The Smartphone Dilemma*

Uncovering the Effects of Smartphone on Human Well-being

Michael, Sobolev[1]
[1]Cornell Tech, Cornell University, New York

Since their inception, smartphones have had an unparalleled success story. For many of the billions of smartphone users worldwide, the phone is an ever-present companion. Recently, concerns about the addictive nature of mobile devices and applications as well as the negative effects on human well-being have been rising. It is vigorously debated in the media as well as in academic research whether smartphone usage and screen time negatively impacts life outcomes related to productivity, wellbeing, and mental health. This interdisciplinary symposium will discuss novel academic research that uncovers the complex effects of smartphones human well-being.

Keywords: Smartphone, Mobile Phone, Screen Time, Digital Wellbeing, Digital Addiction, Social Media

Understanding the Psychology of Smartphone Use: The "Adult Pacifier" Hypothesis

Shiri, Melumad (The Wharton School of the University of Pennsylvania), and Michel, T, Pham (Columbia Business School)

One of the most important trends in today's marketplace is consumers' increased reliance on smartphones not only as a communication device but also as a central platform for accessing information, entertainment and other consumption activities—the so-called "mobile revolution." In this paper we show that many consumers develop strong bonds with their smartphones that display similar psychological and behavioral markers as childhood attachment objects. Evidence for this "adult pacifier" hypothesis is provided by three controlled lab experiments and a fourth field study (N=1,089) showing that, relative to a comparable device such as one's personal computer, engaging with one's smartphone provides a greater sense of psychological comfort as well as faster recovery from a stressful situation, both of which are defining characteristics of attachment objects. Likewise, under feelings of stress, people actively seek out and engage with the device over other objects in their environment. Also consistent with this hypothesis, the fourth study shows that the drive to use one's smartphone becomes especially pronounced among consumers who have recently quit smoking—that is, consumers who are particularly susceptible to anxiety and stress.

Phone Interference, Well-being, and Gender: A Mega-Analysis on the Impact of Phone Use as Moderated by Gender

Matthew, R, Leitao (Georgetown University), Jason, DE, Proulx (Simon Fraser University), and Kostadin, Kushlev (Georgetown University).

Most Americans report using their smartphone during their latest in-person social interaction. This phone use has been shown to interfere with people's ability to reap the full benefit of these face-to-face exchanges. Most published experimental studies, however, have samples that are too small to explore moderating factors. In addition, publication bias may result in overestimating the effect of phone use as studies with null effects are still rarely published. We conducted a mega-analysis of nine published and unpublished experiments, N = 1,951 participants (70.4% Female), in which we had explored the effects of phone use across an array of social situations—from sharing a meal with friends to spending time with one's children. We found that phone use negatively impacted the mood of men but not women during social situations. Gender also moderated the negative effect of phone use on social connectedness with men experiencing greater decrements than women. Regardless of gender, we found that phone use had a larger effect on social connectedness than on mood during social situations. Contrary to past research, we also found that dispositional phone dependence did not moderate the effect of phone use on social connectedness or overall mood. Overall, our findings indicate that phone use can undermine the well-being benefits of in-person social interactions but that these effects are potentially more consequential for men than for women. Further research is needed to understand why, including differences between men and women in social norms, social skills, or task-switching abilities.

Predictors and Outcomes of Digital Detox Maintenance

Ofir, Turel (The University of Melbourne), and Isaac, Vaghefi (Zicklin School of Business).

The use of social networking sites (SNS) can sometimes have negative consequences for users, including reduced wellbeing. To alleviate such outcomes, many SNS users take a temporary break (i.e., abstain) from use, or engage in what is termed "digital detox". In this study we use a mixed-method, deductive-inductive approach to examine (1) the conditions that help people sustain their abstinence, and the (2) outcomes of abstinence maintenance. First, a meta-framework was proposed, based on a review of prior literature, which was fine-tuned via a qualitative study (n=281). The proposed model was tested via a quantitative study (n=312) of users, some of whom were instructed to abstain from SNS use for up to one week, and others who did not (control). The findings demonstrate effects of self-efficacy to abstain, SNS habit, SNS abstinence habit, and peer pressure on SNS abstinence maintenance. A comparison between the intervention and control groups showed that abstinence maintenance leads to larger positive changes in individual's productivity and intention to moderate one's use in the future.

Digital Nudges for Screen Time Reduction: A Randomized Controlled Trial with Performance and Wellbeing Outcomes

Laura Zimmermann (Affiliation), and Michael, Sobolev (Cornell Tech).

Many people want to reduce their smartphone usage to increase productivity and well-being but fail to accomplish this goal. In this study, we examine the use of digital nudges to help people self-regulate their phone usage. We use a scalable approach by leveraging mobile features that are readily available on most smartphones. Faced with the reckoning of ever increasing smartphone addiction, tech giant Apple released a time management application (Screen Time) as part of its operating system. The Screen Time app is one of the most accessible solutions to screen time reduction and smartphone use regulation since it is almost ubiquitously available on any iPhone. We conducted a randomized control trial with a student population (N=112) over three weeks to test the effectiveness of two digital nudges for screen time reduction. Along with a tracking-only control condition, a passive digital nudge (i.e., grayscale mode) was compared to an active digital nudge (i.e., time limits). The passive nudge led to an immediate, significant reduction of objectively measured screen time compared to the control condition. Conversely, the active nudge led to a smaller and gradual screen time reduction. Those in the control condition, who simply tracked their usage, did not lower their screen time. As opposed to the popular belief that reducing screen time is beneficial, we found no immediate causal effects of reducing screen time on subjective well-being and academic performance. Our study provides evidence for a cost-effective and scalable solution to reduce mobile usage and screen time.