (e.g. conscientiousness) 2) job characteristics/attitudes (e.g. affective commitment, job satisfaction, organizational justice, leader satisfaction, workload, etc.) 3) information about a particular recurring staff meeting they attend (e.g. how they attend, meeting norms for multitasking, size of the meeting, their typical meeting satisfaction, general tendencies for themselves/others to engage in electronic multitasking during this standing meeting, etc.) and 4) individual and organizational demographics (e.g. gender, tenure, size of the organization, etc.). At the end of the Phase 1 survey, participants were asked to indicate the date and time of their next recurring meeting in order to receive the Phase 2 Survey shortly after that meeting. Reminder emails for Phase 1 were sent via Qualtrics/ROI Rocket one week after the initial invite to those who had not yet completed the survey.

The Phase 2 Survey was then sent via email to participants within 12 hours of their recurring meeting ending (as dictated by the date/time they entered in the Phase 1 survey). In this survey, participants answered more targeted questions about select variables in the first survey (e.g., the first survey asked about electronic multitasking during their staff meetings in general, while the second survey asked how much they

multitasked during that recurring staff meeting specifically); the second survey also included outcome variables (i.e. individual/group meeting productivity). Reminders for the Phase 2 survey were sent 24 hours after the first email to those who had not yet completed the survey, since it was critical that the recurring meeting was fresh in their minds.

In terms of compensation for participating, participants recruited through social media who completed each survey were entered into two rounds of random gift card drawings. For completing the Phase 1 survey, participants were entered into a random drawing to win one of five $25 Amazon gift cards. Following the Phase 2 survey, participants were entered to win one of fifteen $25 Amazon gift cards (the number of gift cards was higher for the Phase 2 survey because it was critical that I had participation on both surveys); participants who won the first gift card were not precluded from winning a second gift card. Participants recruited through ROI Rocket were paid a small percentage of the total project cost for their opinions, per their standard procedure with survey panelists; ROI Rocket incentive options allow panelists to redeem their earnings via PayPal, check, pre-paid Visa card, or Amazon gift codes.

Final Sample

195 individuals recruited via social media and 28,750 individuals recruited via ROI Rocket were invited to participate in the Phase 1 survey. The Phase 1 response rate was 54.4% (106) for social media and 4.2% (1,212) for ROI Rocket. Of those Phase 1 responses, six (5.1%) of the social media participants and 524 (43.2%) of the ROI Rocket participants did not consent to being part of the study, did not qualify for the study, or had more than 75% of their responses missing, thus bringing the totals for Phase 1

complete responses to 100 for social media and 688 for ROI Rocket. For Phase 2, the response rate was 86% (86) for social media and 55.4% (381) for ROI Rocket. Only four (4.7%) of the social media and 19 (5.0%) of the ROI Rocket Phase 2 responses had to be removed due to having more than 75% survey incompleteness. Thus, the final sample of participants who completed both surveys was made up of 82 individuals collected via social media and 362 from ROI Rocket.

In order to ensure that the groups of participants were comparable and therefore able to be merged, t-tests on the focal variables were performed. The only significant difference out of all focal variables (i.e. conscientiousness, commitment, job satisfaction, organizational justice, leader satisfaction, meeting medium, own/others self-interested and pro-organizational electronic multitasking, norms for electronic multitasking, meeting size, meeting satisfaction, workload, group productivity, individual productivity) was on the variable "leader satisfaction," with those participants recruited through social media having a higher mean rating of leader satisfaction compared to the ROI Rocket sample ($M = 4.33$, $SD = .84$ and $M = 4.06$, $SD = 1.02$, respectively; $t(405) = -2.34$, $p = .03$). In addition, a test of measurement invariance was performed to further verify that the groups of data were similar; measurement invariance indicates that the same constructs are being measured across groups (Putnick & Bornstein, 2016). More specifically, a Multigroup Confirmatory Factor Analysis (MGCFA) was performed to test for measurement invariance. Cheung and Rensvold's (2002) criterion of a <.01 change in CFI for nested models is commonly used as a criterion. In this case, the ΔCFI when cross-group constraints were imposed on a measurement model was .006 (ΔRMSEA was also <.015), which resulted in the two groups of data being merged ($N = 444$). This

combined sample number exceeded the minimum of 400 participants, based on a power analysis for moderated regression, that was needed to have adequate statistical power to detect any effects (power set at acceptable rate of .80, $\alpha = .05$, using six continuous predictors and two moderators; Aguinis, 1995; Faul et al., 2009).

The combined sample was 68% female and represented a wide range of ages, with 27.4% between the ages of 25-34, 26.2% between 34-44 years old and 25.4% between 45-54 years old. The vast majority of participants (81.4%) were white, 5.6% were black, 4.4% were Latino/a or Hispanic, and 4.5% Asian. A majority of participants had their Bachelor's degree (41.6%), while 31.1% had a 2-year degree or less, and 27.4% had an advanced degree (Master's or Doctorate).

Although the majority of participants in the sample were female, there were not significant differences between males and females on any of the focal variables according to a series of t-tests. Additionally, although the majority of participants in the sample were white, the results of t-test analyses showed there was only one difference out of all focal variables between white and minority participants: minority participants reported higher levels of engaging in the self-interested type of electronic multitasking during meetings ($M = 2.36$, $SD = 1.45$, $N = 66$ for minority participants; $M = 1.77$, $SD = 1.17$, $N = 332$ for white participants, $t(396) = 3.59$, $p < .05$).

In terms of their jobs and organizations, most participants (81.4%) worked at a physical office location rather than working from home. The majority of the sample identified themselves as associate-level employees (39.6%), while another 34.5% identified as managers; smaller percentages of the sample were Director/Vice Presidents (12.2%) or entry level employees (11.0%). Most participants have been with their

organizations for 2-5 years (31.5%), with another large group having 6-10 years tenure (24.9%), and equal size groups whose tenure was under two years or 11-20 years (16.9% for each). Almost 2/3rds (59.4%) of participants worked for for-profit organizations. The sizes of organizations represented was quite varied with the top three sizes being 5000+ employees (25.9%), 100-499 employees (20.0%) and 1000-4999 employees (18.6%).

With regards to characteristics of the recurring staff meetings participants attended, the vast majority were in-person meetings (81.2%). Most recurring meetings were attended on a weekly basis (46.2%), with some others occurring monthly (24.9%), and others every two weeks (17.4%). The bulk of meetings lasted between 31-60 minutes (49.9%), while 34.7% of meetings were less than 30 minutes. Finally, over 2/3 of the sample had been attending this particular recurring meeting to which the surveys were referring for more than one year (69.9%).

Measures: Phase 1 Survey

All study measures with items and response scales are presented in Appendix B.

Conscientiousness. Conscientiousness was measured using the conscientiousness scale from the Mini-IPIP. The Mini-IPIP is a 20-item scale (Donnellan et al., 2006), with four items measuring each of the five factor model traits. Each item is a phrase describing a behavior and participants indicate how accurate this phrase is for them using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). A sample item for conscientiousness is "likes order." The internal consistency (Cronbach's alpha) for this scale was .72. Although this alpha reliability is slightly low, it is similar to what was reported in the original paper for the conscientiousness scale (α = .69 in validation Study 1, α = .75 in validation Study 2 in Donnellan et al., 2006).

Affective commitment. Employee's affective organizational commitment was measured using the affective commitment portion of Meyer et al.'s (1993) Organizational Commitment Scale. The measure consists of four items and uses a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). A sample item is "this organization has a great deal of personal meaning for me." The internal consistency for these items was .87.

Job satisfaction. Job satisfaction was measured using a single-item measure from Dolbier et al. (2005). This single-item measure, derived from the 16-item Job Satisfaction Scale (Warr et al., 1979), has been shown to be an acceptable instrument for measuring job satisfaction, especially when length of survey is a concern, which was the case in the current study (Wanous et al., 1997; Nagy, 2002; Dolbier et al., 2005). The item reads, "Taking everything into consideration, how do you feel about your job as a whole?" and uses a 5-point Likert scale where 1 = *very dissatisfied* to 5 = *very satisfied*.

Organizational justice. Based on examples from the CWB literature (e.g. Spector & Fox, 2002; Dalal, 2005), the distributive and procedural types of organizational justice, specifically, were included in this study. They were measured using Colquitt's (2001) justice scale, with four items for distributive, seven items for procedural justice, and a 5-point Likert response scale (1 = *to a small extent* to 5 = *to a great extent*). The instructions for the distributive justice items read, "The following items refer to your outcomes (e.g. salary, promotion decisions) at work," while the instructions for procedural justice were, "The following items refer to the procedures used to arrive at your outcomes at work (e.g. performance review procedures for determining salary/promotions." A sample item for distributive justice is "does your (outcome) reflect the effort you have put into your work?" A sample item for procedural

justice is “Have you had influence over the (outcome) arrived at by those procedures?” The internal consistencies for these scales were both .92.

Leader satisfaction. Satisfaction with an employee’s leader was measured using a 3-item Leader Satisfaction Scale from Camman et al. (1983). A sample item is “in general, I like my leader”; the Likert response scale ranged from 1 = *strongly disagree* to 5 = *strongly agree.* The internal consistency for these items was .88.

Meeting norms for electronic multitasking. Whether it is normative for employees to engage in electronic multitasking during meetings in their organizations was measured using a scale from Stephens and Davis (2009). The scale consisted of four items with a 5-point Likert response scale (1 = *strongly* disagree to 5 = *strongly agree*). A sample item is “In my organization, it is acceptable for people to use technology [i.e. smartphone, laptop, or tablet] during meetings.” The internal consistency for this scale was .88.

Meeting satisfaction. Perceptions of meeting satisfaction were measured with a 6-item meeting satisfaction scale from Rogelberg et al. (2010). Participants were asked to think about the recurring meeting they attend and rate the extent to which the words described the recurring meeting on a Likert scale from 1 = *to no extent* to 5 = *to a great extent*. A sample item is “boring.” The internal consistency for this scale was .87.

Subjective workload. Perceptions of one’s workload were measured by a scale from Kirmeyer and Dougherty (1988). The scale consisted of four items, where participants rated the extent to which they felt that way at work “on most days” on a 5-point Likert scale (1 = *to no extent* to 5 = *to a great extent*). A sample item is “pressure in carrying out work duties.” The internal consistency for this scale was .86.

Electronic multitasking (self-interested and pro-organizational types). One's own self-interested and pro-organizational electronic multitasking were measured using scales from Yoerger et al. (2018). The measures each contained four items 5-point Likert scale (1 = *to no extent* to 5 = *to a great extent*). In the Phase 1 Survey, the stem read, "In our recurring staff meeting, I tend to…" A sample item for self-interested is "use an electronic device (phone, tablet, or laptop) to browse the Internet, unrelated to work," whereas a sample item for pro-organizational electronic multitasking is "send/respond to work-related (non-meeting related) emails during the meeting." The internal consistencies for these scales were .92 for own self-interested electronic multitasking and .92 for own pro-organizational electronic multitasking.

Measures: Phase 2 Survey

Electronic multitasking (self-interested and pro-organizational types). The same items from the Phase 1 Survey were used to assess one's own self-interested and pro-organizational multitasking; the stem changed slightly to ask participants to what extent they agree with the following statements about their behavior during this recurring meeting. The internal consistencies for these scales were .92 for own self-interested electronic multitasking and .91 for own pro-organizational electronic multitasking.

Meeting satisfaction. The same six items from the Phase 1 Survey were used to assess participant's meeting satisfaction for this particular recurring staff meeting. The internal consistency for this scale was .88.

Subjective workload. Workload was assessed using the same four items. In Phase 2 participants were asked to think the extent to which they felt "pressure to carry

out work duties," for example, "at work this week" specifically, instead of "in general." The internal consistency for this scale was .88.

Individual productivity. Individual productivity during the meeting was measured using a 10-item measure of effectiveness developed by Nixon and Littlepage (1992). Participants were asked to "evaluate this recurring staff/team meeting in terms of how ___ it was for you personally." Two sample items are "effective" and "useless." The responses were on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree.* The internal consistency of this scale was .95. I also added an item to ask about productivity in a different way, based a paper about wasted time in meetings by Rogelberg et al. (2012): "In thinking about your own personal productivity, please evaluate your return on the last X minutes of time investment" on a 5-point Likert response scale ranging from 1 = *extremely unproductive for me* to 5 = *extremely productive for me*.

Group productivity. Perceived productivity for the group was measured using the same Nixon and Littlepage (1992) 10-item scale, with modified directions that asked participants to think about the meeting from the group's perspective and "evaluate this recurring staff/team meeting in terms of how it was for the group/collective." The internal consistency was .93. Similar to the additional item for personal productivity, I also asked participants to "think about the group's collective return on the last X minutes of time investment" using the same response scale.

Prior to hypothesis testing, discriminant validity testing of the measurement model showed that individual and group productivity scales from Nixon and Littlepage (1992) were highly correlated with one another ($r = .87$, $p < .001$), thus indicating a very

high degree of redundancy between the constructs as they were measured in this study. Therefore, the single-item indicators, adapted from Rogelberg et al. (2012), were used throughout hypothesis testing instead. Although single-item measures of attitudes, knowledge, skills, or abilities are generally discouraged due to content validity and reliability concerns (Nunnally & Bernstein, 1978), there was not a good alternative for the present study given the lack of discriminant validity between the multi-item scales. The limitations of this decision are reviewed in the Discussion section.

Control variables. Control variables are factors that researchers include in their work to rule out potential alternative explanations for relationships that exist (Becker, 2005). In this study, controls were retained for future analyses if they explained significant variance in the dependent variable (per their correlations), which allowed me to ensure that the proposed independent variables explained incremental variance over and above the control variables in the dependent variable (Becker, 2005; Bernerth & Aguinis, 2016).

