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Examining the antecedents of work connectivity behavior during non-work time

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ABSTRACT

In this study, we draw from human agency theory to develop the construct of work-related connectivity behavior during non-work time, and conduct a survey to investigate the organizational and individual antecedents of this behavior. Data from 139 full-time working adults in the marketing division of a media organization revealed that work connectivity behavior after-hours is significantly related to the distribution of wireless enabled devices by the organization and organizational norms about connectivity. Our results also indicate that individual characteristics exert different levels of influence depending on the functionality of the device through which connectivity behavior is enacted. Polychronicity was more strongly related to laptop connectivity behavior than to handheld connectivity behavior, whereas role integration preference is only related to handheld connectivity behavior. We also found that organization members were more likely to exhibit continued workplace connectivity behavior during generic "downtime" activities such as traveling or commuting. These results have important theoretical and practical implications.

1. Introduction

Due to the influence of technological innovations and the growth of mobile computing, scholars have suggested that distinctions between work and non-work time are becoming blurred (Hassan, 2003; Kaufman-Scarborough, 2006). In recent years, there has been an enormous increase in the variety of technology-mediated communication devices such as laptops and handheld gadgets (e.g., wireless email and telephony devices, personal digital assistants, pagers, and Bluetooth and mobile applications) that enable individuals to

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connect to the office at anytime and from anywhere. As telecommunication and computing costs have plummeted, power, function and connectivity capabilities have increased (Hill, Ferris, & Martinson, 2003). The advent of such portable wireless technologies is creating a new era of connectivity for social and organizational purposes. The latter has been referred to as "workplace connectivity" (Schlosser, 2002) and it is the focus of this research.

In the past, one needed access to a desktop computer with Internet connection to log-on to workplace servers and/or communicate via email and instant messaging from remote locations. Initially, only 'virtual' employees who performed work outside of the office, such as telecommuters or salespeople, used such tools as the primary means of maintaining their employee relationship (Boswell & Olson-Buchanan, 2007). Nowadays, such connectivity can be achieved through wireless enabled laptops and handheld devices. Wireless handheld devices that support text and voice communication are becoming more ubiquitous among individuals who report to work in traditional office settings. The Blackberry™, in particular, may be the most common mobile communications device, and has replaced the cellular phone as the "must-have" status symbol for the office executive (Goodchild & Hodgson, 2006). Continued advancements in communications technology have resulted in mobile devices that do "everything," such that choosing which device to carry becomes obsolete.

Wireless technology-mediated communication devices, or Wireless Enabled Devices (WED), were designed to make communicating across time and geographic boundaries easier, causing these boundaries to virtually disappear. From the employer perspective, there is a belief that nomadic computing practices facilitate collaboration and increase productivity among workers by removing temporal and spatial barriers (Lyytinen & Yoo, 2002). In contrast, from an employee perspective, the boundaries of time and space that traditionally provided a clear demarcation between work and non-work time are vanishing. Without said boundaries, it becomes possible to remain connected to the workplace from any location, at any time. Thus, "anytime, anyplace connectivity" can easily become "all the time, everywhere" connectivity (Jarvenpaa, Lang, & Tuunainen, 2005). Continuous connectivity makes individuals feel as if they are always "on call" (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007).

Our study is focused on an increasingly prevalent behavior of modern computer users who report to work in a traditional office environment (e.g., Monday through Friday for approximately 8–10 h per day) and yet continue to engage with their workplace during non-work time through mobile WEDs. Accordingly, we define Work Connectivity Behavior After-hours (WCBA) as an organization member's use of portable wireless enabled devices (laptop or handheld) to engage with work or work-related colleagues *during non-work time* (e.g., mornings before work, evenings after work, weekends, or vacations). We use the term "wireless" to describe the type of technology that captures the idea of mobility and freedom from a fixed office space. In particular, we investigate the following research questions: what factors influence connectivity behavior to the workplace during non-work time and what is the nature of the influence of such factors?

This study is part of a new stream of research that has begun to examine the use of communications technologies after-hours to perform job-related functions (Boswell & Olson-Buchanan, 2007; Fenner & Renn, 2004; Mazmanian, Orlikowski, & Yates, 2006). This paper contributes to this emerging area of research by developing the concept of work connectivity behavior after-hours and testing a model of its organizational and individual antecedents from the perspective of human agency theory. First, we present the theoretical background of the study. Second, we discuss the organizational and individual antecedents of work connectivity behavior after-hours and develop the hypotheses. Then, we present the research methodology and results, and we conclude with discussion, implications and directions for future research.

2. Theoretical background

We use human agency theory as the starting place to develop the concept of work connectivity behavior after-hours. Human agency has been used to explain how the installation of the same technology may result in diverse outcomes. In other words, it acknowledges the importance of human choice, free will and preferences that individuals may exercise when interacting with technology (Carroll, 2008). Emirbayer and Mische (1998) conceptualize human agency as a temporally embedded process of engagement with simultaneous influences of three elements: iterational, projective, and practical–evaluative. The iterational element refers to past practices that are reflected in the habits of agents, while the projective element refers to future possibilities and the projective capacity to generate responses to solve problems. The

practical–evaluative element synthesizes these two temporal influences in the context of emergent situations in the present. With regards to technology, this theory suggests that humans are relatively free to enact technologies in different ways, using it minimally, individually or collaboratively, and improvising behavior that produces unanticipated consequences (Boudreau & Robey, 2005).

Cousins and Robey (2005) applied the temporal conceptualization of human agency theory to the realm of nomadic computing and argued these temporal components are positioned to explain different nomadic computing practices, even when the same technologies and company policies are in place. Furthermore, Cousins and Robey (2005) portrayed human agency in a tri-dimensional space consisting of temporal, contextual and spatial dimensions. The temporal dimension considers the actors' capacity to look at the past, present and future in their nomadic computing engagement decisions. The contextual dimension considers the multiple roles that contemporary users play in their professional and personal lives (i.e. mother, CFO, etc.). The spatial dimension recognizes the geographical mobility of modern computer users. Our definition of connectivity behavior encompasses these three dimensions with one important distinction. In the context of work connectivity behavior *after-hours*, typical computer users are no longer within the timeframe of their regular working hours and therefore engage in nomadic computing practices before or after they leave their office. Thus, when these computer users connect to their organization during non-work hours, from any place, they are likely to experience the influence of their multiple roles, and the joint influence of past practices and future possibilities in their present connectivity decisions.

The application of human agency theory for technology use suggests that individuals from the same organization would tend to engage in work connectivity behavior after-hours in varying degrees. Chu and Robey (2008) augmented their use of the theory with attention to the role of social structures as possible influences on human agency. To further understand the drivers of this behavior, we articulate its antecedents in terms of organizational and individual variables. The former reflect the social structure regarding the iterational element of past practices and future expectations about continued connectivity behavior, while the latter capture the personal characteristics that form the basis of habitual practices, as well as the projective element that influence this type of behavior. The tensions between future projective elements (such as expectations or desired outcomes), and past practices (such as habits or personal preferences), are resolved with new patterns of behavior emerging in the present.[2] Although by no means exhaustive, this articulation of antecedents allows for the initial examination of organizational and individual drivers that are likely to influence work connectivity behavior during non-work time.

