

COMMENTARY

The medium matters: Why we need a specific focus on smartphones

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In the focal article, Hu et al. (2021) address an important question in ICT research: How much does the medium matter? We think it matters quite a bit, especially when the medium is a smartphone. Smartphones are not strictly tools in the same way as are the other types of technology that were mentioned in the focal article (e.g., email, Teams, Zoom, Slack). We argue that there are two main reasons that smartphones warrant unique attention and then outline suggestions for approaching the use of smartphones more effectively through research and practice by relying on an occupational-health-psychology perspective.

Why smartphones matter

Relative to other technological devices, smartphones are the most predominantly used. One Pew poll showed that 81% of U.S. adults owned a smartphone, whereas only 73% owned a laptop or desktop and 52% owned a tablet computer (Pew, 2019). Smartphones combine convenient, utilitarian functions and immersive experiences into one pocket-sized device, and thus exist at the intersection between the behavior and experience of ICT (Hu et al., 2021); how people use their phone (i.e., sending texts, scrolling through social media feeds, playing video games) is inextricably linked to their subjective experiences (i.e., response pressure, absorption, frustration). These devices are designed to drive continuous engagement, which has direct implications for how employees navigate the boundary between work and home.

Design for continuous user engagement

Although smartphones are similar to other work technologies in terms of technical capabilities, media richness theory suggests smartphones are “richer” than other mediums (Lengel & Daft, 1984), which is “based on availability of (a) immediate feedback, (b) multiple cues, (c) language variety, and (d) personal focus” (Ishii et al., 2019, p. 124). Smartphones and their apps expose users to a multitude of stimuli (e.g., notifications, sounds, vibrations) and reinforcers (e.g., likes, reactions via social media), facilitate different types of communication (e.g., emoji and gif-driven texts with friends versus professional work emails), and they are increasingly personalized through customization.

Smartphones are fundamentally linked to the apps that run on them. It is no secret that social media and app designers rely on simple behaviorist principles to drive continuous user engagement. For example, phone notifications operate on a variable-ratio reinforcement schedule: Notifications do not pop up every time you check your phone, so you keep checking until

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one does. The danger is that variable-ratio reinforcement schedules emit persistent behavior that is resistant to extinction (Terry, 2015), making it harder to break continuous phone-checking behaviors. Another example of inducing continuous use is through the automatic “play next video” function on many media sites, making it that much easier to keep watching even though you never planned to in the first place. Work-focused apps and platforms have integrated many of the same strategies into their design (e.g., reactions in Slack communications). These aspects come together to create a highly stimulating, addictive, and “rich” environment that draws people into their phones, whatever the task may be.

Blurring work-home boundaries

Smartphones virtually erase any boundaries between work and home by facilitating access to content and connections associated with either domain at any point. Focusing more so on the effects of work spilling over into personal life, research has shown that smartphones increase ongoing access to work-related content (Ragsdale & Hoover, 2016), increase work-home interference (Derks & Bakker, 2014), and prevent employees’ recovery from work stress (Derks *et al.*, 2014). The features that reinforce constant connectivity can produce the same negative effects without someone even doing work. That is, simply seeing a work-related notification or reading an email without responding to it keeps people cognitively connected to work. Perseverative cognition, or continuing to think about stressful work-related content through rumination or worry, contributes to chronic activation of the stress response, thus increasing the risk of developing strains and negative health outcomes (Brosschot *et al.*, 2005). Therefore, smartphones serve as a medium that contributes strongly to blurring of the work-home boundary through constant connectivity.

Are smartphones just the medium of the moment?

Even though smartphones dominate the technology market right now and warrant research attention, there has been a decline in the rate of growth in the smartphone market (Statista.com, 2021), which begs the question: What’s next? There has been significant growth and integration of new technologies such as wireless headphones, smartwatches, virtual reality, and cars that are WiFi and ApplePlay enabled. For example, Google, Microsoft, and Apple all have systems that allow their products to synchronize across devices with ease (e.g., iMessages on iPhone, Apple Watches, and Apple computers). This raises new concerns for work connectivity: as technologies converge and integrate, virtual access will become even more effortless.

Occupational health psychology and embracing smartphones in research and practice

Research and theory in occupational health psychology provides a foundation for exploring and better leveraging the potential benefits of using smartphones to improve how employees navigate the boundaries between work and life and drive employee well-being. First, we suggest that researchers and practitioners embrace the engagement capacity of smartphones to develop evidence-based well-being apps. One example of this is MoodPrism, a mood tracking app, the use of which predicted reduced depression and anxiety and improved mental well-being via emotional self-awareness (Bakker & Rickard, 2018). We can imagine a host of benefits from an app where employees input some baseline information when they download the app (e.g., basic demographics, personality, and goals for using the app) and then report their most recent stressors or current state throughout a given day, allowing the app to push specific recommendations for what the employee can do in that moment. At the same time, the data collected with the app can be used to evaluate its effectiveness.

Second, organizations and leaders who implement and reinforce organizational policies are an important but overlooked component of improving the technology-mediated working conditions of employees. We strongly advocate for the design and evaluation of organization-level interventions as one of the more effective ways to eliminate or prevent exposure to stressors (Quick et al., 2013) and ongoing activation driven by smartphone connectivity. Although some countries within the EU have implemented some version of “right-to-switch-off” legislation (Secunda, 2019), and we agree that employees should be able to disconnect from work during evenings without penalty, we think a focus on flexibility that respects the needs and well-being of workers is a more reasonable route for organizations and employees alike. This begins with acknowledging that communications and tasks completed with smartphones are legitimate work that, when used during “off-hours,” is accounted for and compensated. This may look like implementing technology-oriented flextime policies, where an employee engaging in smartphone-mediated work tasks from 9–10pm is encouraged to take off 8–9am the next morning. This way, employees are not working longer hours and have more control over their off-work time.

Third, if organizations are going to expect employees to be available and use their own personal smartphones for work, this must be explicitly stated and recognized through policies, consistent messaging, and training on how employees can use their smartphones in healthier ways. Training can be developed around various phone settings and apps that drive continuous engagement, including showing employees how to disable push notifications, use filters to better segment work and personal emails, and encourage the use of “schedule send” features on emails. Empowering employees to create healthy technology-related boundaries should further reduce the chronic activation of work-related information during nonwork time that is driven by smartphone connectivity.

Conclusion

The focal article indicated that the medium of ICT connectedness may be an important consideration in further research. We agree and argue that smartphones are worth investigating on their own because they are designed to function as tools as well as driving continuous user engagement. Thus, these devices have the potential to enable employees to flexibly manage the work–home interface and improve employee well-being; however, most recent research shows they serve as a mechanism that allows work to interfere with the home domain and maintain chronic activation of stress responses. Researchers and practitioners need to approach smartphones in a way that can help employees gain the benefits of smartphone connectivity while mitigating the negative effects of overconnectivity.

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