For hypotheses where electronic multitasking was the dependent variable, age was retained as a control variable, as it was significantly corelated with all types of electronic multitasking. Furthermore, in addition to being statistically related to the dependent variable, it is also important that the control variable is theoretically related to the dependent variable as well, to avoid adding in unnecessary control variables (Spector & Brannick, 2011; Becker et al., 2016). In the case of age, prior multitasking literature shows a relationship between age and engaging in electronic multitasking (e.g. Otto et al., 2012; Voorveld & van der Goot, 2013), such that younger people tend to engage in

higher levels of multitasking, which was the case in the current study for all types of electronic multitasking.

For hypotheses where group/individual productivity during the meeting were the dependent variables, meeting satisfaction was retained as a control variable, as it was the only variable significantly correlated to both types of meeting productivity. In terms of its theoretical relevance, previous meetings research has shown a significant, positive relationship between attendees' meeting satisfaction and meeting productivity (Briggs et al., 2006).

RESULTS

Data Cleaning

Prior to analyses, the data ($N = 444$) were examined for outliers and insufficient effort responding (IER). First, 35 participants were dropped from the dataset who indicated on the Phase 2 Survey that they had experienced an atypical recurring meeting. This question at the beginning of the Phase 2 Survey read, "To what extent was this recurring staff/team meeting 'typical'? That is, it was typical in terms of number of attendees, duration, etc.?" The response scale ranged from 1 to 5, with 1 = *to no extent (e.g. NOT similar to our other recurring staff/team meetings)* to 5 = *to a great extent (e.g. VERY similar to our other recurring staff/team meetings)*. 35 participants who answered with either a "1" or "2" were removed from the dataset since their answers about key focal variables (i.e. their electronic multitasking, meeting satisfaction, productivity, etc.) in Phase 1 would not be reflective of the last meeting they just had, thus rendering their data unusable.

Outlier analyses were then performed on all focal variables on the remaining data ($N = 409$). The only variable that contained any participants two standard deviations above or below the mean was meeting size (i.e. number of meeting attendees in the recurring meetings as reported by the participants). The standard deviation for this variable was extremely high ($M = 26.13$, $SD = 133.0$ for Phase 1 and $M = 27.99$, $SD = 237.96$ for Phase 2) given some incredibly large meetings reported by participants. After removing those scores that were two standard deviations above the mean (five participants on Phase 1 and two on Phase 2), there was still a host of extreme values. Thus, meeting sizes larger than two standard deviations above the new mean were

collapsed into the same size of 59 on Phase 1 and 60 on Phase 2; these meeting sizes of 59 and 60 were chosen because those sizes were two standard deviation above the mean after removing the first round of extreme outliers. For example, a reported meeting size of 100 on the Phase 1 survey—which was still more than two standard deviations above the mean after dropping the extreme outliers—was amended to 59; this change was made for 13 participants on Phase 1 and 15 participants on Phase 2, which is less than 5% of meeting size scores. This approach of replacing the values of outliers with the largest value in observations excluding outliers is referred to as "winsorization" and it is one method to downweigh outliers (Zimmerman, 1995; Kwak & Kim, 2017). It is important to note, however, that all analyses involving meeting size were run 1) with the original data and 2) with the modified data (where the largest meeting sizes were 59/60). Any results that were significant with the original meeting size data were also significant with the amended meeting size data, thereby indicating that this method of replacing outliers had no unintended effects.

Following outlier analyses, three indices of IER were calculated to determine if any participants should be dropped due to responding to questionnaire items with reduced effort as a result of inattentiveness, fatigue, speeding through the survey, etc., thus resulting in low quality survey data (Meade & Craig, 2012). The three IER indices that were examined in this study were response time, long string, and Individual Response Variability (IRV; Dunn et al., 2018). First, response times for both surveys were examined. Most participants (75%) completed the Phase Survey 1 in less than 16 minutes and the Phase 2 Survey in less than 8 minutes. However, since respondents were able to revisit the survey multiple times—they could close out of the survey on their device and

reopen the link later to return to the same question on the survey—the mean and standard deviation for response time were not indicative of response time issues. Thus, the quickest 5% of survey finishers on each survey (N = 21) were examined, which were participants who finished in less than 6 minutes on the Phase 1 Survey and 3 minutes and 30 seconds on the Phase 2 Survey. Although these participants finished the surveys quickly, their responses did not appear to warrant them being removed from the dataset based solely on this response time index (i.e. there were not any obvious patterns within their data that would indicate that they clicked through the survey quickly without regard for the questions).

Next, the long string index was calculated for participants on each survey using Excel (Landers, 2016). A "long string" occurs when a participant answers with the same response on a large number of survey items in a row. A long string might indicate that participants are not paying attention to the questions being asked and instead just selecting the same response repeatedly (Dunn et al., 2018). The long string index was calculated on all scales with more than one item, using raw data before negatively worded items were reverse coded. The mean long string index for participants on the Phase 1 Survey was 2.82 items (SD = .53) and 2.83 items (SD = .67) for the Phase 2 Survey. Participants with the top 5% of long string responses (above 3.67 for Phase 1 and 3.75 for Phase 2) for analyzed for IER. Upon visually inspecting these participants' responses, it appeared that the long strings largely occurred within constructs, which is appropriate given the context. For example, since none of the electronic multitasking items were reverse-coded, several of the long strings occurred within those scales, thus meaning that participants consistently engaged in either a high or low amount of

electronic multitasking during their meetings; this could be the case in a meeting where a leader discourages the use of technology or using technology is normative.

Finally, the IRV index was calculated for participants on both surveys. The IRV index is an extension of the long string index introduced by Dunn et al. (2018); if respondents are responding to different constructs for which they have different standings, then their responses should vary accordingly. Therefore, it is calculated as the standard deviation of responses across a series of consecutive scale items. As was the case for the long string index, the IRV index was calculated using the raw data before scale items were reverse coded. The mean IRV index for participants on the Phase 1 Survey was 1.28 (SD = .30) and 1.27 (SD = .29) for the Phase 2 Survey. The participants with the lowest IRV index—the bottom 5%—were further examined for IER. Following this final examination, there were three participants that were flagged for fast response times, long string indices, and low IRV indices. These three participants were therefore removed from the dataset since it appears they were engaging in IER. Thus, after merging and data cleaning, the final sample size was 406 participants.

Common Method Variance

Several steps were taken to overcome common method issues in the design of the study (Podsakoff et al., 2003). First, the predictor and criterion variables were measured at different time points. For example, all predictors of electronic multitasking (i.e. conscientiousness, affective commitment, job satisfaction, organizational justice, leader satisfaction, meeting medium, norms for multitasking, and meeting size) were all measured on the Phase 1 Survey, while the moderators (i.e. meeting satisfaction and

workload) and outcome variables (i.e. individual and group productivity) were measured on the Phase 2 survey.

Another procedural recommendation to control for common method variance is to use different response scales, which was done in this study (Podsakoff et al., 2003). For example, some of the scales used were "strongly disagree" to "strongly agree," "to no extent" to "to a great extent," and "not at all" to "very." The use of these different scales—some of which were presented in matrix tables and some of which were individual questions, which varied throughout the surveys—also forced participants to pay close attention to the items and their respective scales. Additionally, each survey was separated into several sections with descriptive text for most sections; frequent page breaks were also used throughout both surveys, which allowed participants to take short mental breaks. Finally, the scales were randomized within the sections, which increased counterbalancing.

Although several procedural tactics were employed to minimize common method variance in the current study, the Comprehensive Confirmatory Factor Analysis Marker Technique (Williams et al., 2010) was also carried out to statistically check for common method variance. The marker variable was role ambiguity in the context of a participant's last volunteer experience. More specifically, participants were asked at the end of the Phase 1 survey to think about a particular volunteer experience they had, outside of work, in the last 10 years and indicate the extent to which they agree with three statements about their level of role ambiguity at that volunteer assignment; a sample item was "I had clear planned goals and objectives for my volunteer assignment" (adapted from Rizzo et al., 1970). This variable was chosen because it was a short scale, only three items, and

because it was not theoretically related to any of the current study's focal variables. Being unrelated to focal variables is critical for this technique because any shared variance could be explained by a common method (Williams et al., 2010).

To use the Comprehensive Confirmatory Factor Analysis Marker Technique, a measurement model with all focal variables was created in Amos 23.0 in which the variables covaried with each other. Then, a common latent factor was added to the model, all observed items for all of the focal variables were regressed onto that factor, and each regression weight was constrained to "a," so that the common factor would explain the amount of common shared variance among the items. Then, the marker variable—volunteer experience role ambiguity—was added to this measurement model and the same steps were followed. Finally, the variance for the common factor was constrained to 1. After running this model, the regression weights were squared to obtain the common variance among the items. These "a" regression weights were .29; when these weights were squared, the percentage of common variance was 8.4%, which is less than 10% common variance.

Discriminant Validity of Constructs in Measurement Model

Also prior to analyses, multiple nested confirmatory factor analytic models were tested to evaluate whether the focal variables were distinct from each other and to ensure that the indicators loaded onto their intended latent variables. A series of three nested CFA models were tested using the lavaan package in R to compare the fit of the various measurement models (see Table 1). The 10-factor model included all constructs as separate factors (i.e. conscientiousness, affective commitment, procedural justice, distributive justice, leader satisfaction, own self-interested electronic multitasking, own

pro-organizational electronic multitasking, norms for electronic multitasking, meeting satisfaction, and workload). In the first 9-factor model, procedural and distributive justice were included as a single factor and all other constructs were kept as separate factors. In the second 9-factor model, own self-interested electronic multitasking and own pro-organizational electronic multitasking were combined into a single factor, while all other constructs were kept as separate factors.

The second 9-factor model fit the data the best (χ^2 (1163) = 2510.01 ($p < .05$); Comparative Fit Index [CFI] = .92; Tucker Lewis Index [TLI] = .91; Root Mean Square Error of Approximation [RMSEA] = .05). In this model, the different "types" of electronic multitasking were combined—that is, own self-interested electronic multitasking and own pro-organizational electronic multitasking were combined on one factor. These CFA results suggested that there were not distinct types of electronic multitasking in the current study's sample—that is, self-interested and pro-organizational electronic multitasking loaded onto the same factor.

Additional analyses were run before making the decision to combine the types of electronic multitasking, which is what these CFA results suggested. Although it is not conventional to follow up a CFA with an exploratory factor analysis (EFA), given the substantive implications of the above results to the hypotheses an EFA was performed on the "own electronic multitasking" items to further explore the structure. Principal Axis Factoring was used as the extraction method with a direct oblimin rotation method (Conway & Huffcutt, 2003). The EFA, using Kaiser's criterion of eigenvalues greater than 1, also yielded a one-factor solution as the best fit for the data—accounting for 80.40% of the variance. The examination of the item-level factor analysis loadings

indicated that the own self-interested and pro-organizational items loaded onto one factor with loadings above .70. Additionally, to assess whether there were certain pro-organizational or self-interested items that were driving the communality, each item was dropped one at a time. The results of this series of CFA analyses also showed that the fit was consistently better with one factor (combining self-interested and pro-organizational) rather than two factors (keeping them separate).

As a final exploratory analysis before combining the two types of electronic multitasking, the study's hypotheses were tested two ways. First, they were run differentiating between the two types of multitasking—self-interested and pro-organizational were kept separate—as they were originally written (i.e. conscientiousness will be negatively related to self-interested electronic multitasking). Then, the hypotheses were tested—purely for exploratory purposes—with a combined index of electronic multitasking, where the two types of multitasking were combined into an electronic multitasking index, as the CFA results suggested (i.e. conscientiousness will be negatively related to electronic multitasking). The pattern of results for all 12 hypotheses was largely the same. That is, if a significant relationship existed, it existed whether the single type of electronic multitasking was the IV/DV or whether the electronic multitasking index was the IV/DV, with the only differences being the coefficients.

Taken together, the discriminant validity evidence overwhelmingly suggested that self-interested and pro-organizational electronic multitasking were unfortunately not separate constructs in the current study. The limitations of this will be reviewed in the Discussion section, but it was clear based on the CFAs, EFAs, item-level analyses, and exploratory hypothesis testing that the types of electronic multitasking were indistinct

from one another and needed to be combined into a general "own electronic multitasking" index.

Since all a priori hypotheses were dependent on predicting the different types of electronic multitasking or examining the outcomes of different types of electronic multitasking, the hypotheses could not be tested as written due to failure of the measurement model. That is, since each set of hypotheses was written to focus on a single type of multitasking—predicting self-interested electronic multitasking, looking at the moderators of the relationships between the predictors and pro-organizational electronic multitasking, and examining the productivity outcomes of each type of electronic multitasking—it would be impossible to test them as written given that the different types were indistinct from one another and indices of electronic multitasking were created instead. Since hypothesis testing was not possible, a decision was made to carry out the study using research questions as a guiding framework for the data analysis section instead of testing the a priori hypotheses.

To create the new research questions (RQs), the hypotheses were transformed into open-ended RQs that are in line with the principal purposes of the current study. The first set of hypotheses concerned better understanding the individual- and meeting-oriented predictors of employees engaging in self-interested electronic multitasking during meetings. Thus, that set of hypotheses was rewritten into the following RQ with the same predictors and new electronic multitasking index outcome:

> *Research Question 1. What are the relationships between the multifaceted predictors (i.e. individual and meeting-oriented variables) and electronic multitasking?*

The second set of hypotheses was originally focused on better understanding how meeting satisfaction and workload would moderate the relationships between the individual- and meeting-oriented predictors and electronic multitasking. The second RQ is still focused on understanding the potential role meeting satisfaction and workload play as moderators, just with the electronic multitasking index as the outcome.

Research Question 2. How do meeting satisfaction and workload moderate the relationships between the individual- and meeting-oriented predictors and electronic multitasking?

Finally, the third set of hypotheses was created to extend beyond existing research on the predictors of electronic multitasking to begin to explore the outcomes of the behavior, specifically focusing on the productivity of the individuals in the meeting and the collective group as a whole. Instead of focusing on the outcomes of self-interested and pro-organizational electronic multitasking separately, this RQ was written to understand the relationships between electronic multitasking and individual/group productivity during the meeting.

Research Question 3. What are the relationships between electronic multitasking and perceived individual and group productivity?