3. Organizational antecedents

Organizations convey expectations associated with systems use directly through the availability of the system or the technology, or indirectly through the perceptions associated with its use. Specifically, we propose that work connectivity behavior after-hours is influenced by the organizational distribution of mobile communication technology to employees, and subjective norms[3] (or the perception that important others think one should use communication technology during non-work time). On the one hand, these elements represent the iterational element of human agency, in that past social experience becomes schematized and individuals recall, select and apply these schemas to action, trusting that others will do the same (Chu & Robey, 2008). On the other hand, these elements also convey future expectations of connectivity.

3.1. Organizational distribution

A necessary condition for the use of communications devices after work hours is the employees' access to mobile technologies (Sarker & Wells, 2003). It is often the case that to ensure that potential senders and recipients have the ability to communicate after work hours, organizations need to make communication technology available to their employees. By providing wireless communication devices, an organization is directly signaling to its employees the expectation of continuous availability and communication. In

[2] We are grateful to the editor of this journal for helping us articulate the relation between human agency theory and the antecedents proposed in our model.

[3] We classified subjective norms about connectivity as an “organizational” antecedent because it is dependent upon each organizational setting.

contrast, when employees purchase wireless devices on their own they may be buying them for social reasons and not feel the need to use the technology to connect to their workplace. Thus, a potential antecedent of work connectivity behavior after-hours is whether the organization distributes wireless connectivity devices to its employees.

Researchers have found that the use of a communications system by members of one's primary group is an important determinant of a potential user's behavior (Kraut, Rice, Cool, & Fish, 1998). Changes in behavior are likely to occur in the presence of strong organizational signals. Recent evidence indicates that new practices emerge when organizations distribute connectivity devices to their employees. Mazmanian et al. (2006) investigated the use of Blackberry™ devices in a small, U.S. private-equity firm and found that employees felt the need to remain "continuously connected" by constantly checking their email when the company distributed Blackberry™ devices to all its employees.

Hypothesis 1. The distribution of WEDs to organization members will be positively related to an organization member's WCBA.

3.2. Subjective norms

Models of information technology (IT) adoption and diffusion (Taylor & Todd, 1995; Venkatesh & Davis, 2000), as well as research in the communications (Fulk, 1993; Schmitz & Fulk, 1991) literature have all examined the role of social factors on technology use. Subjective norm, defined as, "a person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein & Ajzen's, 1975, p. 302), has been found to influence behavioral intention to use technology, and then actual usage (Taylor & Todd, 1995; Venkatesh & Davis, 2000). A number of recent studies have examined the influence of subjective norms on intentions to use wireless technologies (Lu, Yao, & Yu, 2005; Lu, Yu, Liu, & Yao, 2003; Teo & Pok, 2003). In an organizational context, Turner, Grube, Tinsley, Lee, and O'Pell (2006) found that employees who followed subjective norms in their use of email and IM were awarded higher performance evaluations from their supervisors, after controlling for demographics, hours worked, organizational commitment, and supervisors' media use. Furthermore, employee email and IM use was strongly related to frequency of email use by one's supervisor and IM use by one's supervisor.

Findings from Mazmanian et al.'s (2006) qualitative study of Blackberry™ use also suggested that the expectations of colleagues had an impact on individual use. The communication behavior of senior employees, in particular, appeared to influence the behavior of their junior colleagues, who wanted to "make a good impression on superiors" by responding to messages in an almost instantaneous fashion. Findings revealed that norms about email connectivity through newly distributed Blackberry™ devices prompted employees to check their email constantly (Mazmanian et al., 2006). These results provide further support that subjective norms about connectivity may develop within an organization.

According to Feldman (1984), "norms are formed and enforced only with respect to behaviors that have some significance for the group" (p. 47), but ultimately the behavior is voluntary. Thus, organization members' perceptions that they should be reachable at any time are likely to influence their work connectivity behavior during non-work time. We therefore predict that subjective norms about connectivity will be positively related to an organization member's AWCB.

Hypothesis 2. Subjective norms about after-hours work connectivity will be positively related to an organization member's AWCB.

4. Individual antecedents

The proposed definition of after-hours work connectivity behavior as the use of wireless enabled technology devices to engage with work or work-related colleagues during non-work time, is predicated on integration, or blurring, of work and non-work time. Thus, it is important to examine individual differences that reflect orientations around time and work. Specifically, we focus on polychronicity and role segmentation–integration preference to capture these orientations. In addition, a large body of work in the personnel psychology literature supports the belief that long-term dispositional traits influence individuals' behavior in work settings (Mount & Barrick, 1998). We will therefore examine whether specific personality traits with respect to time use and role

preferences relate to work connectivity behavior after-hours. In particular, given the novelty of wireless enabled devices, we focus on personal innovativeness with information technology (PIIT). These individual antecedents form the basis of habits or recurrent behavior. These elements also represent the projective element of human agency theory, in that individuals may generate alternative possible responses to the problems being confronted in accordance with evolving desires (Chu & Robey, 2008). In other words, individuals who are polychronic may be more likely to engage in WCBA due to their personal preferences (past habits) or due to the expectation that it will make them more effective multitaskers in the future.

4.1. Polychronicity

Polychronicity is defined it as the extent to which people in a culture prefer to be engaged in two or more tasks or events simultaneously (Hall, 1959). According to Bluedorn, Kaufman, and Lane (1992) polychronicity is not dichotomous and similar to other psychological constructs, individuals may fall along a continuum from very monochronic to very polychronic. Several empirical studies have shown that individuals vary in their preference for polychronicity (Bluedorn, Kalliath, Strube, & Martin, 1999; Conte, Rizzuto, & Steiner, 1999; Cotte & Ratneshwar, 1999; Kaufman, Lane, & Lindquist, 1991; Persing, 1999). Polychronicity is particularly suited to the study of communications technology, and researchers have adopted the term to represent one's preference for polychronic communication – "managing of multiple conversations at once within a given time period" (Reinsch, Turner, & Tinsley, 2008; Turner & Tinsley, 2002) – or polychronic interaction (Lee, 1999).

Polychronicity is related to outcomes such as role overload and overlap of work and non-work (Benabou, 1999; Kaufman et al., 1991). One of the reasons for this may be that new forms of communications technology, such as email and IM, are not necessarily used as a replacement for other communication media, but as an additional method for reaching others (Cameron & Webster, 2005; Kraut & Attewell, 1997). Therefore, contemporary workers may use multiple technologies *concurrently* to interact with various colleagues and/or clients at the same time. For example, individuals can be on the phone, responding to email on their Blackberry™, receiving instant messages, and engaging in a face-to-face conversation all at once (Rennecker & Godwin, 2005).

