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Is Cell Phone Use Socially Contagious?

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Cell phone use is increasingly prominent in public settings and may shape face-to-face social interactions. We used an ethological approach to examine cell phone use in public dyadic interactions, recording detailed behavior sequences. Naturalistic observations in university dining halls and nearby commercial dining facilities indicated that one individual's cell phone use is a frequent precursor to the companion's cell phone use. Cell phones create an alternative outlet for one's attention and may both promote and interfere with live social interaction. These results have important implications for the role of information technology in modern social interactions.

Keywords: Ethology, Cell Phones, Dyads, Social Relationships

Introduction

Cell phones are integrated into the daily lives of many people in modern societies. Mobility, immediate access, and the freedom to communicate at any time and place are significant advantages of cell phone use (Leung & Wei 2000). Heavy cell phone use among adolescents and young adults is creating a subculture with a powerful impact on interpersonal communication and cultural norms (Nurullah, 2009). Cell phones can serve as a social facilitator, promoting social interaction (Campbell & Kwak, 2011). However, some individuals use cell phones to create a social barrier for avoiding interactions with others in public (Humphreys, 2005).

We used an ethological approach to assess the use of cell phones in dyadic interactions in public settings. We predicted that cell phone use would be contagious in a dyad, e.g., that use by one individual would increase the short-term likelihood of cell phone use by the companion. We also predicted that women would use cell phones more frequently than men would in same-sex dyads, consistent with previous research findings (Wei & Lo 2006; Humphreys 2005).

Methods

Detailed observations of cell phone users were collected in public settings on the University of Michigan campus and in the surrounding area. Dyads were observed in East Quad and Mosher-Jordan dining halls and university area commercial dining facilities (Amer's Deli, Bruegger's Bagels, and Starbucks). Observations were collected from January to April 2011 and varied by time of day; intentionally avoiding peak dining hours. Persons observed appeared to be between 16 and 25 years of age, typical of the local student population. The collected observations lasted between 3 to 20 minutes, starting when the person(s) sat down at a table and ending when the person(s) left the table. The timing and frequency of cell phone use were

recorded for all observed persons in 10-second intervals, as this interval length was easy to follow with a timer and was deemed to represent an appropriate reaction time interval by lab members. We arbitrarily labeled individuals A and B and examined the likelihood that person B used their phone in the 10-second interval before, during, or after person A's cell phone use. We did not assess whether or not every individual had a cell phone or what type of phone it was, though individuals without phones would reduce the chances of supporting our primary hypothesis. We tested whether there was a feedback effect of mutual influence in a reciprocal interaction (See Kenny, Kashy, & Cook, 2006).

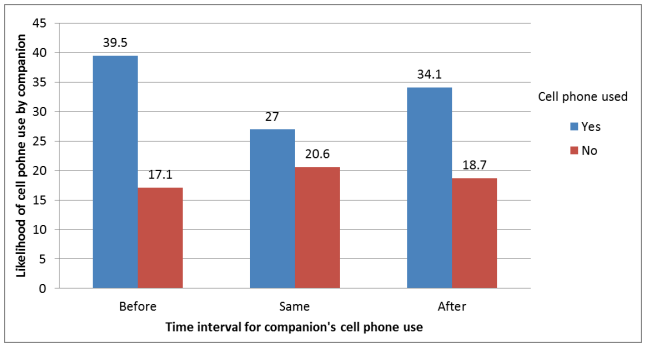

Figure 1: Likelihood of Person B using their cell phone in the preceding, same, and following time interval by Person A's cell phone use.

Results

Overall, individuals used their cell phones in an average of 24% of the 10-second increments, ranging from 8% to 48%. Individuals were significantly more likely to use their cell phones when the other person in the dyad used their cell phone in the preceding time increment. This effect was bidirectional, Spearman's rho = .162, p = .004 for B following A and Spearman's rho = .235, $p < .001$ for A following B. In contrast, pairs were not significantly more likely to use their cell phones simultaneously in the same time interval, Spearman's rho = .067, p = .067. Individuals in female-female dyads tended to use their cell phones more frequently (32% of increments) than those in male-male (25%) or mixed sex (22%) dyads, $\chi^2_{(335)} = 6.14$, p = .046, d = .22.

Conclusion

Observations confirmed our prediction of contagious cell phone use in public dyads, further advancing the understanding of the role of cell phones in contemporary socialization. We believe that our results can be interpreted in relation to social exclusion and inclusion. When one person in a dyad engages in an external phone conversation, either verbally or through text messages, the co-present person in the dyad is excluded and thus uses her/his own cell phone to promote feelings of social inclusion. S/he may also use her/his cell phone to demonstrate connection with outside social networks to proximate others (Ling 2002). This function may be particularly important for women, who used cell phones more frequently than males in both this study and past research (Wei & Lo 2006; Humphreys 2005). Mimicry and imitative behavior may also play a role in contagious cell phone use. Individuals may see others checking their incoming messages and be prompted to check their own incoming messages, though this may be less likely to explain repeated contagious events over the span of a few minutes. Future research may compare these patterns to other demographics and settings. These results may contrast with those for older adults, who may not use cell phones as frequently.

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Julia A. Finkel is a participant in the Undergraduate Research Opportunities Program. Daniel J. Kruger, Ph.D., has published over 60 peer-reviewed scientific articles. His dissertation research at Loyola University Chicago integrated proximate and ultimate influences for altruistic behaviors. His evolutionary research interests include altruism, cooperation, competition, life history, reproductive strategies, risk taking, health outcomes, and mortality patterns.