By rewriting the hypotheses that were not able to be tested into research questions, this allowed the research to continue. Furthermore, the principal purposes of the research study—to better understand the predictors, moderators, and outcomes of electronic multitasking during meetings—were still able to be carried out, while concurrently dealing with the shortcomings of the electronic multitasking constructs.

Descriptive Statistics

Descriptive statistics, bivariate correlations, and internal consistency alphas for focal study variables and control variables are presented in Table 2. It should be noted that the means for conscientiousness (M = 4.01), affective commitment (M = 3.82), and leader satisfaction (M = 4.11) were high given the 5-point scale. For the electronic multitasking index, participants reported lower levels of themselves engaging in multitasking during the meeting as compared to how much they perceive others to be multitasking (M = 2.10 for own electronic multitasking; M = 2.65 for others' electronic multitasking). One's own electronic multitasking was not significantly related to managerial status, gender, job tenure, education, nor job title; the only demographic variable that it was significantly related to was age, the control variable. In terms of productivity, the mean reported level of individual productivity during the recurring meeting was slightly higher than perceived group productivity (M = 2.93 for individual, M = 2.72 for group). The only demographic variable that productivity was significantly related to was managerial status, and it was only for individual productivity, not group productivity (r = -.25, p < .01, where managerial status is dummy coded as 0 = individual contributor and 1 = manager). The negative correlation indicated that being a manager was associated with a lower level of productivity during the meeting in the current sample.

Research Question 1

Research Question 1 focused on individual- and meeting-oriented predictors of meeting attendees engaging in electronic multitasking. As previously mentioned, age was included as a control variable for each analysis due to 1) its inclusion in past electronic

multitasking research as a control variable (Otto et al., 2012; Voorveld & van der Goot, 2013) and 2) its significant relationship with own/other electronic multitasking in the current study (r = -.23, p < .01; r = -.24, p < .01, respectively) .

Individual-oriented predictors. First, individual-oriented predictors of electronic multitasking were examined. These predictors included conscientiousness, affective commitment, job satisfaction, organizational justice, and leader satisfaction.

Conscientiousness. The results of the hierarchical regression analysis indicate that conscientiousness significantly predicted an individual's propensity to engage in electronic multitasking, $\Delta F(2, 404) = 22.30$, $p < .001$, $\Delta R^2 = .05$; the regression coefficient for conscientiousness was negative (ß = -.23). Thus, there was a negative relationship between conscientiousness and engaging in electronic multitasking, meaning that the more conscientious someone is, the less likely they are to engage in electronic multitasking during a meeting.

Affective commitment. The results of the hierarchical regression analysis indicate that affective commitment was not a significant predictor of an individual's electronic multitasking ($\Delta F(2, 404) = 1.50$, $p > .05$, $\Delta R^2 = .00$, ß = .06).

Job satisfaction. The results of the hierarchical regression analysis indicate that job satisfaction was not a significant predictor of electronic multitasking ($\Delta F(2, 404) = .25$, $p > .05$, $\Delta R^2 = .00$, ß = .02).

Organizational justice. In this study, the distributive and procedural types of organizational justice were examined as predictors of engaging in electronic multitasking during the meeting. The results of the hierarchical regression analyses show that neither type of organizational justice was a significant predictor ($\Delta F(2, 404) = 2.42$, $p > .05$, ΔR^2

= .01, ß = .08 for distributive justice; ($\Delta F(2, 404) = .63$, $p > .05$, $\Delta R^2 = .00$, ß = .04 for procedural justice).

Leader satisfaction. For the last of the individual-oriented predictors, the results of the hierarchical regression analysis indicate that leader satisfaction was not a significant predictor of engaging in electronic multitasking, $\Delta F(2, 404) = 3.46$, $p > .05$, $\Delta R^2 = .01$, ß = -.09.

Meeting-oriented predictors. In addition to individual-oriented predictors, employees' perceptions of meeting-oriented factors were also examined as potential predictors of their electronic multitasking. These included meeting medium, meeting norms for electronic multitasking, and meeting size.

Meeting medium. Participants were asked how they attended this recurring meeting. In order to examine whether participants in virtual meetings engage in more electronic multitasking, those who attended in-person were compared to virtual participants (who either attended via audio or video conference). The results of the hierarchical regression analysis indicate that meeting medium was a significant predictor ($\Delta F(2, 404) = 42.04$, $p < .001$, $\Delta R^2 = .09$); the dummy-coded regression coefficient for virtual meeting attendance was positive (ß = .91), thus indicating that those who attended their recurring meetings virtually exhibited higher levels of electronic multitasking during the meeting.

Norms for electronic multitasking. The results of the hierarchical regression analysis indicate that meeting norms for engaging in electronic multitasking were predictive of engaging in electronic multitasking, $\Delta F(2, 404) = 78.79$, $p < .001$, $\Delta R^2 = .15$. The regression coefficient for the norms variable was positive (ß = .40), thus

indicating that the more employees perceive electronic multitasking to be acceptable in their organizational meetings, the more they engage in the behavior themselves.

Meeting size. The results of the hierarchical regression analysis indicate that the size of the recurring meeting was predictive of electronic multitasking, $\Delta F(2, 403) = 8.63$, $p < .05$, $\Delta R^2 = .03$. The regression coefficient for meeting size was positive (ß = .19), which indicates that larger meetings are associated with higher levels of employees engaging in electronic multitasking. As previously stated, this significant result was found regardless of any changes made to the meeting size data. That is, during the data cleaning phase of this study, a decision was made to replace extremely large reported meeting sizes with a less extreme value—60—in order to reduce the large standard deviation on that variable. To quell any concerns that this recoding of the data is what drove the result that meeting size is significantly related to electronic multitasking, the same hierarchical regression analysis was performed using the original data and the result was still positive and significant ($\Delta F(2, 403) = 3.62$, $p = .05$, $\Delta R^2 = .02$, ß = .09).

Research Question 2

After exploring the individual- and meeting-oriented predictors of individuals' electronic multitasking during meetings, two potential moderators of these relationships were examined: meeting satisfaction and workload.

A series of moderated multiple regression analyses were performed. Before running each analysis, the predictor, moderator, and control variable (age) were mean-centered for ease of interpreting the resulting coefficients (Dawson, 2014). The centered predictor and control variable were then entered in first step of the analysis, followed by the addition of the centered interaction term between each predictor and either meeting

satisfaction or workload in the second step (Aiken & West, 1991). There were four significant interactions identified for the workload variable: workload moderated the relationships between 1) affective commitment 2) distributive justice 3) procedural justice and 4) leader satisfaction and electronic multitasking. The interactions between workload and the other predictors (i.e. conscientiousness, job satisfaction, meeting size, meeting medium, and norms for electronic multitasking) were not significant. Also, none of the interactions between meeting satisfaction—the other moderator that was tested—and the various predictors were significant.

Affective commitment. The results of the moderated multiple regression analysis show that the addition of affective commitment-by-workload interaction term resulted in a significant increase in R^2 ($\Delta F(4, 402) = 5.92$, $p < .05$, $\Delta R^2 = .01$, ß = .17), which indicates that workload moderates the relationship between affective commitment and electronic multitasking. To aid in interpretation, the relationship between affective commitment and electronic multitasking was plotted at one standard deviation above and below the mean for workload in Figure 1 (Cohen et al., 2003). As shown, the gradient of slope for low workload is slightly negative, while it is positive in the case of high workloads.

Additionally, simple effects tests (Aiken & West, 1991) were conducted to further test the nature and significance of the moderation effect. The simple effects tests revealed nonsignificant relationships between affective commitment and electronic multitasking at one standard deviation below the mean of workload, $t(406) = -.74$, $p > .05$. The effects tests indicated a significant positive relationship between affective commitment and electronic multitasking at one standard deviation above the mean level of workload

($t(406) = 2.84$, $p < .01$), such that the relationship between affective commitment and electronic multitasking is stronger for those with higher workloads.

Organizational justice. The results of the moderated multiple regression analyses for both types of organizational justice included in this study showed the addition of the organizational justice-by-workload interaction terms resulted in significant increases in R^2 ($\Delta F(4, 402) = 5.06$, $p < .05$, $\Delta R^2 = .01$, ß = .11 for distributive justice); $\Delta F(4, 402) = 10.38$, $p < .01$, $\Delta R^2 = .02$, ß = .15 for procedural justice. This indicates that workload moderates both of the relationships between distributive and procedural justice with electronic multitasking. The illustrations of these relationships are in Figures 2 and 3; in both cases, the gradient of the slope for low workload is slightly negative, while it is positive in the case of high workloads.

To further investigate the moderation, simple effects tests were conducted on both of the significant organizational justice interactions. For distributive justice, the simple effects tests revealed non-significant relationships between distributive justice and electronic multitasking at one standard deviation below the mean of workload, $t(406) = -.04$, $p > .05$; for high workload, the tests indicated a significant positive relationship between distributive justice and electronic multitasking at one standard deviation above the mean level of workload ($t(406) = 3.21$, $p < .01$), such that the relationship between distributive justice and electronic multitasking is stronger when employees are experiencing high workloads. For procedural justice, the results of the simple effects tests were similar: there was a nonsignificant relationship between procedural justice and electronic multitasking at one standard deviation below the mean of workload, $t(406) = -.79$, $p > .05$, but there was a significant positive relationship at one standard deviation

above the mean of workload ($t(406) = 3.30$, $p < .01$), which means, similar to distributive justice, that the relationship between procedural justice and electronic multitasking is also stronger for employees with high workloads.

Leader satisfaction. Finally, the results of the moderated multiple regression analysis show that the relationship between leader satisfaction and electronic multitasking is moderated by workload, $\Delta F(4, 402) = 3.84$, $p = .05$, $\Delta R^2 = .01$, ß = -.09). This result is illustrated in Figure 4. As shown, the gradient of the slope for low workload is slightly positive, while it is negative in the cases of high workload.

The simple effects tests were conducted, once again, to further investigate the significant interaction. The results revealed a nonsignificant relationship between leader satisfaction and electronic multitasking at one standard deviation below the mean of workload, $t(406) = .55$, $p > .05$. However, there was a significant negative relationship at one standard deviation above the mean of workload ($t(406) = -2.32$, $p < .05$), indicating that the relationship between leader satisfaction and electronic multitasking is stronger in cases of high workloads.

Research Question 3

To explore the potential outcomes of employees engaging in electronic multitasking during meetings, participants were asked about their perceptions of the group's collective productivity during the meeting and also their own individual productivity during that meeting using a one-item indicator (since, as previously mentioned, the longer scales for productivity from Nixon & Littlepage (1992) were highly redundant and therefore not used in analyses). As mentioned, meeting satisfaction was included as a control variable for each analysis due to its significant relationship with

group/individual productivity (r = -.64 for both group and individual productivity) and its theoretical relationship to the outcomes (Cohen et al., 2011), per best practice recommendations about the inclusion of control variables (Spector & Brannick, 2011; Becker et al., 2016).

Group productivity. The results of the hierarchical regression analysis indicate that electronic multitasking was predictive of perceived group productivity, $\Delta F(2, 404) = 12.24$, $p < .01$, $\Delta R^2 = .02$. The regression coefficient for the electronic multitasking variable was negative (ß = -.13), thus indicating that the more employees engage in electronic multitasking themselves, the lower they perceive the group's productivity during the meeting.

Individual productivity. The results of the hierarchical regression analysis indicate that electronic multitasking was also predictive of perceived personal/individual productivity during the meeting, $\Delta F(2, 404) = 20.51$, $p < .001$, $\Delta R^2 = .03$. The regression coefficient for the electronic multitasking variable was negative (ß = -.17), thus indicating that the more employees engage in electronic multitasking, the lower they perceive their own productivity during the meeting.

Post-hoc Analyses

Given the changes that were made to the study after failure of the measurement model, some supplemental analyses were carried out post hoc to better understand any additional relationships.

Follow-up analyses for RQ1. First, a model was tested with all significant predictors from RQ1—which was focused on understanding the individual and meeting-oriented predictors of electronic multitasking—so that I could examine the results of a

simultaneous regression with multiple predictors. The results of the regression, still controlling for age, showed that all significant predictors (conscientiousness, meeting medium, norms for multitasking, and meeting size) combined accounted for 29.2% of the variance in electronic multitasking. In examining the coefficients, norms for multitasking is the largest (ß = .34), followed by meeting medium (ß = .22, where in-person meetings were dummy coded as 0 and virtual meetings were 1), meeting size (ß = .09), and leader satisfaction (ß = -.06).

As another follow-up to RQ1, since there were differences in the amount participants electronically multitask during virtual as compared to in-person meetings (i.e. higher amounts of electronic multitasking in virtual meetings), I tested for differences between those who reported that they attended their recurring meeting via audioconference vs. videoconference. The results show there were not significant differences in electronic multitasking between the two virtual meeting modalities, though the sample sizes for each group were small (M = 2.77, SD = 1.20, N = 38 for audio; M = 2.86, SD = 1.12, N = 59 for video, $t(95) = -.31$, $p > .05$).

As a final supplemental analysis to RQ1, I investigated whether the moderators I proposed in RQ2 were also predictors of electronic multitasking as well. The results of the regression analyses, controlling for age, showed that meeting satisfaction did not have a significant main effect on electronic multitasking ($\Delta F(2, 404) = .01$, $p > .05$, $\Delta R^2 = .00$); however, workload was a significant predictor ($\Delta F(2, 404) = 12.31$, $p < .01$, $\Delta R^2 = .03$). The regression coefficient for the workload variable was positive (ß = .17), thus indicating that the higher an employee's workload is, the more likely he/she is to engage in electronic multitasking.