Turner et al. (2006) found that polychronic individuals were more able to adapt to the communication environment of their organization, with regard to email and instant messaging, than less polychronic colleagues. For example, high polychronics were likely to mix different media (e.g., IM, email and phone) while low polychronics (i.e., monochronics) would only engage in multiple conversations if they all involved the same media (e.g., IM). Furthermore, Benabou (1999) found that polychronic individuals perceived the world in a less compartmentalized fashion than their monochronic counterparts, and were more likely to overlap work and leisure time. As such, polychronic individuals are able to perform more than one task at the same time (e.g., checking emails on a Blackberry™ while watching a child's soccer game) or even use two or more technology devices at the same time (e.g., looking for a file on a laptop while responding to an email on a WED). Thus, polychronicity is expected to have a positive influence on work connectivity behavior during non-work time.

Hypothesis 3. An organizational member's polychronicity will be positively related to WCBA.

4.2. Role segmentation–integration preference

Prior research has found that a given pair of roles (e.g., manager and parent) can be arranged along a continuum from high segmentation to high integration (Ashforth, Kreiner, & Fugate, 2000). Furthermore, individuals differ in the degree to which they prefer to segment or integrate their work and home roles (Edwards & Rothbard, 1999). Segmentation refers to the separation, whereas integration refers to the overlap between work and non-work time, artifacts and activities (Nippert-Eng, 1996). For example, individuals who prefer highly segmented roles permit few cross-role interruptions, whereas individuals who prefer highly integrated roles allow cross-role interruptions (i.e., permeable boundary).

Ashforth et al. (2000) suggested that "highly segmented roles tend to be relatively impermeable." Even if one prefers highly segmented roles, however, communication tools exist that may increase the chances for permeability. Permeability is defined as the degree to which a role allows one to be physically located in the role's domain, but psychologically and/or behaviorally involved in another role (Ashforth et al., 2000). In their qualitative study, Mazmanian et al. (2006) reported that Blackberry™ users were unable to disengage from the

workplace, since during time spent at home there was still a compulsion to check messages, making it difficult to know when the workday ended. Allen and Shoard (2005) examined Blackberry™ use among a group of UK police officers, and found they also reported a blurring between work and family time. Earlier research on teleworkers identified a similar pattern. Hill, Hawkins, and Miller (1996) surveyed both mobile teleworkers and office workers from the same organization, and found that although teleworkers reported greater work flexibility, they had a more difficult time balancing work and personal/home life than non-teleworkers.

Olson-Buchanan and Boswell (2006) examined whether one's preference for role integration relates to the use of communication technologies during non-work time. Survey data collected from the non-academic staff (e.g., administrative, clerical and computer support) of a public university indicated that individuals who reported a preference for *higher* work to non-work integration reported setting *fewer* boundaries for using communication technologies during non-work time. This suggests that individuals who prefer role segmentation will be more likely to restrict their use of communication technologies to the work domain, and individuals who prefer role integration will be less likely to establish those boundaries. Finally, Golden and Geisler (2007) interviewed professionals about their PDA use, and found that they believed the devices helped to control the work-life boundary and "interpreted their technological practices as expressions of personal agency" (p. 519). Kreiner, Hollensbe, and Sheep (2009) also found that technology can assist with integration if it is actively managed. We therefore predict that role integration preference will be positively related to work connectivity behavior during non-work time.

Hypothesis 4. An organizational member's role integration preference will be positively related to WCBA.

4.3. Personal innovativeness with information technology (PIIT)

Innovators exhibit a set of personal characteristics that make them more likely to adopt new products or new technologies despite the uncertainty and risk that such adoption would involve. Agarwal and Prasad (1998) argue that in order to focus attention on a specific type of innovation, it is necessary to develop a domain-specific construct, as opposed to a global construct measuring innovativeness. Therefore, they propose PIIT and define it as a personality trait that represents "the willingness of an individual to try out any new information technology" (Agarwal & Prasad, 1998, p. 206). This construct has been found to be an important predictor of technology adoption and use (Jones, Sundaram, & Chin, 2002; Lewis, Agarwal, & Sambamurthy, 2003; Lu et al., 2005).

Since connectivity behavior involves the adoption of relatively new communication devices, we predict that there will be a positive relationship between PIIT and connectivity. We expect that individuals who are more willing to try out new technologies may be more likely to communicate via WED devices.

Hypothesis 5. An individual's level of personal innovativeness with information technology (PIIT) will be positively related to WCBA.

The routine practices and habitual behavior (past) combined with expectations and newly imagined behavior (future) influence work connectivity behavior in the present, which represents the practical–evaluative element of human agency. Fig. 1 shows our research model and summarizes the organizational and individual factors expected to influence work connectivity behavior after-hours.

5. Research design

We tested the hypotheses using an online questionnaire. Participants were members of the marketing division of a media organization in a large metropolitan city in the northeastern US. The group is responsible for direct and retail marketing of company products. We selected this division because it included a mix of employees who perform a variety of functions, including marketing, promotion, operations, finance and creative. In addition, not all employees owned handheld WEDs or laptops, which allowed us to examine the distinctions in WCBA between those who owned the devices and those who did not. The division President sent an email to all members of the division that described the purpose of the research project and provided a URL link to the web-based questionnaire. Of the 274 emails sent, 179 people clicked on the link (65%). Among these individuals, 139 participants (51%) completed the survey.

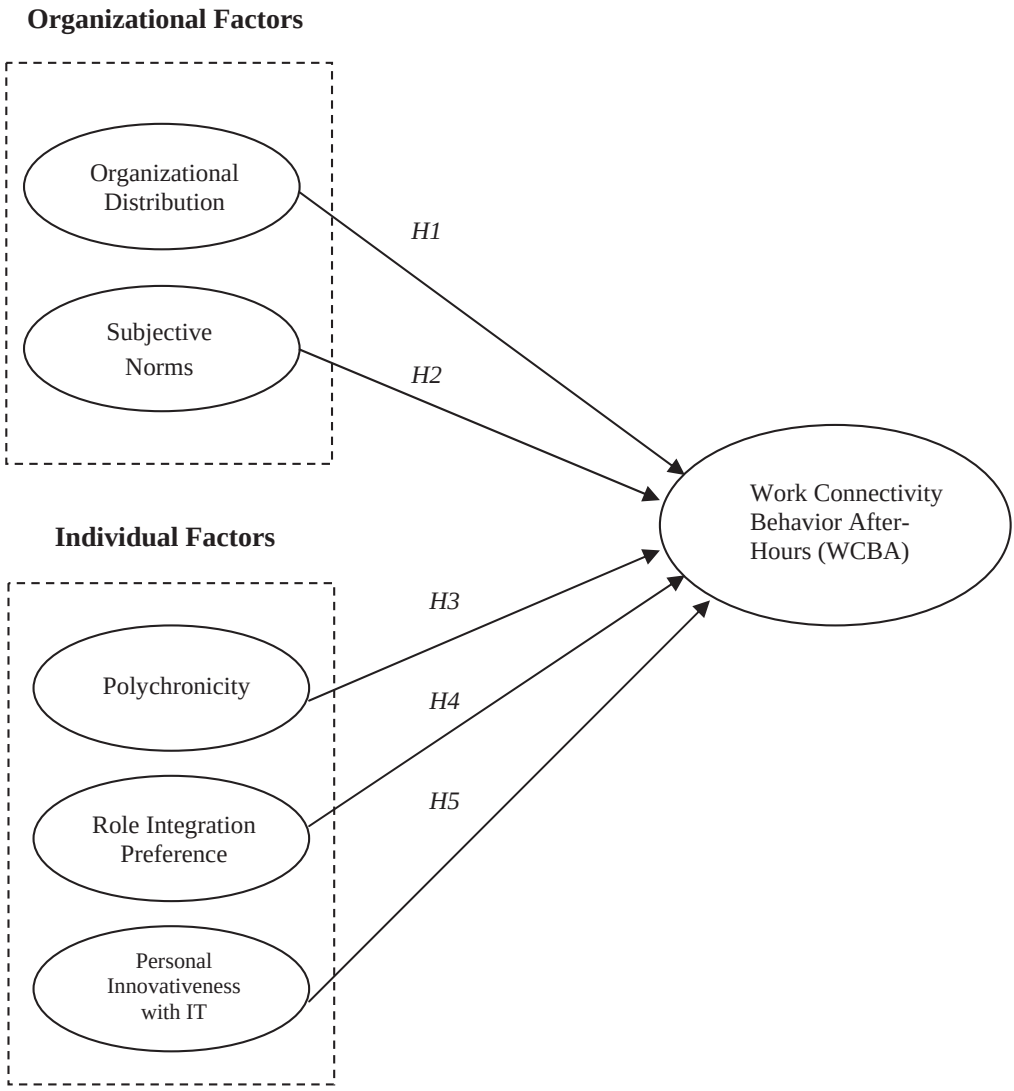

Fig. 1. Research model.

To encourage participation, we invited individuals who completed the survey to partake in a raffle to win a $100 Amazon.com gift certificate. To ensure anonymity, respondents who participated in the raffle were directed to a separate website after completing the survey to enter their email address. Thus, email addresses collected for the raffle were not linked to survey responses.

5.1. Measures

We assessed the independent and dependent variables using self-reported measures. With the exception of two variables (organizational distribution and WCBA), we measured the constructs by using or adapting scales from prior research studies. Unless otherwise noted, we rated responses on a 7-point, Likert-type scale from 1 (strong disagreement) to 7 (strong agreement).

To measure organization distribution, we asked participants if they owned a handheld wireless email device or laptop. If yes, we asked whether they purchased if for themselves or whether it was provided or paid for by their employer. Since we predicted that the distribution of these devices to organization members (i.e., "Provided or paid for by employer") would be positively related to WCBA, we dummy coded these responses as 1, and dummy coded the "Do not own" and "Purchased for self" responses as 0.

Subjective norms about connectivity were measured using an adaptation of Venkatesh and Davis's (2000) scale. We modified the questions to reflect norms around being "connected" and reachable via technology, as opposed to norms for using a generic IT system. For polychronicity, we used the 6-item version of the Inventory of Polychronic Values (IPV) created by Conte and Jacobs (2003) and used in Conte and Gintoft (2005). Conte and Jacobs created the 6-item version as a shorter alternative to the 10-item IPV (Bluedorn et al., 1999). We modified three of the items to change the frame of reference from others to self. Work role segmentation–integration preference was measured using a 5-item scale adapted from a work-to-family permeability scale developed by Clark (2002). Personal innovativeness with information technology (PIIT) was measured using Agarwal and Prasad's (1998) scale. Evidence for reliability and construct validity is found in Agarwal and Prasad (1998) and Lewis et al. (2003).

We developed a new measure for work connectivity behavior after-hours (WCBA). We defined this behavior as an organizational member's use of technology devices to engage with work or work-related colleagues during non-work time. The WCBA measure, therefore, must reflect an individual's *use of* these devices (e.g., handheld wireless enabled devices, mobile phones, pagers, and laptop computers with wireless Internet access, etc.). Burton-Jones and Straub (2006) recommend using diverse conceptualizations of technology usage in the same study. In particular, they suggest collecting "rich" measures that incorporate information about the nature of the activity (e.g., breadth of use, context of use). In order to capture a rich measure, we collected self-reported measures of frequency in context (e.g., how often do you use the devices during particular non-work activities or events). Other studies have used self-reported measures to assess technology usage behavior (Davis, 1989; Turner et al., 2006; Venkatesh & Davis, 2000), and prior research has suggested that self-report usage measures correlate well with actual usage (Deane, Podd, & Henderson, 1998).

To create a measure for WCBA, we followed Boswell and Olson-Buchanan (2007), which measured the use of communication technologies after hours by asking respondents to report the frequency (on a Likert-type scale) with which they used an array of communication technologies to perform their job during non-work hours. They assessed the use of five different technologies: cell phones, email, voice mail, PDA's and pagers. In their study, responses to the individual technologies were averaged to create an overall index of reported communication technology use after-hours. Given this early work, a goal of the current study was to improve upon the reliability of Boswell and Olson-Buchanan's measure by (1) asking about the use of a specific technological device (e.g., wireless enabled device) as opposed to asking about the communication medium (e.g., email), and (2) asking how frequently each device is used during a specific non-work activity or event (e.g., shopping, traveling, dinner with friends, etc.). Consistent with Boswell and Olson-Buchanan, we averaged the responses to the individual technologies to create an overall index of WCBA.

5.1.1. Control variables

We collected the following demographic variables to be used as control variables: age, gender, marital status and job level. We controlled for age and gender because prior research has shown that technology use and acceptance may be affected by age and gender (Harrison & Rainer, 1992; Venkatesh & Morris, 2000). In addition, we controlled for marital status, since an individual's family structure and demands may influence technology use after hours (Boswell & Olson-Buchanan, 2007; Standen, Daniels, & Lamond, 1999). We also controlled for job level, which may influence technology use.

6. Results

Table 1 reports the descriptive information for the sample. We obtained demographic information (e.g., age, gender, job level) on the entire division and found it was not significantly different from the sample that responded. Some salient demographic characteristics of the sample indicate that 69% of the sample is female, 40% of respondents are married, almost a quarter has children and the average commute to work is 46 min one way. About a quarter of the sample received handheld WED from the employer organization and almost 20% received laptops.

Table 1
Demographics.