Follow-up analyses for RQ2. For RQ2, a supplemental analysis that was conducted was examining additional potential moderators of the relationships between the individual and meeting-oriented predictors and electronic multitasking. Variables related to the meeting that could be relevant were tested (i.e. meeting medium, meeting size, meeting length, and meeting frequency) as well as several individual variables (i.e. conscientiousness, managerial status, gender, meeting tenure, work from home, and weekly meeting hours). Out of all of the more than 75 potential interactions that were investigated, controlling for age, only three were significant: 1) conscientiousness moderated the relationship between leader satisfaction and electronic multitasking ($\Delta F(4, 402) = 8.12$, $p < .01$, $\Delta R^2 = .02$, ß = .13) 2) managerial status (i.e. whether a participant is a manager or not, though this does not mean that they were leading the meeting) moderated the relationship between conscientiousness and electronic multitasking ($\Delta F(4, 388) = 24.98$, $p < .001$, $\Delta R^2 = .05$, ß = -.49) and 3) managerial status moderated the relationship between meeting size and electronic multitasking ($\Delta F(4, 400) = 10.86$, $p < .01$, $\Delta R^2 = .02$, ß = .16). To aid in interpretation, these interactions were plotted at one standard deviation above and below the mean for the moderators in Figures 5, 6, and 7 respectively.

Follow-up analyses for RQ3. As a follow-up to RQ3, I tested for a potential curvilinear relationship between electronic multitasking and group/individual productivity. More specifically, a hierarchical multiple regression was run using group and individual productivity as the criterion variables. In Step 1, meeting satisfaction (as a control variable) and electronic multitasking were entered, followed by the squared term of electronic multitasking in Step 2 (Cohen et al., 2003). The results showed that there

was not a significant curvilinear relationship between electronic multitasking and either type of productivity ($\Delta F(3, 403) = 2.92$, $p > .05$, $\Delta R^2 = .00$, ß = -.13 for group productivity; ($\Delta F(3, 403) = 3.52$, $p > .05$, $\Delta R^2 = .01$, ß = -.34 for individual productivity).

DISCUSSION

In this study, I posed three research questions to better understand why employees engage in electronic multitasking during recurring meetings and how multitasking is related to meeting productivity: 1) what are the relationships between the multifaceted predictors (i.e. individual and meeting-oriented variables) and one's own electronic multitasking?; 2) how do meeting satisfaction and workload moderate the relationships between the predictors and electronic multitasking?; and 3) what are the relationships between one's own electronic multitasking and perceived meeting and individual productivity? In this final section, I discuss the results and theoretical implications for each Research Question individually, followed by a discussion of the practical implications of my work, and I end with the limitations of the current study and directions for future research.

Research Question 1

For the first research question, I investigated the main effects of potential predictors of electronic multitasking. I included both "individual-oriented" (i.e. personality traits and individuals' job attitudes) predictors and also "meeting-oriented" (i.e. characteristics of the meeting itself) predictors consistent with the CWB framework and previous meetings literature on multitasking.

In terms of the individual-oriented constructs, conscientiousness was the only predictor with a significant main effect on electronic multitasking, and the relationship was negative. That is, higher conscientiousness was predictive of less electronic multitasking during the meeting. This result is in line with previous CWB literature: as Bowling and Eschleman (2010) explain, since conscientious individuals tend to be rule-

followers and their actions tend to be guided by ethical principles, it would make sense, then, that they are less likely to engage in counterproductive behaviors. Furthermore, meta-analyses by Dalal (2005) and Berry et al. (2007) on CWBs show an average negative relationship between conscientiousness and CWBs of ρ = -.26 and -.23, respectively; these correlations are very similar to this study (the standardized regression coefficient, controlling for age, was ß = -.23). These results suggest that perhaps conscientious individuals understand that engaging with one's electronic devices during a meeting is a deviant behavior, which therefore could result in these meeting attendees minimizing their electronic multitasking.

Before discussing the results of the meeting-oriented predictors, it is important to acknowledge that the other individual-oriented constructs examined in this study (i.e. affective commitment, job satisfaction, organizational justice, and leader satisfaction) did not have significant main effects on electronic multitasking. The commonality between these constructs is that they are all job attitudes. Job attitudes, such as job/leader satisfaction, affective commitment, and organizational justice, are evaluations about some aspect of work that express one's feelings toward and beliefs about one's job (Judge & Kammeyer-Mueller, 2012). In both of the CWB meta-analyses by Dalal (2005) and Berry et al. (2007), the job attitudes were weaker antecedents of CWBs as compared to conscientiousness and other Big Five personality traits (ρ ranging from -.10 to -.20). Berry et al. (2007) even noted that the strongest correlates of deviance were personality and OCB variables, while job attitudes were "considerably below these correlations in terms of magnitude" (p. 417). In theorizing about why the relationships between job attitudes and electronic multitasking might be nonsignificant in the current study, two

reasons come to mind. First, it may be the case that electronic multitasking is too distally related to job attitudes. Research shows that job attitudes are proximally related to general behavior intentions at work, such as intent to quit, rather than specific behaviors (Berta et al., 2018), such as electronic multitasking during meetings in this study. Future research should include more attitudes that are related to meetings specifically (e.g. meeting engagement, meeting involvement, satisfaction with the meeting space, etc.). Examining meeting-specific attitudes as they relate to electronic multitasking during those meetings would likely produce more significant results since they would be more closely related. A second reason for the lack of significant main effects between these job attitude and multitasking variables is that job attitudes can be dynamic. Research done by Woznyj (2017) focusing on the job attitude perceived organizational support (POS) shows that "the daily experiences of employees can generate fluctuations in perceptions of support" (p. 40), which speaks to the fact that job attitudes can fluctuate to some degree. In relating this research to the current study, it is possible that daily ratings of job/leader satisfaction, affective commitment, and organizational justice could be related to whether or not an employee engages in electronic multitasking during that day's meeting(s), rather than their global evaluation. Finally, it is also important to note that while these job attitude predictors did not have significant main effects, several of them produced significant interaction effects when the moderator "workload" was introduced, which I discuss below with Research Question 2.

In addition to examining individual-oriented predictors of electronic multitasking, I also examined meeting-oriented predictors as part of the first research question, since the multitasking is occurring in a group meeting context. All of the meeting-oriented

predictors included in this study—meeting medium, norms for multitasking, and meeting size—had significant main effects on employees' electronic multitasking. First, the results suggest employees are more likely to engage in multitasking if they attend virtually, as compared to attending in-person. This result is in line with research by Clark and Brennan (1991), who found that having a barrier between interactional spaces, which occurs when employees are not collocated for the meeting, decreases the amount of accountability that employees feel during virtual meetings. In turn, this lowered accountability due to the barrier between spaces leads to increases in multitasking, which could be the case for participants in this study who electronically multitasked while attending their recurring meeting virtually.

Another meeting-oriented predictor that had a main effect on electronic multitasking was perceptions of norms for multitasking. This positive, significant result suggests that the more employees perceive that it is normative to multitask during meetings in an organization in general, the more likely it is that they engage in the behavior during their recurring staff meeting. Stephens and Davis (2009) also found a significant relationship between norms for multitasking and employees engaging in the behavior. Thus, the results of the current study provide additional evidence of the social, normative influence on employees choosing to electronically multitask. That is, when employees perceive that multitasking during meetings is acceptable, the behavior seems to spread. It seems that a "culture for multitasking" can form in recurring meetings, departments, and organizations, which is then perpetuated by employees continuing to engage in multitasking.

Finally, the significant positive relationship between meeting size and multitasking suggests that the larger the meeting, the more likely employees are to engage in electronic multitasking. Research by Cardon and Dai (2014) also shows a positive relationship between meeting size and mobile phone use. Furthermore, although Leach et al. (2009) were not investigating multitasking specifically, they found an inverse relationship between meeting size and attendee involvement, of which multitasking could be a byproduct. One possible reason for the positive, significant relationship between meeting size and electronic multitasking could be that in larger groups, individuals tend to engage in more social loafing, where they feel they can exert less effort on tasks (such as the task of contributing to the meeting) as compared to smaller groups/working alone (Kahai et al., 2003). A consequence of social loafing during a meeting could be engaging with one's technological devices while relying on the rest of the group to carry out meeting tasks.

Research Question 2

The second research question was focused on potential moderators of the relationships between the various predictors and electronic multitasking. Specifically, I investigated whether meeting satisfaction and workload would produce interactive effects when added into the model with the individual- and meeting-oriented predictors. The results showed that meeting satisfaction was not a significant moderator of any of the relationships, but workload was in several cases.

With leader satisfaction as a predictor, workload moderated the relationship such that the correlation between leader satisfaction and electronic multitasking was stronger for those with high workloads. Moreover, the slope of the line was negative for those

with high workloads. Thus, this would suggest those who have high workloads are less likely to engage in electronic multitasking when they rate their satisfaction with their leader as higher. Even though those with high workloads might be compelled to multitask given the amount of work they have to get done, these moderation results may suggest that being satisfied with one's supervisor could inhibit this behavior. Since participants were specifically asked to reflect on a recurring meeting that is led by their supervisor, one reason that they might not multitask is not wanting to seem rude or disrespectful to their supervisor leading the meeting, who they have an affinity for. Furthermore, research done by Holtz and Harold (2013) on the relationship between leadership and counterproductive work behavior suggests that supervisors who exhibit consideration towards their subordinates will "likely help to establish behavioral norms indicating that CWBs are inappropriate in the work environment" (p. 493).

Workload moderated the relationships between affective commitment, organizational justice, and electronic multitasking differently than leader satisfaction. In all three instances, those with higher workloads were significantly *more* likely to engage in electronic multitasking at higher levels of affective commitment and organizational justice. For example, according to what these results suggest, an employee who is committed to the organization and also very busy is more likely to engage in electronic multitasking compared to someone who is committed but less busy. For organizational justice, the moderation results would suggest that an employee who feels higher levels of distributive/procedural justice and is experiencing high workload may be more likely to use technology during the meeting in comparison to someone who is experiencing low workload.

These moderation results for workload interacting with affective commitment and organizational justice have interesting theoretical implications. Although I do not know what type of electronic multitasking individuals were engaging in—that is, whether it was self-interested or pro-organizational in nature—the fact that those who are more committed/feeling higher levels of organizational justice are multitasking *more* when they experience high workloads could suggest that they are multitasking in a way that is beneficial to the organization. That is, individuals who are committed to the organization generally engage in constructive activities during their workday/work meetings, especially while busy, because their work is meaningful to them. Thus, perhaps the electronic multitasking they choose to engage in is pro-organizational in nature (i.e. sending/replying to work emails, accomplishing work tasks, etc.). These results might therefore suggest that electronic multitasking could be beneficial to the individuals engaging in it and ultimately to the organization, rather than entirely harmful. Although I acknowledge that there were negative relationships between electronic multitasking and meeting productivity, which I discuss below, the fact that individuals who are highly committed and perceive high levels of organizational justice are actually *more* likely to engage in electronic multitasking when they are feeling overloaded could suggest that they multitask for constructive reasons, at least in certain situations. This finding is counter to much of the literature on CWBs: counterproductive behaviors generally involve purposefully doing work incorrectly, restricting the amount of time working to less than is required by the organization, and harming others or the organization (Spector et al., 2006). However, there is literature to also suggest that CWBs can sometimes be beneficial. Kelloway et al. (2010), for example, proposed that CWBs can be viewed as a

productive form of protest behavior against injustice in the workplace or other dissatisfying work conditions. Furthermore, research by Penney and Spector (2007) and Krischer et al. (2010) has shown, using the theoretical framework of emotion regulation, that some CWBs are performed as a coping mechanism to help deal with stressful work situations. The results of the current study may be in line with these findings, and they point to the fact that multitasking is a complex behavior. While electronic multitasking is associated with decreased meeting productivity, it could be the case that individuals who rate themselves as committed/feel high levels of organizational justice are multitasking to ultimately benefit themselves and the organization, particularly when engaging in the behavior might be a coping mechanism for their stressful workload.

Research Question 3

Finally, the third research question explored the relationship between employees engaging in electronic multitasking and meeting productivity—both their own productivity and their perceptions of the group's productivity—during that recurring meeting. Productivity was operationalized with a one-item measure asking participants to think about their productivity during the meeting and rate the return of time investment for both them personally and for the group collectively. The results showed a negative relationship between electronic multitasking and productivity for both individual and perceived group productivity. That is, the more an employee engages in electronic multitasking, the less productive he/she rates his/her own productivity during that meeting and also the productivity of the collective group. It is important to note, however, that these analyses were correlational in nature, thus meaning that the relationship between electronic multitasking and productivity could be reversed, such that

low productivity of the individual/group during the meeting causes employees to engage in more electronic multitasking. I discuss this in further detail in the limitations/future research section below.

The negative relationship between electronic multitasking and productivity/performance is aligned with previous research from multiple disciplines. For the individual productivity result, work by education scholars Hembrooke and Gay (2003) and Wurst et al. (2008) has shown negative relationships between students' electronic multitasking and their test performance, regardless of whether the multitasking was relevant to the class or not. Although performance on a test and productivity during a meeting are different, it would make sense that both students and employees who spend time on their devices rather than paying attention to the class or meeting are not being productive while they are paying attention to their technology, rather than the task at hand. With regards to the relationship between electronic multitasking and group productivity, research done by Middleton and Cukier (2006) found individuals reported that they regularly attend meetings where attendees are more engaged with their smartphone than the meeting topic at hand. Thus, employees might be spending more time on their devices than they are helping the collective group to achieve the meeting goals.

Overall, the results of the current study show that there are many reasons individuals are electronically multitasking in today's meetings. The data from RQ1 suggest that there are aspects of both the individuals attending meetings, such as conscientiousness, and also of the meeting itself, such as meeting medium, norms for multitasking, and meeting size, that are significantly related to attendees engaging in

electronic multitasking. Furthermore, while it might seem that the results from RQ2 and RQ3 are at odds with one another, I believe they speak to the fact that electronic multitasking during meetings is a nuanced construct. The significant moderation results from RQ2, especially for affective commitment and organizational justice and workload, could be initial evidence that employees engage in multitasking with good intentions at times: although I do not know what type of electronic multitasking they were engaging in, since I examined electronic multitasking in general instead of the self-interested/pro-organizational subtypes, I do know that those who are more highly committed/perceive high levels of organizational justice engage in more multitasking during meetings when they are busy. These individuals could be coping with their high workloads by engaging in this seemingly counterproductive behavior to reduce their stress and accomplish tasks, which suggests they might be multitasking for worthy reasons. On the other hand, results from RQ3 showed a significant negative relationship between electronic multitasking and meeting productivity, which speaks to the fact that individuals engaging in electronic multitasking is ultimately counterproductive to accomplishing meeting goals. Though future research is needed to fully understand the distinction, the results from this study could be initial evidence for a paradox that Wasson (2004) referred to, whereby multitasking "is good for the individual, but bad for the group" (p. 56).