N	139
Average age	34.4
% Female	69%
% Married	40%
% With children	23%
Average commute (in minutes)	46
Job level	
Administrative assistant	2%
Asst/assoc manager	23%
Manager	41%
Asst/assoc director	4%
Director	18%
Vice president	7%
Other	5%

6.1. Statistical analysis

We entered all survey responses into SPSS 17.0 for Windows. We calculated general descriptive statistics and correlations among the constructs, as well as Cronbach's alpha reliability coefficients for each of the scales. Table 2 reports the results of these analyses.

We conducted the Harman one-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) to assess the threat of common methods bias. We entered all the questionnaire items (excluding organization distribution and WCBA variables) into an exploratory factor analysis (EFA). The data would have a common methods bias problem if a single factor emerged from the analysis, or if one general factor accounted for the majority of the covariance among the measures. A single factor did not emerge in our analyses, and the first factor accounted for 25% of the total variance. Results from this test suggested that common method effects are not a likely contaminant of the results observed in this investigation. All the items together accounted for 66% of the total variance. In addition, all of the items loaded significantly on their assigned latent constructs, and Cronbach's alpha value for each scale was above the recommended 0.70 value (Nunnally, 1967). Results are reported in Table 3.

6.1.1. Test of hypotheses

We used hierarchical multiple regression to examine the relationship between WCBA and the independent variables, controlling for gender, marital status, age and job level. Results, shown in Table 4, revealed that for the organizational antecedents, the distribution of wireless technology (i.e., handhelds and laptops) to employees by their organization was positively related to WCBA ($b = 0.54$, $p < 0.001$),

Table 2
Descriptive statistics and correlations[a] (n = 139).

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Age	34.3	9.0										
2. Gender	1.30	0.46	0.11									
3. Marital status	1.39	0.49	0.44	0.11								
4. Job level	3.71	1.68	0.45	0.17	0.30							
5. Tech distribution	0.44	0.69	0.08	0.20	0.14	0.47						
6. Norm	4.50	1.14	−0.08	−0.07	0.01	0.06	0.22	**0.78**				
7. PIIT	4.58	1.22	−0.37	0.06	−0.14	−0.24	0.17	0.07	**0.87**			
8. Polychronicity	4.62	1.06	0.09	−0.07	0.05	0.07	0.17	0.16	0.12	**0.88**		
9. Role integration	4.42	1.18	0.11	0.10	0.07	0.12	0.04	0.27	0.03	0.25	**0.85**	
10. WCBA	9.85	12.7	0.10	0.20	0.07	0.28	0.62	0.28	0.23	0.28	0.24	**0.91**

Alpha internal consistency reliability coefficients for scales appear on the main diagonal in **bold**.
[a] Correlations greater than 0.16 are significant at the $p < 0.05$.

Table 3
Questionnaire items and exploratory factor analysis results[a].

	1	2	3	4
(1) Subjective norm				
Most employees at my organization continue to check email and voicemail even when they are not at work.	0.090	−0.084	−0.077	**0.715**
It's normal to be reachable throughout the day and evening at my organization.	0.004	0.209	0.077	**0.791**
Most people who are important to me think that I should be reachable throughout the day and evening.	0.068	0.140	0.081	**0.821**
The people at my organization whose opinions I value check their email and voicemail even when they are not at work.	0.095	0.086	0.008	**0.705**
(2) Polychronicity				
I like to juggle several activities at the same time.	**0.848**	0.085	0.134	0.195
I prefer to do one thing at a time. (R)	**0.862**	0.068	0.007	0.027
I enjoy trying to do many things at once.	**0.827**	0.094	0.088	0.067
When I work by myself, I usually work on one task at a time. (R)	**0.650**	0.156	−0.134	0.042
I am happiest when I complete one task before beginning another. (R)	**0.753**	0.192	0.033	−0.054
I believe I do my best work when I have many tasks to do.	**0.726**	−0.049	0.150	0.094
(3) Role integration preference				
I don't mind receiving work-related calls while I am at home.	0.063	**0.826**	−0.049	0.044
I don't like having work-related items at my home. (R)	0.300	**0.747**	−0.025	0.052
I am willing to hear from people related to my work while I am at home.	−0.053	**0.831**	0.015	0.166
I don't like being stopped in the middle of my home activities to address a work concern. (R)	0.213	**0.744**	−0.004	−0.100
I am willing to take care of work-related business while I am at home.	0.038	**0.715**	0.129	0.312
(4) PIIT				
If I heard about a new information technology, I would look for ways to experiment with it.	0.109	−0.001	**0.851**	0.067
In general, I am hesitant to try out new information technologies. (R)	−0.060	−0.032	**0.792**	−0.032
Among my peers, I am usually the first to try out new information technologies.	0.123	0.010	**0.896**	0.000
I like to experiment with new information technologies.	0.049	0.063	**0.833**	0.051

[a] Principal component analysis, varimax rotation, and total variance explained 66%.

which supported Hypothesis 1. In addition, subjective norms about work connectivity during non-work time was positively related to WCBA ($b = 0.16$, $p < 0.05$), which supported Hypothesis 2.

Hypotheses 3–5 examined the relationship between individual difference variables and WCBA. Results revealed that polychronicity was positively related to WCBA ($b = 0.17$, $p < 0.05$) and provided support for Hypothesis 3. The relationship between role integration preference and WCBA approached significance but did not meet the threshold ($b = 0.12$, $p < 0.10$). Thus, Hypothesis 4 was not supported. No support was found for Hypothesis 5 either because PIIT was not related to WCBA ($b = 0.05$, NS). The independent variables accounted for 50% of variance in WCBA.

6.1.2. Additional analyses

Both handheld devices and wireless enabled laptops allow for continuous connectivity; however, the functionality of these devices is essentially different. Laptops enable employees to conduct a wider range of work-related activities, including handling email and working on documents, and engage in computer-based multitasking (Benbunan-Fich & Truman, 2009). In contrast, handheld devices are mainly suitable for communication-related activities and mono-tasking. Because the WCBA construct in the first model reflects both handheld and laptop usage, we unbundled this dependent variable into two dimensions – handheld WCBA and laptop WCBA – and ran two additional regression models, one for handheld and another one for laptops. The results of these models are shown in Tables 5 and 6, respectively.

We examined the standardized regression coefficients within the two models and found the independent variables differentially related to handheld WCBA and laptop WCBA. In particular, for the organizational variables, the distribution of handheld devices was significantly related to WCBA ($b = 0.77$,

Table 4
Regression results for WCBA: handhelds and laptops.

Indep. variables	Dependent variable: WCBA			
	Step 1 ß	Step 2 ß	Step 3 ß	Step 4 ß
Gender	0.19*	0.09	0.11	0.11
Marital status	−0.03	−0.04	−0.05	−0.06
Age	−0.06	0.06	0.09	0.07
Job level	0.28**	−0.05	−0.06	−0.04
Org. distribution		0.63***	0.59***	0.54***
Subjective norms			0.22**	0.16*
Polychronicity				0.17*
Role integration				0.12^
PIIT				0.05
R^2	0.12	0.40	0.45	0.50
Total *F*	3.83**	15.55***	15.58***	12.35***
Δ R^2		0.29	0.05	0.05
Δ *F*		55.36***	9.82**	3.69*
df	117	116	115	112

^ $p<0.10$.
* $p<0.05$.
** $p<0.01$.
*** $p<0.001$.

$p<0.001$, in Table 5), whereas the distribution of laptops approached significance ($b=0.16$, $p<0.10$, in Table 6). In contrast, norms about work connectivity during non-work time were significantly related to WCBA in the laptop model ($b=0.25$, $p<0.01$, in Table 6) but unrelated to handheld WCBA. For the individual variables, the results show that polychronicity was significantly related to laptop WCBA ($b=0.37$, $p<0.001$, in Table 6) but unrelated to handheld WCBA. In contrast, role integration preference was significantly related to handheld WCBA ($b=0.14$, $p<0.05$, in Table 5) but unrelated to laptop WCBA. Consistent with the original analysis, the results suggested that PIIT was not related to either handheld or laptop WCBA.

Table 5
Regression results for WCBA: handhelds only.

Indep. Variables	Dependent variable: WCBA for handhelds			
	Step 1 ß	Step 2 ß	Step 3 ß	Step 4 ß
Gender	0.25**	0.12	0.13	0.12
Marital status	−0.02	−0.02	−0.03	−0.04
Age	−0.04	0.07	0.08	0.07
Job level	0.33**	−0.11	−0.11	−0.10
OD handhelds		0.81***	0.78***	0.77***
Subjective norms			0.09	0.04
Polychronicity				0.03
Role integration				0.14*
PIIT				0.03
R^2	0.19	0.64	0.64	0.66
Total *F*	6.71***	40.32***	34.50***	24.59***
Δ R^2		0.45	0.01	0.02
Δ *F*		142.3***	2.61	2.35
Df	117	116	115	112

* $p<0.05$.
** $p<0.01$.
*** $p<0.001$.

Table 6
Regression results for WCBA: laptops only.

Indep. variables	Dependent variable: WCBA for laptops			
	Step 1 ß	Step 2 ß	Step 3 ß	Step 4 ß
Gender	−0.04	−0.06	−0.04	−0.02
Marital status	−0.03	−0.04	−0.05	−0.06
Age	−0.09	−0.05	−0.01	−0.06
Job level	0.03	−0.04	−0.08	−0.08
OD laptops		0.20*	0.19*	0.16^
Subjective norms			0.31**	0.25**
Polychronicity				0.37***
Role integration				0.06
PIIT				0.00
R^2	0.01	0.05	0.14	0.28
Total *F*	0.35	1.20	3.23**	4.93***
Δ R^2		0.04	0.09	0.14
Δ *F*		4.55*	12.73**	7.28**
Df	117	116	115	112

^ $p<0.10$.
* $p<0.05$.
** $p<0.01$.
*** $p<0.001$.

7. Discussion

In the present study, we developed and tested a model of work connectivity behavior after-hours, defined as an organization member's use of portable wireless enabled devices to engage with work or work-related colleagues during non-work time. Based on human agency theory, we predicted there would be differences in connectivity behavior among employees of the same organization due to the influence of organizational and individual antecedents. Organizational factors include the practices and perceptions that signal the expectation to engage in work connectivity behavior after-hours, while individual factors capture the personal characteristics that influence this type of behavior. We tested the model within a single organization sample (N = 139) in order to investigate the organizational and individual antecedents of this type of behavior.

7.1. Organizational antecedents

In terms of organizational factors, our results indicate that the distribution of certain types of technology devices by an employer was a key driver of work connectivity behavior after-hours. Specifically, the distribution of handheld WEDs was more strongly related to WCBA than the distribution of laptops. One explanation for this finding may be that, among this group of respondents, organization members were more likely to receive a handheld WED than a laptop. Results revealed that 25% of employees received a handheld WED from the organization, whereas only 19% received a laptop. Another explanation may be that handheld WEDs convey stronger expectations for work-related communication than laptops. Handheld WEDs enable organization members to rapidly review and respond to email communication in a mobile environment. This suggests that monitoring work email is a primary activity that drives connectivity behavior. Although laptops can be used to review and respond to email, they are more likely to be used to log-on to network services, access work documents and update files. They are less mobile than handheld WEDs.

We performed an additional analysis to determine whether individuals who purchased handheld WEDs themselves engaged in work connectivity behavior after-hours to the same extent as those who received the devices from the organization. In other words, does owning a handheld WED relate to WCBA if it was not distributed by the organization? Results revealed that the relationship between handheld WED ownership and WCBA was stronger for individuals who received the device from the organization ($b = 0.77$, $p<0.01$) than for individuals who purchased one on their own ($b = 0.08$, NS). This suggests that WCBA is not significantly influenced by ownership alone, but rather by the distribution of these devices by

the employer. It appears that organizational distribution acts as an explicit signal conveying the obligation to exhibit connectivity behavior.

The need to exhibit after-hours work connectivity behavior may be influenced by subjective norms about connectivity. In fact, the results indicate that subjective norms about connectivity were significantly related to work connectivity behavior after-hours ($b = 0.16$, $p < 0.05$ in Table 4). When we examined handheld WCBA and laptop WCBA separately, however, we found that subjective norms were significantly related to laptop WCBA ($b = 0.25$, $p < 0.01$, in Table 6) but unrelated to handheld WCBA. As discussed earlier, laptops enable employees to conduct a wider range of work-related activities, including handling email and working on documents. This suggests that perhaps when one is given a laptop, expectations develop that the employee should bring work home and connect to the office. While device distribution acts as an explicit signal, subjective norms indicate the need for compliance.

7.2. Individual antecedents

In addition to organizational distribution and subjective norms about connectivity, we examined several individual difference variables that could explain work connectivity behavior after-hours. These were polychronicity, role integration preference, and PIIT. Results from the analyses show that polychronicity ($b = 0.17$, $p < 0.05$, in Table 4) was related to WCBA, but role integration preference and PIIT were not. When we examined handheld WCBA and laptop WCBA separately, however, we found several differential relationships worthy of note.

First, polychronicity was more strongly related to laptop WCBA ($b = 0.37$, $p < 0.001$, in Table 6) than to handheld WCBA ($b = 0.03$, NS, in Table 5), whereas role integration preference was more strongly related to handheld WCBA ($b = 0.14$, $p < 0.05$, in Table 5) than to laptop WCBA ($b = 0.06$, NS, in Table 6). This speaks to the nature of mobile work being conducted with laptops. Laptops may be the ideal tools for polychronics because they enable multitasking within computer-based activities (Benbunan-Fich & Truman, 2009). Whereas handheld WEDs are used primarily for email and voice communication, laptop users may work with multiple applications at one time (e.g., Internet browsing, reviewing and revising documents, responding to email and instant messages). While engaged in these applications, laptop users may be focused on their work and be less open to cross-role interruptions.