Practical Implications

Since the results from the current study show evidence of an inverse relationship between electronic multitasking and meeting productivity, I offer practical guidelines for how meeting leaders should effectively manage electronic multitasking in their meetings.

Should meeting leaders ban the use of technology in their staff meetings? Though future research is needed to fully the answer to this question, my response is "not completely, but the use of technology should be managed very carefully." The reason for not recommending a total ban, whereby individuals have to leave their devices at their desks and have no opportunity to communicate with others outside the meeting, is twofold: first, it is likely that disallowing technology completely would result in highly dissatisfied meeting attendees, especially given the fact that addiction to our devices, or at least addictive tendencies, is on the rise (Samaha & Hawi, 2016). Also, as mentioned, it is possible that employees are engaging in electronic multitasking that is beneficial to the organization by either multitasking in a way that is productive for their jobs, or perhaps by multitasking in a way that is related to the meeting (e.g. using an intraoffice instant messenger platform to ask a colleague who was not able to attend the meeting for relevant information, or updating an electronic to-do list based on information brought up during the meeting, etc.). Given the potential shortcomings of completely banning electronic devices, I instead suggest that meeting leaders adopt a policy of taking "technology breaks" during their meetings. In this approach, borrowed from recent research by Rogelberg (2019), employees are asked not to use technology during the meeting except for a one- or two-minute break halfway through the meeting during which time they can check their devices and quickly respond to any urgent messages/needs. By adopting the use of technology breaks, electronic multitasking is not allowed to interfere with the meeting, yet employees are comforted knowing that they will be able to respond to personal/work emergencies within a timely manner during the quick break.

In addition to adopting an approach of taking technology breaks during meetings, there are several other specific meeting design choices I suggest meeting leaders make as a result of the findings from the current study.

Host in-person meetings when possible. With regards to the format of the meeting, the results from the current study suggest that meetings should be held in-person as much as possible to reduce attendees' urges to interact with their devices. This recommendation is in line with previous meetings literature. For example, research done by Denstadli et al. (2012) found face-to-face meetings to be more satisfying and engaging for attendees overall as compared to virtual meetings. If it is not possible to host in-person staff meetings due to geographic restraints, requiring attendees to at least turn on their video camera during staff meetings conducted virtually could reduce the barrier between interactional spaces (Clark & Brennan, 1991) and increase synchronicity (i.e. being able to immediately observe other participants' reactions, both verbal and nonverbal; Cameron et al., 2018), which could decrease employees' likelihood to multitask if they are attending virtually.

Reduce meeting size. The results also suggest that larger meetings are associated with increased electronic multitasking. The resulting implication for meeting leaders is that recurring staff meetings should be kept as lean as possible to reduce multitasking by those who attend. This recommendation is in line with findings in the meetings literature showing that attendee involvement is negatively related to meeting size (Leach et al., 2009); by reducing the meeting size, there could be higher involvement from attendees and lower levels of multitasking. In terms of how meeting leaders should reduce the size of their recurring staff meetings, I suggest two techniques borrowed from Rogelberg

(2019): first, it might be possible for meeting leaders to hold two smaller, shorter meetings instead of one large recurring meeting. For example, approximately 25% of participants in the current study indicated that their recurring staff meeting is held monthly. Meeting leaders of these monthly meetings could hold a concise meeting with half of the regular attendees on a biweekly basis in an effort to reduce the number of attendees, increase attendee engagement, and reduce multitasking. A second technique for reducing meeting size is to invite a core group of attendees to attend, but ask ancillary attendees for their input on agenda items before the meeting instead of attending. With this technique, it is key to actually share the input from the ancillary attendees when the topic arises so that their voice is indeed heard by the rest of the group. It is also important to share well-documented meeting notes after the meeting with all attendees to ensure everyone is on the same page and feels included.

Increase meeting effectiveness. Although it is unclear from my correlational study whether elevated electronic multitasking causes lower meeting productivity or lower meeting productivity causes increases in electronic multitasking, it still seems prudent for managers to focus on making their meetings as effective as possible. The practical hope is that a highly engaging and effective meeting leaves no room for multitasking. Based on previous meetings literature, I therefore suggest two tactics to improve meeting effectiveness and hopefully reduce electronic multitasking. First, leaders should create an agenda that is revised for each staff meeting. Meetings research shows that just having an agenda at a meeting is not sufficient for improving effectiveness. Rather, the agenda needs to be distributed beforehand (Leach et al., 2009), attendees should have input into topics included in the agenda (Rogelberg, 2019), and the

agenda needs to actually be completed during the meeting (Cohen et al., 2011). If meeting leaders consistently use a compelling agenda for the meeting, employees may be more likely to pay attention, give their input on important topics, and reduce their multitasking. A second tactic for maximizing effectiveness is meetings—especially long-standing, recurring meetings—should only take place when they are truly needed. That is, if a meeting leader thinks about the agenda for his/her upcoming staff meeting and realizes there are not enough compelling topics to discuss or the information can be disseminated in another way (i.e. email or short video), then he/she should cancel the meeting (Rogelberg, 2019). In the pilot survey for the current study, one of the top four reasons participants gave for why they engage in multitasking was "because I have too many meetings." Thus, by reducing unnecessary meetings, meeting leaders might reduce the amount of electronic multitasking in the ones that do take place. By implementing these techniques in staff meetings—in addition to reducing meeting size and hosting in-person meetings when possible—it is my hope meeting leaders can be excellent facilitators, increase their meeting effectiveness, and decrease electronic multitasking.

Limitations and Future Research

As with any research, there are several limitations to the current study. First, the measurement of electronic multitasking and meeting productivity were problematic. With regards to electronic multitasking, it was my intention to examine the predictors and outcomes of the pro-organizational and self-interested forms of electronic multitasking separately. Despite existing research that examined these as two separate factors (e.g. Yoerger et al. 2017, 2018), I was not able to find support for that differentiation. Therefore, based on the extensive factor analysis evidence, I examined general electronic

multitasking during recurring meetings without differentiating between the types. I was still able to explore how various individual- and meeting-oriented predictors were related to electronic multitasking and also its relationship to meeting productivity. However, future research should continue to probe the determinants and impacts of the pro-organizational and self-interested subtypes of electronic multitasking, since the different ways that employees electronically multitask during meetings could have important theoretical and practical implications (Yoerger et al., 2018). To investigate pro-organizational and self-interested multitasking separately, qualitative research is likely needed to inform revised measures. More specifically, I would need to explore the content domain of electronic multitasking to capture the full range of how employees use technology to multitask during meetings (i.e. what behaviors specifically do they engage in and with what devices). Secondly, it is also imperative to understand if employees can differentiate between electronic multitasking that is pro-organizational versus self-interested. That is, do employees make this distinction when they multitask, or, if they are choosing to multitask, do they engage in all types without differentiating between the productive and unproductive types of this behavior? Both of these goals could be accomplished via qualitative interviews and focus groups. Specifically, participants would be asked a series of open-ended questions, following an interview protocol guide, about how they electronically multitask and how they think about the "target" of their multitasking (i.e. is it self-directed or organizationally-directed). The output from these conversations could then be content analyzed, using existing literature as sensitizing concepts. In turn, according to research on best practices for psychological assessment by Vogt et al. (2004), the information gained from the interviews and focus groups can

ultimately be used "to elaborate conceptualizations of key constructs and identify content that can be incorporated into item development" (p. 234), meaning that the qualitative research would inform revised, quantitative measures. This approach would hopefully result in better, more valid measures of pro-organizational and self-interested electronic multitasking to be used in future studies.

A second measurement issue was capturing participants' ratings of individual and perceived group productivity during the meeting. The original multi-item scales, which were meeting effectiveness measures adopted from Nixon and Littlepage (1992), were indistinct from one another in the current study. That is, they were so highly correlated with each other that there was no differentiation between perceived individual versus group productivity. Therefore, a one-item measure that was also included in the survey, from Rogelberg et al. (2012), was used in the analyses instead. Although this one-item measure had high face validity—it asked individuals to "think about [your/the group's] return on the last X minutes of time investment" using a scale from 1 = *not at all productive for [me/the group]* to 5 = *extremely productive for [me/the group]*—it is problematic from a psychometric standpoint. First, criterion validity is a concern with a one-item measure due to the fact that the single item likely does not adequately capture the content domain of the productivity construct. Also, reliability is also a concern since an internal consistency score cannot be calculated (Nunnally & Bernstein, 1978; Fisher et al., 2016). Since the validity and reliability of the single-item measures of individual/group meeting productivity are unknown, it is difficult to argue that my measures are adequate representations of the construct. It was difficult to find measures of individual/group productivity in the organizational sciences literature, especially as it

relates to meetings. Thus, future research could include a revised measure of productivity, perhaps leveraging the approach mentioned above for improving the electronic multitasking measures. Another alternative would be to include other constructs of interest from the meetings literature that should be theoretically related to electronic multitasking, such as attendee involvement or number of meeting goals achieved.

Another limitation of this research is the reliance on individual-level data exclusively. That is, all data came from individual employees whether I was asking them for information about themselves or about aspects of the recurring staff meeting they attend. Future research should include true, multilevel data since meetings involve a nested data structure of individual attendees in a collective meeting group (Schulte et al., 2012). Collecting such data would allow for a better understanding of the effects of individual multitasking as well as the average group multitasking on meeting productivity in a multilevel model. Also, with regards to multilevel data, the current study largely disregarded potential organizational predictors of electronic multitasking. While I asked participants for their individual perceptions regarding organizational norms for engaging in electronic multitasking during meetings, future research should investigate other constructs at the organizational level, such as company policies regarding multitasking (i.e. several participants in the pilot study mentioned that their organizations have company-wide policies that ban bringing devices to meetings) and industry effects on multitasking (e.g. investigating whether electronic multitasking is more acceptable in technology companies, for example).

Finally, the research design of the current study does not allow us to come to any true conclusions about the causes and effects of electronic multitasking, nor does it allow us to test more complex models, such as mediation. Although previous CWB research has shown that certain individual characteristics, like the ones included in this study, are precursors to counterproductive behaviors (O'Boyle et al., 2011), and meetings research by Yoerger et al. (2017, 2018) has found evidence for electronic multitasking being predictive of lower meeting effectiveness, more research is still needed to make causal claims. With the multiphase survey design, I was able to separate some constructs temporally, but future research should be designed in such a way that true causal inferences can be made. As one example, based on my correlational approach, I cannot currently conclude that individuals engaging in electronic multitasking causes lower meeting productivity, because it could be that lower levels or productivity actually causes attendees to engage in more multitasking. Future research could investigate the causal mechanism using a between-subjects experimental design. That is, participants could be randomly assigned to either an "effective meeting" or "ineffective meeting" condition, whereby confederate meeting leaders either follow best-practices for having a productive meeting, such as those mentioned in the practical implications section, or they do not and instead purposefully lead an ineffective meeting. The dependent variable, electronic multitasking, could then be measured either by participants' self-report or experimenter observation (i.e. observing rates of participants interacting with their technological devices) and compared between conditions. The results from this type of experiment would go beyond the current study and allow for a better understanding of the causal link between productivity and electronic multitasking.

Conclusion

Electronic multitasking during workplace meetings is prominent in today's organizations, yet scholarly research on the behavior, especially in the organizational sciences, is limited. The current study contributes to the research by characterizing electronic multitasking as a counterproductive work behavior and exploring a wide range of predictors from the CWB and meetings literatures to better understand why employees multitask during recurring staff meetings. The results suggest that there are both individual (i.e. conscientiousness) and meeting-oriented (i.e. meeting medium, norms for multitasking, and meeting size) predictors of electronic multitasking. Likely more novel were the moderation results, whereby workload moderated the relationships between affective commitment, organizational justice, and leader satisfaction when predicting electronic multitasking. These results suggest that the likelihood an individual will multitask depends not only certain individual and meeting characteristics, but also how busy they are. These moderation results could serve as initial evidence for individuals multitasking for worthy reasons (i.e. to cope with their high workload). The findings also suggest, however, that electronic multitasking is inversely related to meeting productivity, implying that while multitasking could be beneficial in particular situations for certain individuals, it is still ultimately undesirable for achieving meeting goals. The current study sets the stage for future research to break down electronic multitasking into different types to examine the differences between pro-organizational and self-interested multitasking, which likely have different predictors/outcomes and may explain some of the seemingly paradoxical findings from the current study. A better understanding of what causes employees to engage in electronic multitasking and the potential impacts it

has on employees, meetings, and ultimately organizations, is key as meeting attendees bring more devices into today's conference rooms.

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Table 1

Confirmatory factor analyses model fit indices for measurement model

Model	CFI	TLI	χ^2	df	Difference	RMSEA
10-Factor Model	.90	.89	2576.77	1158		.06*
9-Factor Model (Justice)	.89	.89	2589.22	1159	-12.45	.06*
9-Factor Model (Multi)	.92	.91	2510.01	1163	-79.21	.05*

Note. $N = 404$. 10-Factor model included all focal constructs as separate factors. In the first 9-factor model (justice), procedural and distributive justice were included as a single factor and all other constructs were kept as separate factors. In the second 9-factor model (multi), own self-interested electronic multitasking and own pro-organizational electronic multitasking were combined into a single factor and all other constructs were kept as separate factors. Difference = difference in chi-square values from the previous model. All chi-square and difference statistics are significant at the .05 level.

Table 2

Means, standard deviations, reliabilities, and intercorrelations of focal variables

	M	***SD***	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Conscientious	4.01	0.79	(0.72)							
2. Commitment	3.82	0.91	0.10	(0.87)						
3. Job Sat	4.05	1.00	0.18**	0.68**	--					
4. Procedural Just	3.54	0.96	0.12*	0.52**	0.47**	(0.92)				
5. Distributive Just	3.70	0.01	0.17**	0.34**	0.36**	0.61**	(0.92)			
6. Leader Sat	4.11	0.39	0.18**	0.48**	0.57**	0.47**	0.33**	(0.88)		
7. Norms for Multi	3.52	1.11	-0.14**	0.02	0.02	0.06	0.06	0.02	(0.88)	
8. Mtg Medium	0.19	.40	-0.12*	-0.08	-0.01	-0.03	0.03	0.02	0.21**	--
9. Own Multi	2.10	1.20	-0.26**	0.02	0.00	0.03	0.06	-0.08	0.43**	0.30**
10. Others Multi	2.65	1.20	-0.20**	0.01	-0.04	0.00	0.02	-0.10	0.55**	0.24**
11. Mtg Size	14.51	12.75	0.02	0.04	0.04	-0.06	0.02	-0.03	0.04	-0.05
12. Mtg Satisfaction	3.43	0.91	0.10	0.41**	0.47**	0.37**	0.24**	0.37**	-0.02	-0.06
13. Workload	2.98	1.03	-0.25**	-0.02	-0.20**	-0.10	-0.11*	-0.20**	0.23**	0.11*
14. Indiv Product	2.93	1.33	-0.01	-0.39**	-0.42**	-0.38**	-0.34**	-0.31**	0.01	-0.02
15. Group Product	2.72	1.12	0.02	-0.37**	-0.40**	-0.33**	-0.28**	-0.26**	0.00	-0.01
16. Age	3.36	1.62	0.17**	0.15**	0.10	0.03	0.08	-0.03	-0.20**	-0.02

Note. Table 2 continued on next page.

	M	*SD*	9	10	11	12	13	14	15	16
1. Conscientious	4.01	0.79								
2. Commitment	3.82	0.91								
3. Job Sat	4.05	1.00								
4. Procedural Just	3.54	0.96								
5. Distributive Just	3.70	0.01								
6. Leader Sat	4.11	0.39								
7. Norms for Multi	3.52	1.11								
8. Mtg Medium	0.19	.40								
9. Own Multi	2.10	1.20	(0.93)							
10. Others Multi	2.65	1.20	0.60**	(0.93)						
11. Mtg Size	14.51	12.75	0.09	0.15**	--					
12. Mtg Satisfaction	3.43	0.91	-0.01	-0.10	-0.06	(0.88)				
13. Workload	2.98	1.03	0.24**	0.32**	0.13*	-0.18**	(0.88)			
14. Indiv Product	2.93	1.33	-0.16**	-0.07	0.01	-0.64**	0.04	--		
15. Group Product	2.72	1.12	-0.12*	-0.01	-0.03	-0.64**	0.08	0.66**	--	
16. Age	3.36	1.62	-0.23**	-0.24**	0.01	0.04	-0.10	0.00	0.00	--

Note. N for each correlation ranges from 405 to 407. * $p < .05$; ** $p < .01$. Variables reported here only variables included in the final test of hypotheses. Variables #1-8 and #16 measured in Phase 1; Variables #9-15 measured in Phase 2. "Mtg Medium" was dummy coded (0 = in-person, 1 = virtual meeting), "Mtg Size" was open-ended, "Age" was measured on a scale from 1-6, and all other variables were measured on a Likert-type scale from 1-5.

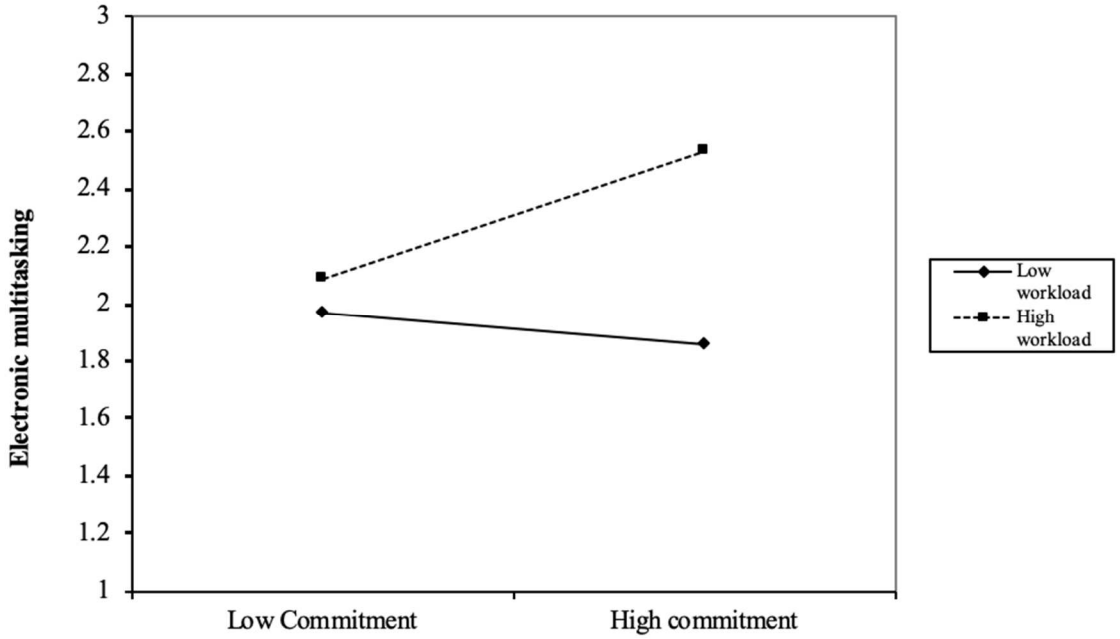

Figure 1. Plot of the significant interaction between affective commitment and workload predicting electronic multitasking.

Figure 2. Plot of the significant interaction between distributive justice and workload predicting electronic multitasking.

Figure 3. Plot of the significant interaction between procedural justice and workload predicting electronic multitasking.

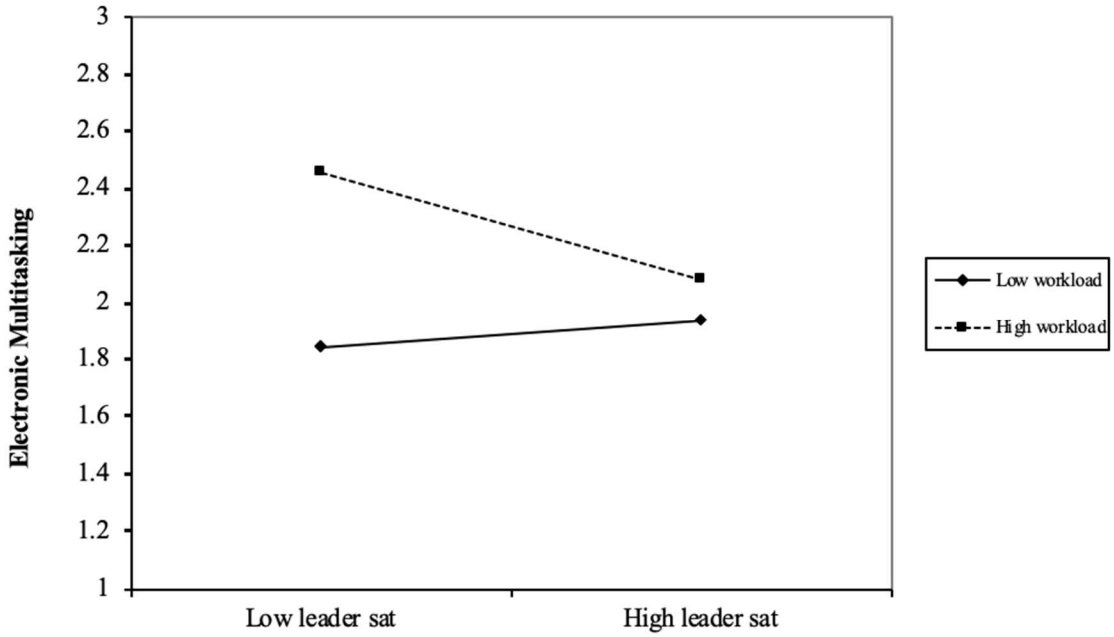

Figure 4. Plot of the significant interaction between leader satisfaction and workload predicting electronic multitasking.

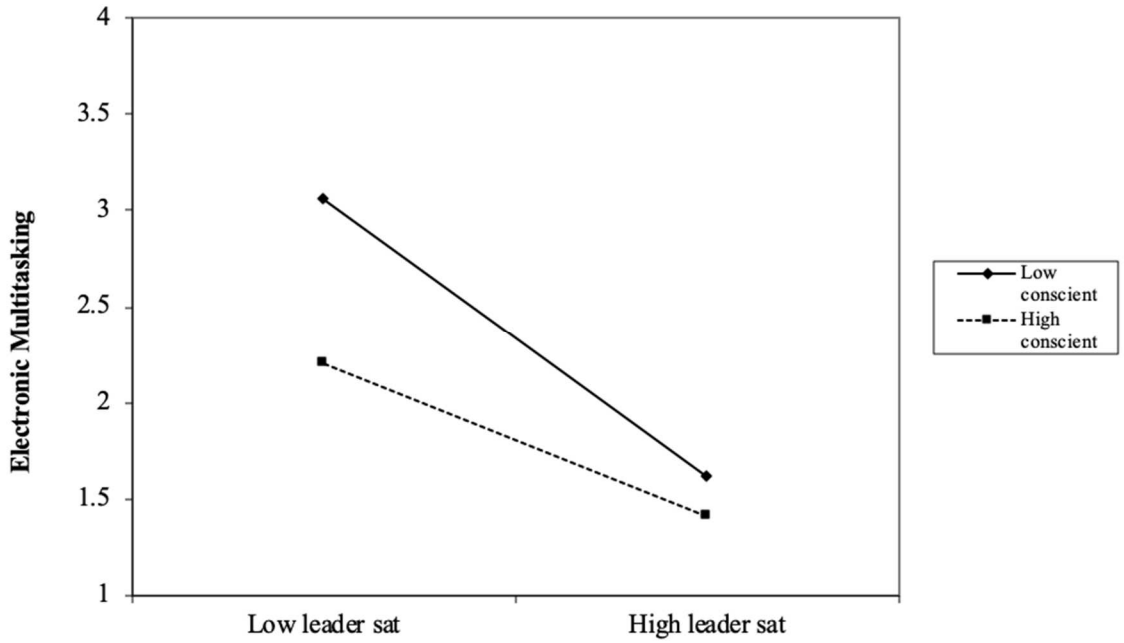

Figure 5. Plot of the significant interaction between leader satisfaction and conscientiousness predicting electronic multitasking (supplemental analysis).

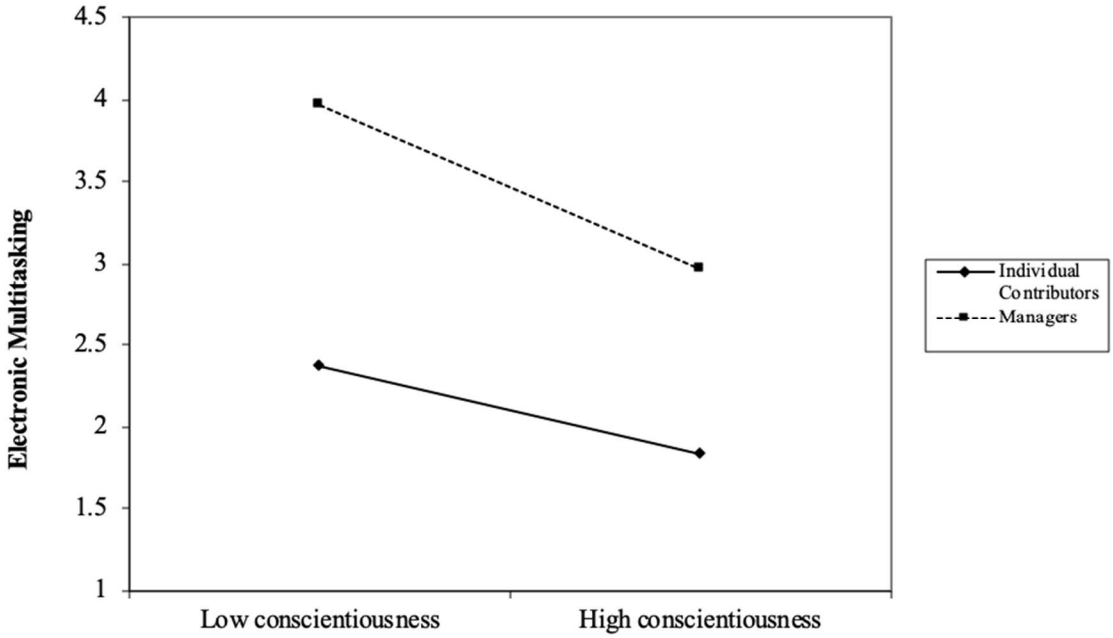

Figure 6. Plot of the significant interaction between conscientiousness and managerial status predicting electronic multitasking (supplemental analysis).