In contrast, handhelds are an ideal tool for those individuals who prefer integration or permeability between their work and home lives. Ashforth et al. (2000) defined permeability as the degree to which a role allows one to be physically located in the role's domain, but psychologically and/or behaviorally involved in another role. Individuals who prefer highly integrated roles will allow for cross-role interruptions in the form of emails and phone calls, which handhelds allow. This finding builds upon earlier work by Olson-Buchanan and Boswell (2006). They found that individuals who reported a preference for higher work to non-work integration reported setting fewer boundaries for using communication technologies during non-work time, but they did not measure actual technology use. Our study included an assessment of reported technology use and the findings are consistent.

In order to learn more about the nature of the activities that respondents were concurrently performing, we further examined the data related to the WCBA measure. We had asked respondents to report the frequency (never, rarely, sometimes, very often and always) with which they engaged in connectivity behavior during a particular event (e.g., exercising, meal at a restaurant, party, etc.). We summed the "sometimes," "very often," and "always" responses together for each event to rank them. Results revealed that for laptops, people most frequently used them while traveling (40%), on vacation in the United States (36%), on vacation abroad (14%), during a meal at home (15%), and commuting (4%). For handheld WEDs, individuals most frequently used them while traveling (29%), commuting (26%), on vacation in the United States (25%), shopping (20%), during a professional sporting event (14%), during a family member's/friend's sporting event (9%), during a family/friend party (9%), on vacation abroad (9%), during a meal at a restaurant (8%), and during a meal at home (7%).

These results reveal an interesting finding. Organization members exhibit work connectivity behavior after-hours more frequently during generic "downtime" (e.g., traveling, commuting, shopping) as opposed to during specific events (e.g., a child's soccer game, dinner with friends, a date). This suggests that respondents made the most of downtime by monitoring emails on the commute home, or while waiting at the airport, as opposed to checking emails during a child's event. Engaging in work connectivity behavior

during downtime activities may actually enable organizational members to disconnect from work during important non-work events (e.g., at a parent–teacher conference). The primary downtime activities for work connectivity behavior after-hours are traveling and commuting. This observation raises the question of whether the commute home should be considered work or non-work time. Although in the current study, we treated it as non-work time, it is possible that organization members who engage in WCBA while commuting view it as another extension of the workday. Do workplace boundaries and associated roles end when an employee leaves the office for the day, or when s/he arrives home? It should further be noted that we did not specifically ask respondents how they commuted but given the location of the study (large metropolitan city) it is likely they traveled to work via train or bus. Traveling by public transportation obviously affords extended work behavior more so than commuting by car. Those employees who commute by car, however, may find other ways to multi-task that differ from train or bus commuters (e.g., making phone calls).

With respect to personal innovativeness with information technology (PIIT), which represents the willingness of an individual to try out new Information Technologies, we further examined handheld and laptop WCBA separately, and found that PIIT was not related to either handheld or laptop WCBA. This finding suggests that perhaps the novelty effect of having a handheld or laptop device has worn off among today's office workers. In other words, work connectivity behavior after-hours is less about the uniqueness of the technology and more about the actual functionality of the tools.

Initially, we tested our model by bundling handheld and laptop WEDs into a single technology category because they were both portable and allowed workplace connectivity. These two types of technology devices differ in their degree of portability and internal functionality. When we ran the model separately for each device category, important differences emerged. Depending upon the type of device used for connectivity, some antecedents appear to be more important than others. Future research should investigate the extent to which specific technology capabilities influence work connectivity behavior during non-work time. Alternatively, more detailed specifications of the WCBA construct could also provide fruitful avenues for future research.

7.3. Limitations

These findings should be interpreted in light of the limitations of the current study. First, the cross-sectional design limits the ability to find direct causal relationships. Although we conceptualize the organizational and individual variables of our research model as *antecedents* of work connectivity behavior after-hours, it is conceivable that the opposite may be true. For example, does the distribution of technological devices lead to WCBA or do employees whose jobs require them to be in constant contact request these technology devices from their organization? In this organization, job level was related to organizational distribution ($r = 0.47$), suggesting that more senior employees received the devices. Based on these results, we cannot conclude that distribution of handheld devices *causes* WCBA. Rather, we can only say that they are related to each other. Furthermore, since we collected the data from each sample via one questionnaire at the same time, the results may suffer from common method bias. We performed the Harman one-factor test (Podsakoff et al., 2003) and the results indicate that common method effects are not a likely contaminant of the reported findings.

Second, the findings may not be generalizable to other populations, or to other settings. The respondents came from a single organization in the northeastern United States. While the results from this sample may be generalizable to similar departments within comparable media organizations from the same city, we cannot rule out that idiosyncratic factors specific to this organization have an influence on the reported findings. For example, given the location of our study, our respondents were more likely to commute via public transportation (e.g., train or bus) as opposed to driving a car. Future studies are needed to assess whether mode of commuting influences WCBA.

A third potential limitation relates to the definition and measurement of work connectivity behavior after-hours. We defined WCBA as "an organizational member's use of portable wireless enabled devices to engage with work or work-related colleagues during non-work time (e.g., mornings before work, evenings after work, weekends, or vacations)." This definition does not include instances when an organization member leaves the office during the workday to attend a child's soccer game and uses his/her Blackberry™ to monitor messages. If the boundaries between work and non-work time are becoming more fluid, then perhaps the terms "before work" and "after work" are less distinct for contemporary workers. Furthermore, our measure of WCBA may be affected by social desirability bias. We found that organization members exhibited work connectivity

behavior after-hours more frequently during generic activities versus specific events. It is possible that those who responded were more comfortable reporting their technology use during commuting or traveling, as opposed to during a child's soccer game or dinner with a spouse or friend, which may make them feel like a bad parent or friend.

Another limitation is the conceptualization of the technology artifact. While our theoretical development refers to a generic device that affords mobile connectivity, our measure of WCBA includes two broad types of technology (handhelds and laptops). These categories cover the range of devices in use at the time of the study. With the emergence of tablet devices such as the iPad, the distinction between these two generic categories (handhelds and laptops) is blurring. Since the technology is rapidly changing, it might be useful to examine the underlying technology capabilities in more detail, instead of "considering the device as a single entity" (Dennis, Fuller, & Valacich, 2008).

A final limitation is related to the use of a web-based survey to study "connectedness." In essence, individuals had to be online and engaged with technology to learn about the study and answer the questionnaire. We did not collect any data via paper and pencil methods. Given this caveat, the results may inadvertently represent a greater proportion of organization members who are "connected." Nevertheless, the main findings from our study suggest there is variation in connectivity behavior among respondents, even if this group was more "connected" than the general population.

8. Implications

8.1. Implications for theory

Contemporary computer users are relatively free to enact technologies in different ways (Boudreau & Robey, 2005). Of all the possible behaviors exhibited by modern computer users, we studied those that involve engagement with the workplace during non-work time, using human agency theory as the backdrop. In the days before mobile technologies, the boundary between work and non-work time was more distinct, separated by physical space and time and workplace communication generally took place during working hours. Results from the current study, however, suggest that this boundary is now more fluid, and the onus is on organizational members to actively manage it. This self-regulation becomes challenging as one's past practices and social experience interact with future expectations about desired behavior. When an organization distributes the technology, it conveys future expectations about connectivity. In addition, individual preferences about future behavior with regard to multitasking and the integration of work and home roles reflect the projective element. The iterational element of human agency consists of habitual behavior that develops based on subjective norms or personal preferences, since they form based on past behavior (Chu & Robey, 2008). Together, the tensions created by these past and future elements are reconciled and manifest themselves in new patterns of behavior in the present.

The combination of mobile technologies, subjective norms about connectivity, and organizational expectations generate new dilemmas for workers, and WCBA is a pattern of behavior that reflects the resolution of these dilemmas. Our findings build upon earlier work by Chu and Robey (2008) indicating that user appropriations are predictable and its antecedents depend upon the interplay of organizational and individual variables along the *temporal* dimension of human agency.

Another challenge to investigate the boundary between work and non-work time is the *contextual* dimension of human agency, or the multiple roles that contemporary users play in their professional and personal lives (i.e. mother, CFO, etc.). Closely related is the *spatial* dimension, where these roles are enacted. We found that organization members were more likely to exhibit continuous workplace connectivity behavior during generic "downtime" activities, particularly with regard to handheld WEDs. This may indicate an attempt to use time more productively at the expense of blurring the separation between work and non-work time. A study by Tarafdar et al. (2007), however, found that technostress resulting from ubiquitous computing and continuous connectivity was inversely related to individual productivity. Thus, there may be negative consequences associated with high connectivity.

Employees who prefer the integration of work and home lives may not initially mind the blurring of work and non-work time. It may be more efficient to review a few emails during the morning commute than read the paper. But where does an individual draw the boundary, if at all? Reviewing emails on the morning commute may turn into checking email when you first wake up, before you go to bed, on the

weekends, and even during vacations. The constant blurring of work/non-work boundaries is likely to have implications for employee performance, stress and burnout and work family conflict. In fact, Tarafdar et al.'s (2007) study found that technostress was directly related to role stress. Future studies are needed to continue to examine the relationship between connectivity behavior and these outcomes.

8.2. Implications for practice

It is likely that mobile technologies will not disappear from organizational life anytime soon. However, handheld and laptops by themselves do not drive work connectivity behavior after-hours, people do. Although the distribution of these devices greatly influences employees' likelihood to engage in work connectivity behavior after-hours, some individuals are more inclined to use technology after hours than others. Our results support the notion that two individuals from the same organization who receive a handheld WED may exhibit different degrees of work connectivity behavior after-hours based on individual characteristics. Those with preferences toward polychronicity and/or preferences for work–family role integration would be more likely to engage in this behavior. Thus, organization members should be mindful of the preferences and personalities of their colleagues and clients.

We recommend that organizations, or at the very least work groups, create communication policies with regard to using technology after hours. Rather than relying on subjective norms about connectivity, employees should understand what is expected of them with regard to responding to email during non-work time. This appears to be particularly important for organizations that invest in acquiring technology devices for their employees.

The current study examined connectivity behavior as it relates to communicating with the workplace or colleagues for work-related purposes during non-work time. The flipside of this definition is using technology to engage with personal matters while at work (e.g., online shopping, vacation planning, or stock trading; emailing and instant messaging with family and friends). We did not examine how much time individuals use technology to engage with personal matters while at work. A parallel stream of research is focused on examining this so-called "cyber-slacking" (Block, 2001; Lim, Teo, & Loo, 2002). Perhaps the amount of time individuals devote to such activities during the workday is positively related to work connectivity behavior during non-work time. In other words, an organization member who cyber-slacks while at work may engage in work connectivity behavior after-hours that evening because he was unable to complete his work during the day. Future studies may find that the boundary of work and non-work time is not just becoming more fluid; it's actually disappearing altogether, as individuals move through the day transitioning from work to non-work tasks continuously.

9. Conclusion

The goal of this study was to develop the concept of work connectivity behavior after-hours and test a model of its antecedents. We used human agency theory to root the concept of work connectivity behavior during non-work time and conceptualize its antecedents in terms of organizational and individual factors. Our results indicate that organizational distribution of handheld WEDs and laptops influence work connectivity behavior after-hours, though more strongly for handheld than for laptops. Individual characteristics exert different levels of influence depending on the device through which connectivity behavior is enacted. Polychronicity was more strongly related to laptop connectivity behavior than to handheld connectivity behavior, whereas role integration preference is only related to handheld connectivity behavior.

These results lay the groundwork to begin building a more complete model of work connectivity behavior after-hours that will be generalizable to the larger population of working adults. Two complementary research paths may provide useful extensions to our model. First, future studies could investigate other organizational (e.g., external clients with access to mobile technologies) and/or individual difference variables (e.g., organizational commitment, job satisfaction) to enhance our model. Second, further research could also explore the consequences of work connectivity behavior after-hours in terms of individuals' work performance and life quality issues. We welcome the efforts of other researchers to build upon and extend this work.

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Appendix A

A.1. WCBA measure

Below is a table that lists various activities and events. Using the selections from the drop down boxes (e.g., Never, Rarely, Sometimes, Very often, or Always), please indicate if you have ever used a handheld or laptop WED to perform job-related duties (e.g., review email, communicate with colleagues or clients, log on to a network server) during the stated event.

For example, if you sometimes use your handheld WED to check work-related voicemail messages while you are shopping, select "Sometimes" in the appropriate box.

If you DO NOT OWN the device (e.g., laptop WED) you may leave the boxes in that column blank.

	Handheld WED	Laptop WED
Exercising	• Never • Rarely • Sometimes • Very often • Always	• Never • Rarely • Sometimes • Very often • Always
Shopping		
Traveling		
Commuting to/from work		
Meal at home		
Meal at a restaurant		
Movie in a theater		
On a date		
Play/concert (professional)		
Play/concert (child/friend/other loved one)		
Sporting event (professional)		
Sporting event (child/friend/other loved one)		
Party or social event (with work colleagues/clients)		
Party or social event (with family/friends)		
Parent/teacher conference		
Religious service (e.g., church or synagogue)		
Vacation in the U.S.		
Vacation abroad		
Visit to the restroom		
Work meeting or class		

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