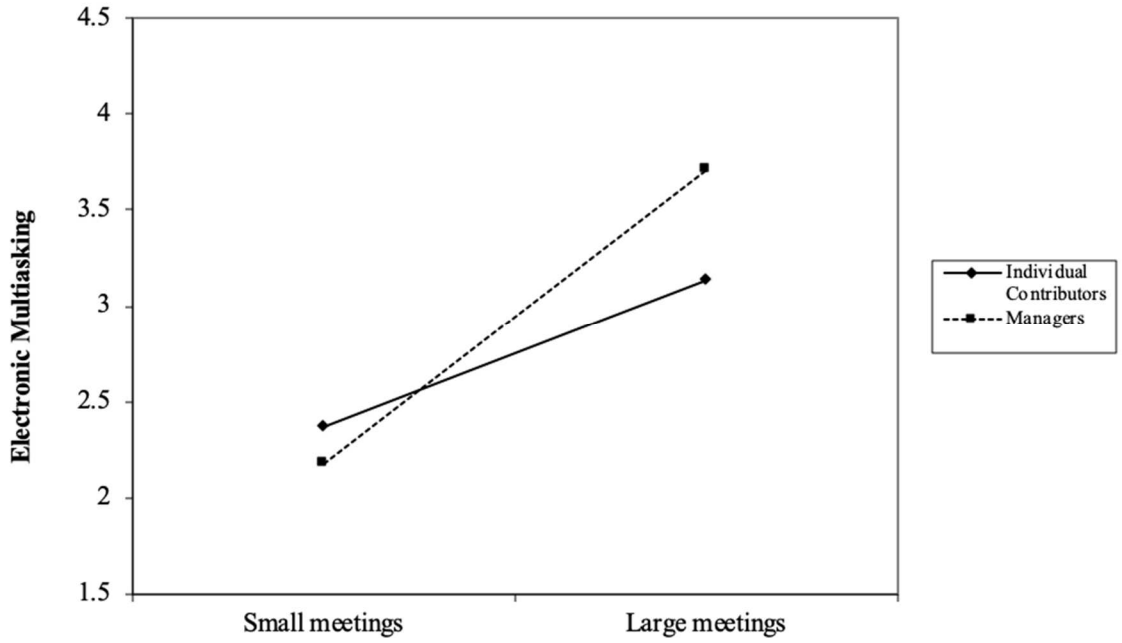

Figure 7. Plot of the significant interaction between meeting size and managerial status predicting electronic multitasking (supplemental analysis).

APPENDIX A: PILOT SURVEY

1. What would you call a meeting that is led by your supervisor, occurs regularly, and involves everyone in the department/team?
    a. Open-ended

2. If someone says they are going to a "team meeting," what do you think that means? In other words, what does "team meeting" mean to you?
    a. Open-ended

3. If someone says they are going to a "team meeting," what do you think that means? In other words, what does "team meeting" mean to you?
    a. Open-ended

4. What was the format of your last staff/team meeting?
    a. Face-to-face
    b. Videoconference
    c. Audioconference (i.e. conference call/virtual meeting that does not use video)
    d. Combination of face-to-face and videoconference (i.e. some attendees were in-person and some participated via video)
    e. Combination of face-to-face and audioconference (i.e. some attendees were in-person and some participated via conference call)
    f. Other (fill in)

5. People sometimes multitask during meetings (using laptop, phone, tablet, or pen/paper). This could be work-related multitasking (multitasking that is not related to the meeting but is work-related) or personal multitasking (multitasking that is non-work-related, such as surfing social media or doodling). When you have multitasked during a meeting before, what were you doing when you were multitasking? You are welcome to list multiple ways. As one example: "I answer work-related emails on my smart phone."
    a. Open-ended

6. In what percentage of staff/team meetings would you say you engage in some sort of multitasking (either work-related multitasking or personal multitasking)?
    a. 0-25%
    b. 26-50%
    c. 41-75%
    d. 76-100%

7. How often do you engage in the following multitasking behaviors during your staff/team meeting?
    a. Use phone/tablet/laptop to send work-related emails
    b. Use phone/tablet/laptop to work on other work-related tasks/projects
    c. Use phone/tablet/laptop to message coworkers about work-related topics
    d. Use phone/tablet/laptop to browse social media

   e. Use phone/tablet/laptop to message (using email, text, or instant messenger) friends/family about personal matters
   f. Use phone/tablet/laptop to make grocery list(s)
   g. Use phone/tablet/laptop to make calendar appointments
   h. Use phone/tablet/laptop to watch video(s)/show(s)
   i. Use pen/paper to draw/doodle
   j. Use pen/paper to write to-do lists
   k. Use pen/paper to make calendar appointments
   l. Other type(s) of multitasking (fill in)

8. People multitask during workplace meetings for a number of reasons. When you multitask during a workplace meeting, why are you doing so? You are welcome to list multiple reasons. As one example: "I multitask because it is a bad meeting."
   a. Open-ended

9. To what extent do you agree that you multitask during workplace meetings because of the following reasons?
   a. Because it is a bad meeting
   b. Because I have a lot of work to do
   c. Because I am bored
   d. Because I do not want to say something that I would regret
   e. Because the meeting is too large
   f. Because I am participating virtually
   g. Because others are multitasking
   h. Because I feel the need to be responsive to others via email/text
   i. Because I have too many meetings
   j. Because I do not feel the need to participate in the meeting
   k. Because I want to keep my emotions in check during the meeting
   l. Other reason (please fill in)

10. What are the top 5 reasons that you multitask during workplace meetings? Please select up to FIVE (5) reasons.
   a. Because it is a bad meeting
   b. Because I have a lot of work to do
   c. Because I am bored
   d. Because I do not want to say something that I would regret
   e. Because the meeting is too large
   f. Because I am participating virtually
   g. Because others are multitasking
   h. Because I feel the need to be responsive to others via email/text
   i. Because I have too many meetings
   j. Because I do not feel the need to participate in the meeting
   k. Because I want to keep my emotions in check during the meeting
   l. Other reason (please fill in)

Demographics about Participants

11. Which of the following most closely matches your job title?
    a. Intern
    b. Entry Level
    c. Analyst / Associate
    d. Manager
    e. Senior Manager
    f. Director
    g. Vice President
    h. Senior Vice President
    i. C level executive (CIO, CTO, COO, CMO, Etc)
    j. President or CEO
    k. Owner

12. What is your gender?
    a. Male
    b. Female
    c. Other/transgender

13. How many years have you worked in your current organization?
    a. Open-ended

14. How many hours per week do you typically work?
    a. Open-ended

15. How many hours per week do you typically spend in workplace meetings?
    a. Open-ended

APPENDIX B: PHASE 1 AND 2 SURVEYS

PHASE 1 SURVEY

Qualifying Questions for the Study

1. Consent - I have read and understand the information provided, and:
    a. 0 = I DO NOT give my consent to participate in this research study (go to the end of the survey)
    b. 1 = I give my consent to participate in this research study

2. Recurring - Do you participate in a recurring staff meeting (also might be called a team meeting or department meeting) that is led by your supervisor? We define a recurring staff/team meeting as…1) A regularly-scheduled gathering of 2 or more individuals for the purpose of a work-related interaction that is more structured than a simple chat, but less structured then a lecture 2) Primarily attended by employees that you work with regularly (in your work group, department, team, etc.) 3) Occurs at least once per month 4) Is led by your supervisor
    a. 0 = No (go to the end of the survey)
    b. 1 = Yes

Meeting Medium

1. S1_You_Attend - How do you typically attend the recurring staff/team meeting? Please select only one option.
    a. 1 = Audio conference (i.e. conference call or virtual meeting that does not use video)
    b. 2 = Video conference
    c. 3 = In-person

Meeting Satisfaction

- 6 items
- Rogelberg, S. G., Allen, J. A., Shanock, L., Scott, C., & Shuffler, M. (2010). Employee satisfaction with meetings: A contemporary facet of job satisfaction. *Human Resource Management*, *49*, 149-172.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please rate the extent to which you agree that your recurring staff/team meeting is ____.

1. S1_Mtg_Qual1 - Stimulating
2. S1_Mtg_Qual2 - Boring (R)
3. S1_Mtg_Qual3 - Unpleasant (R)
4. S1_Mtg_Qual4 - Satisfying
5. S1_Mtg_Qual5 - Enjoyable
6. S1_Mtg_Qual6 - Annoying (R)

Meeting Size

1. S1_Mtg_Size - Approximately how many people attend this recurring staff/team meeting (including yourself)?
    a. Open-ended

Own Self-interested Electronic Multitasking

- 4 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

People sometimes multitask during meetings using technology (phone, tablet, or laptop). This could be *work-related multitasking* (multitasking that is not related to the meeting but is work-related, such as sending work-related emails) or *personal multitasking* (multitasking that is not work-related, such as surfing social media).

In our staff/team meeting, **I** tend to…

1. S1_Multi_Own_SI1 - Use an electronic device (phone, tablet or laptop) to browse the Internet, unrelated to work
2. S1_Multi_Own_SI2 - Spend meeting time using a phone, tablet, or laptop to pass the time without using the device for any work-related purpose
3. S1_Multi_Own_SI3 - Send/reply to emails or text messages that are not related to work
4. S1_Multi_Own_SI4 - Use the meeting time to make progress on personal interests that are unrelated to work

Own Pro-Organizational Electronic Multitasking

- 4 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

In our staff/team meeting, **I** tend to…

1. S1_Multi_Own_PO1 - Use an electronic device (phone, tablet or laptop) to complete work-related (non-meeting related) responsibilities
2. S1_Multi_Own_PO2 - Spend meeting time on work-related (non-meeting related) tasks using a phone, tablet, or laptop
3. S1_Multi_Own_PO3 - Send/respond to work-related (non-meeting related) emails during workplace meetings

4. S1_Multi_Own_PO4 - Use the meeting time to make progress on work-related (non-meeting related) tasks by using a phone, tablet, or laptop

Others' Self-Interested Electronic Multitasking

- 3 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

In our staff/team meeting, **others** tend to…

1. S1_Multi_Others_SI1 - Use instant/text messaging services during the meeting (not related to work)
2. S1_Multi_Others_SI2 - Send/reply to email unrelated to work during the meeting
3. S1_Multi_Others_SI3 - Surf the internet or social media during the meeting (not related to work)

Others' Pro-Organizational Electronic Multitasking

- 3 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

In our staff/team meeting, **others** tend to…

1. S1_Multi_Others_PO1 - Use instant messaging services during the meeting (for work-related purposes)
2. S1_Multi_Others_PO2 - Send/reply to work-related emails during the meeting
3. S1_Multi_Others_PO3 - Surf the internet during the meeting (for work-related purposes)

Workload

- 4 items
- Kirmeyer, S. L., & Dougherty, T. W. (1988). Work load, tension, and coping: Moderating effects of supervisor support. *Personnel Psychology*, *41*, 125-139.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please rate the extent to which you feel ___ at work on most days.

1. S1_Workload1 - Busy or rushed
2. S1_Workload2 - The amount of work you do interferes with how well the work is done

3. S1_Workload3 - Pressure to carry out work duties
4. S1_Workload4 - Your amount of work is more than expected

Conscientiousness

- 4 items
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment, 18*, 192-203.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

In general, I…

1. S1_Conscientiousness1 - Get chores done right away
2. S1_Conscientiousness2 - Like order
3. S1_Conscientiousness3 - Often forget to put things back in the proper place (R)
4. S1_Conscientiousness4 - Make a mess of things (R)

Affective Commitment

- 5 items
- Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, *78*, 538-551.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

Please indicate the extent to which you agree with the following statements.

1. S1_Commitment1 - I feel a strong sense of belonging to my organization
2. S1_Commitment2 - I feel personally attached to my work organization
3. S1_Commitment3 - Working at my organization has a great deal of personal meaning to me
4. S1_Commitment4 - I would be happy working at my organization until I retire
5. S1_Commitment5 - I really feel that problems faced by my organization are also my problems

Norms for Electronic Multitasking

- 4 items
- Stephens, K. K., & Davis, J. (2009). The social influences on electronic multitasking in organizational meetings. *Management Communication Quarterly*, *23,* 63-83.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

Please indicate the extent to which you agree with the following statements.

1. S1_Norms1 - In my organization, it is acceptable for people to use technology during meetings
2. S1_Norms2 - I often see (or hear) others using technology during work meetings

3. S1_Norms3 - I might not see or hear them using technology, but I know people do this during meetings
4. S1_Norms4 - It is rare to attend a meeting where people are not using some form of technology (R)

Job Satisfaction

- 1 item
- Dolbier, C. L., Webster, J. A., McCalister, K. T., Mallon, M. W., & Steinhardt, M. A. (2005). Reliability and validity of a single-item measure of job satisfaction. *American Journal of Health Promotion*, *19*, 194-198.
- 1 = Very dissatisfied; 2 = Somewhat dissatisfied; 3 = Neither dissatisfied nor satisfied; 4 = Somewhat satisfied; 5 = Very satisfied

1. S1_Job_Sat - Taking everything into account, how do you feel about your job as a whole?

Perceptions of Multitasking (Distracting)

- 5 items
- Created for this study
- 1 = Not at all distracting; 2 = Slightly distracting; 3 = Moderately distracting; 4 = Distracting; 5 = Very distracting

How distracting do you find each of the following behaviors during a workplace meeting when another attendee engages in them for non-meeting related purposes?

1. S1_Distract1 - Using a smartphone
2. S1_Distract2 - Using a tablet
3. S1_Distract3 - Using a laptop
4. S1_Distract4 - Using pen/paper
5. S1_Distract5 - Daydreaming

Perceptions of Multitasking (Rude)

- 5 items
- Created for this study
- 1 = Not at all rude; 2 = Slightly rude; 3 = Moderately rude; 4 = Rude; 5 = Very rude

How rude do you find each of the following behaviors during a workplace meeting when another attendee engages in them for non-meeting related purposes?

1. S1_Rude1 - Using a smartphone
2. S1_Rude2 - Using a tablet
3. S1_Rude3 - Using a laptop
4. S1_Rude4 - Using pen/paper
5. S1_Rude5 - Daydreaming

Leader Satisfaction

- 3 items

- Camman, C., Fichman, M., Jenkins, G. D., & Klesh, J. R. 1983. Assessing the attitudes and perceptions of organizational members. In S. E. Seashore, E. E. Lawler, P. H. Mirvis, & C. Camman (Eds.), *Assessing organizational change: A guide to methods, measures, and practices*: 71-138. New York, NY: Wiley.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

Think of your supervisor (here referred to as "leader") and answer the following questions about your satisfaction with him/her in general.

1. S1_Leader_Sat1 - In general, I like my leader
2. S1_Leader_Sat2 - In general, I am satisfied with my leader
3. S1_Leader_Sat3 - In general, I do not like my leader (R)

Distributive Justice

- 4 items
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*, 386-400.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

The following items refer to your outcomes (e.g. salary, promotion decisions) at work. To what extent...

1. S1_Distributive1 - Do your outcomes reflect the effort you have put into your work?
2. S1_Distributive2 - Are your outcomes appropriate for the work you have completed?
3. S1_Distributive3 - Do your outcomes reflect what you have contributed to the organization?
4. S1_Distributive4 - Are your outcomes justified given your performance?

Procedural Justice

- 7 items
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*, 386-400.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

The following items refer to the procedures used to arrive at your outcomes at work (e.g. performance review procedures for determining salary/promotions). To what extent...

1. S1_Procedural1 - Have you been able to express your views and feelings during those procedures?
2. S1_Procedural2 - Have you had influence over the outcomes arrived at by those procedures?
3. S1_Procedural3 - Have those procedures been applied consistently?
4. S1_Procedural4 - Have those procedures been free of bias?
5. S1_Procedural5 - Have those procedures been based on accurate information?

6. S1_Procedural6 - Have you been able to appeal the outcomes arrived at by those procedures?
7. S1_Procedural7 - Have those procedures upheld ethical and moral standards?

Demographics About the Meeting

1. S1_Mtg_Freq - How often does this particular recurring staff/team meeting occur?
    a. 1 = Monthly
    b. 2 = Every 2 weeks
    c. 3 = Weekly
    d. 4 = Daily
    e. 33 = Other (fill in)

2. S1_Agenda_Input - To what extent are you able to give input into the agenda of this recurring staff/team meeting?
    a. 1 = To no extent
    b. 2 = To a small extent
    c. 3 = To some extent
    d. 4 = To a good extent
    e. 5 = To a great extent

3. S1_Mtg_Tenure - How long have you been attending this recurring staff/team meeting?
    a. 1 = 0-3 months
    b. 2 = 4-6 months
    c. 3 = 7-12 months
    d. 4 = 1+ years

4. S1_Mtg_Length_Typical - What is the typical duration of this recurring staff/team meeting?
    a. 1 = 1-30 mins
    b. 2 = 31-60 mins
    c. 3 = 61-90 mins
    d. 4 = 90+ mins

Demographics about Participants

1. S1_WFH - Do you work from home **more than** 50% of the time?
    a. 1 = No
    b. 2 = Yes

2. S1_Education - What is the highest level of education you have completed?

   a. 1 = High school/GED
   b. 2 = Some college
   c. 3 = Associate's Degree
   d. 4 = Bachelor's Degree
   e. 5 = Master's Degree
   f. 6 = Doctoral or Professional Degree (JD, MD)

3. S1_Job_Title - Which of the following most closely matches your job title?
   a. 1 = Entry Level
   b. 2 = Analyst / Associate
   c. 3 = Manager
   d. 4 = Director or Vice President
   e. 5 = President or CEO
   f. 6 = Owner

4. S1_Job_Tenure - How many years have you worked in your current organization?
   a. 1 = Under 2 years
   b. 2 = 2-5 years
   c. 3 = 6-10 years
   d. 4 = 11-20 years
   e. 5 = More than 20 years

5. S1_Gender - What is your gender?
   a. 0 = Female
   b. 1 = Male
   c. 33 = A gender not listed

6. S1_Race - Which category best describes your race? (One or more categories may be selected).
   a. 1 = American Indian/Alaska Native
   b. 2 = Asian
   c. 3 = Black or African American
   d. 4 = Latino/a or Hispanic
   e. 5 = Native Hawaiian/Other Pacific Islander
   f. 6 = White
   g. 33 = Other

7. S1_Manager - Are you currently in a managerial role? If yes, please enter the number of employees you oversee.
   a. 0 = No
   b. 1 = Yes (followed by open-ended text box)

8. S1_Work_Hours - How many hours per week do you typically work (on average)?

    a. Open-ended

9. S1_Mtg_Hours - How many hours per week do you typically spend in workplace meetings (not just your recurring staff/team meeting but all meetings on average)?
    a. Open-ended

10. S1_Org_Type - What best describes the type of organization you work for?
    a. 1 = For profit
    b. 2 = Non-profit (religious, arts, social assistance, etc.)
    c. 3 = Government
    d. 4 = Health care
    e. 5 = Education
    f. 6 = Other

11. S1_Org_Size - Approximately how many employees are at your current organization?
    a. 1 = 1 – 49
    b. 2 = 50 – 99
    c. 3 = 100 – 499
    d. 4 = 500 – 999
    e. 5 = 1,000 – 4,999
    f. 6 = 5,000 or more

Marker Variable

- 3 items
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, *15,* 150-163.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

For the following items, please think about a volunteer experience you've had outside of work anytime over the last 10 years. It could be a volunteer activity that you participate in regularly, occasionally, or just one time.

Please rate the extent to which you agree with the following statements about your very last volunteer experience.

1. S1_Volunteer1 - I had clear planned goals and objectives for my volunteer assignment
2. S1_Volunteer2 - I knew exactly what was expected of me when I volunteered
3. S1_Volunteer3 - I knew what my responsibilities were when I volunteered

Recurring Meeting Info to Receive Phase 2 Survey

In order to be entered into our drawing for one of five $25 Amazon gift cards and to receive the Phase 2 survey (which is much shorter), please enter 1) the date of your next

recurring staff/team meeting and 2) meeting start time below. **Please enter a date before 09/01/2019 if at all possible--data collection will be closing soon after this date**

1. S1_Next_Mtg_Date - Date of next recurring staff/team meeting (mm/dd/yyyy)
2. S1_Next_Mtg_Time - Recurring meeting start time (e.g. 11:00 AM EST)

PHASE 2 SURVEY

Information about the Meeting

1. S2_Typical_Mtg - To what extent was this recurring meeting "typical"? That is, it was typical in terms of number of attendees, duration, etc.?
    a. 1 = To no extent
    b. 2 = To a small extent
    c. 3 = To some extent
    d. 4 = To a good extent
    e. 5 = To a great extent

2. S2_You_Attend - How did you attend the recurring staff/team meeting? Please select only one option.
    a. 1 = Audio conference (i.e. conference call or virtual meeting that does not use video)
    b. 2 = Video conference
    c. 3 = In-person

3. S2_Mtg_Length - What was the duration of this recurring staff/team meeting?
    e. 1 = 1-30 mins
    f. 2 = 31-60 mins
    g. 3 = 61-90 mins
    h. 4 = 90+ mins

4. S2_Mtg_Size - Approximately how many people (including yourself) participated in this recurring staff/team meeting?
    a. Open-ended

Own Self-interested Electronic Multitasking

- 4 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please indicate the extent to which you agree with the following statements about **your** behavior during this recurring staff/team meeting.

1. S2_Multi_Own_SI1 - Used an electronic device (phone, tablet or laptop) to browse the Internet, unrelated to work
2. S2_Multi_Own_SI2 - Spent meeting time using a phone, tablet, or laptop to pass the time without using the device for any work-related purpose
3. S2_Multi_Own_SI3 - Sent/replied to emails or text messages that are not related to work

4. S2_Multi_Own_SI4 - Used the meeting time to make progress on personal interests that are unrelated to work

Own Pro-Organizational Electronic Multitasking

- 4 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please indicate the extent to which you agree with the following statements about **your** behavior during this recurring staff/team meeting.

1. S2_Multi_Own_PO1 - Used an electronic device (phone, tablet or laptop) to complete work-related (non-meeting related) responsibilities
2. S2_Multi_Own_PO2 - Spent meeting time on work-related (non-meeting related) tasks using a phone, tablet, or laptop
3. S2_Multi_Own_PO3 - Sent/responded to work-related (non-meeting related) emails during workplace meetings
4. S2_Multi_Own_PO4 - Used the meeting time to make progress on work-related (non-meeting related) tasks by using a phone, tablet, or laptop

Others' Self-Interested Electronic Multitasking

- 3 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please indicate the extent to which you agree with the following statements about **other meeting attendees'** behavior during this recurring staff/team meeting.

1. S2_Multi_Others_SI1 - Used instant/text messaging services during the meeting (not related to work)
2. S2_Multi_Others_SI2 - Sent/replied to email unrelated to work during the meeting
3. S2_Multi_Others_SI3 - Surfed the internet or social media during the meeting (not related to work)

Others' Pro-Organizational Electronic Multitasking

- 3 items
- Yoerger, M., Mroz, J., Landowski, N., Crowe, J., & Allen, J. (2018). Don't let me down: Technology use, participation, and trust in meetings. Paper presented at the

Society for Industrial and Organizational Psychology Annual Conference, Chicago, IL.

- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please indicate the extent to which you agree with the following statements about **other meeting attendees'** behavior during this recurring staff/team meeting.

1. S2_Multi_Others_PO1 - Used instant messaging services during the meeting (for work-related purposes)
2. S2_Multi_Others_PO2 - Sent/replied to work-related emails during the meeting
3. S2_Multi_Others_PO3 - Surfed the internet during the meeting (for work-related purposes)

Meeting Satisfaction

- 6 items
- Rogelberg, S. G., Allen, J. A., Shanock, L., Scott, C., & Shuffler, M. (2010). Employee satisfaction with meetings: A contemporary facet of job satisfaction. *Human Resource Management*, *49*, 149-172.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please rate the extent to which you agree that this recurring staff/team meeting was ____.

1. S2_Mtg_Qual1 - Stimulating
2. S2_Mtg_Qual2 - Boring (R)
3. S2_Mtg_Qual3 - Unpleasant (R)
4. S2_Mtg_Qual4 - Satisfying
5. S2_Mtg_Qual5 - Enjoyable
6. S2_Mtg_Qual6 - Annoying (R)

Workload

- 4 items
- Kirmeyer, S. L., & Dougherty, T. W. (1988). Work load, tension, and coping: Moderating effects of supervisor support. *Personnel Psychology*, *41*, 125-139.
- 1 = To no extent; 2 = To a small extent; 3 = To some extent; 4 = To a good extent; 5 = To a great extent

Please rate the extent to which you feel ___ at work this week.

1. S2_Workload1 - Busy or rushed
2. S2_Workload2 - The amount of work you do interferes with how well the work is done
3. S2_Workload3 - Pressure to carry out work duties
4. S2_Workload4 - Your amount of work is more than expected

Group Productivity

- 9 items

- Nixon, C. T., & Littlepage, G. E. (1992). Impact of meeting procedures on meeting effectiveness. *Journal of Business and Psychology*, *6*, 361-369.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

For these next set of questions, we want you to think about the productivity of the meeting from two different perspectives: the group/collective's productivity and then your own, individual productivity.

The group's productivity in a meeting is not always the same as every individual's productivity. For example, there could be a situation where the meeting seems like a waste of time for the group—that is, it is not run well, the group does not accomplish the goals set out for the meeting, or it is a meeting that maybe should have been cancelled. However, an individual might feel productive in that same meeting if he/she has a productive side-conversation with a coworker, sends some emails that needed to be sent, or is able to work on a slide deck for the next meeting.

Please evaluate this regularly-scheduled staff/team meeting in terms of how ____ it was for the **group**.

For example, to what extent do you agree that this regularly-scheduled staff/team meeting was a "waster of time" or "productive" for the **collective group** (e.g. meeting important objectives, staying on agenda, etc.). Again, we want you to focus on your perception of how the experience was for the group/collective. **For the group, the meeting was ____.**

1. S2_Productivity_Group1 - Efficient
2. S2_Productivity_Group2 - A waster of time (R)
3. S2_Productivity_Group3 - A productive use of time
4. S2_Productivity_Group4 - Insufficient (R)
5. S2_Productivity_Group5 - Unsuccessful (R)
6. S2_Productivity_Group6 - Productive
7. S2_Productivity_Group7 - Not beneficial (R)
8. S2_Productivity_Group8 - Effective
9. S2_Productivity_Group9 - Useless (R)

Group Productivity 2
To think about the group/collective's productivity in a different way, please answer the following question.

1. S2_Productivity_Group_Overall - You just spent X minutes in a recurring staff/team meeting as part of a group. In thinking about the **group's** productivity during that time, please evaluate your group's collective return on the last X minutes of time investment. (*note: "X" was replaced with their selected answer choice from S2_Mtg_Length)*
    a. 1 = Not productive at all for the group
    b. 2 = Slightly productive for the group

c. 3 = Moderately productive for the group
d. 4 = Productive for the group
e. 5 = Extremely productive for the group

Individual Productivity

- 9 items
- Nixon, C. T., & Littlepage, G. E. (1992). Impact of meeting procedures on meeting effectiveness. *Journal of Business and Psychology*, *6*, 361-369.
- 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree

Now, please evaluate the meeting in terms of how this regularly-scheduled staff/team meeting was for **you personally** (not the group).

For example, to what extent do you agree that this regularly-scheduled staff/team meeting was a "waster of time" or "productive" for **you**. Again, we want you to just focus on your personal experience of the meeting. **For me personally, the meeting was ____.**

1. S2_Productivity_Indiv1 - Efficient
2. S2_Productivity_Indiv2 - A waster of time (R)
3. S2_Productivity_Indiv3 - A productive use of time
4. S2_Productivity_Indiv4 - Insufficient (R)
5. S2_Productivity_Indiv5 - Unsuccessful (R)
6. S2_Productivity_Indiv6 - Productive
7. S2_Productivity_Indiv7 - Not beneficial (R)
8. S2_Productivity_Indiv8 - Effective
9. S2_Productivity_Indiv9 - Useless (R)

Individual Productivity 2

To think about your productivity in a different way, please answer the following question.

1. S2_Productivity_Indiv_Overall - You just spent X minutes in a recurring staff/team meeting. In thinking about **your own** productivity during that time, please evaluate your return on the last X minutes of time investment. (*note: "X" was replaced with their selected answer choice from S2_Mtg_Length)*
    a. 1 = Not productive at all for me
    b. 2 = Slightly productive for me
    c. 3 = Moderately productive for me
    d. 4 = Productive for me
    e. 5 = Extremely productive for me