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ABSTRACT

Younger and older mobile phone users differ in their tolerance of phubbing, that is, using one's phone in face-to-face interactions. Yet, there is limited knowledge of how phubbing norms influence phone use in intergenerational interactions. We conducted an online survey among younger (aged ≤ 41; $n = 105$) and older adults ($n = 104$), compared their generation-specific normative perceptions, and analyzed how these perceived norms were correlated with intergenerational phubbing. The results suggest a particular norm sensitivity of younger phone users, meaning that they not only had generation-specific normative perceptions, but that they also adapted their phone use to the older generation's phubbing norms in interactions with them.

In a permanently connected society (Vorderer, Hefner, Reinecke, & Klimmt, 2017), phubbing—the act of using the *phone* in copresent interactions and thereby *snubbing* someone—has become a prevalent phenomenon (Chotpitayasunondh & Douglas, 2016). Studies have connected phubbing with feelings of face threat (Miller-Ott & Kelly, 2017) and social rejection on the side of the interaction partner (Chotpitayasunondh & Douglas, 2018). Phubbing is accordingly perceived as a violation of conversational expectations (Kadylak, 2020), with older adults tending to have a lower tolerance for phone use in social interactions than younger phone users do (Rainie & Zickuhr, 2015). Such age-related differences in normative perceptions suggest the existence of an "intergenerational conflict surrounding phubbing" (Vanden Abeele, 2018, p. 169), which can be expected to become salient and effective in intergenerational interactions. While a body of research demonstrates normative influences on phubbing behavior (Leuppert & Geber, 2020; Li et al., 2021; Schneider & Hitzfeld, 2021), it lacks a particular focus on the role of phubbing norms in intergenerational interactions.

The present study examines generation-specific normative perceptions and their associations with on phubbing behavior in interactions between people

from distinct generations. To this end, we conducted an online survey in December 2021 among younger (≤ 41 years; $n = 105$) and older (> 41 years; $n = 104$) mobile phone users, compared their normative perceptions of the prevalence (i.e., descriptive norm) and social approval (i.e., injunctive norm) of phubbing in their own generation and the other (older/younger) generation, and analyzed how these generation-specific normative perceptions were associated with individual phubbing behavior in intergenerational interactions. With its generation-specific focus on phubbing norms, the present study not only adds to the present state of research but also contributes to the mutual understanding of mobile phone users of distinct digital generations.

Phubbing norms

Perceived social norms have been found to be correlated with mobile phone use in copresent interactions (Leuppert & Geber, 2020; Li et al., 2021; Schneider & Hitzfeld, 2021). Cialdini, Reno, and Kallgren's (1990) differentiation of injunctive and descriptive norms has been crucial in this regard. While perceived descriptive norms describe perceptions of what *is done* by most people, perceived injunctive norms specify perceptions of what *ought to be done*. In most cases, descriptive and injunctive norms are congruent because what is perceived as commonly done is also perceived as socially approved, and vice versa (Cialdini et al., 1990). In the case of phubbing, however, research indicates that descriptive and injunctive normative perceptions do not align in the way that phubbing is perceived to be quite common (i.e., perceived descriptive norm) but not socially approved (i.e., perceived injunctive norm; Leuppert & Geber, 2020).

Generations of mobile phone users

Age seems to be a crucial factor regarding perceptions of phubbing norms. Younger adults have been found to be more permissive in their attitudes toward mobile phone use in various social settings (Rainie & Zickuhr, 2015), while older adults seem to have concerns about the phone behavior displayed by younger generations, which they have described as offensive in focus group interviews (Kadylak et al., 2018). These generational differences and conflicts in perceptions of phubbing norms might be explained by distinct experiences of the extent to which technology is taken for granted in daily life. In this regard, differentiating between "digital natives"—people born in and after 1980, who have grown up in a technology-rich environment—and "digital immigrants"—people born before 1980, who had to learn about and adapt to new technology—is crucial (Prensky, 2001). In line with this definition, the present study focused on two groups of phone users: younger users, aged

41 years or younger at the time of this study, and older users, aged over 41 years.

Phubbing norms in intergenerational interactions

Intergenerational interactions are interactions between people of younger and older generations. These are special situations because they not only raise the salience of the phubbing norms of one's own generation but also of the other generation. Given the findings on generational differences in phone use and tolerance of certain phone behaviors (e.g., Kadylak et al., 2018; Rainie & Zickuhr, 2015), we hypothesize that younger and older adults perceive the following differences in descriptive and injunctive phubbing norms between their own and the other (younger/older) generation:

H1: Younger mobile phone users perceive phubbing to be more prevalent and socially approved in their own generation than in the older generation.

H2: Older mobile phone users perceive phubbing to be less prevalent and socially approved in their own generation than in the younger generation.

Social norms research suggests that people generally orient toward the norms of their own reference group (i.e., the group with which one identifies; Shulman et al., 2017). This implies that mobile phone users would primarily orient toward the phubbing norms of their own generation. However, in intergenerational interactions, members of the other generation are copresent, and thus, generation-specific phubbing norms come into focus (Cialdini et al., 1990). The question, then, is which phubbing norms are relevant in inter-generational interactions—the norms of one's own or the other generation? Consequently, we pose the following research question:

RQ1: How are the perceived norms of one's own and the other generation associated with phubbing behavior in intergenerational interactions?

Method

Study design

To test the hypotheses and answer the research question, we surveyed mobile phone users in December 2021. We disseminated the link to the questionnaire via e-mail and WhatsApp among members of the investigator's personal network and asked them to forward the link to their friends, acquaintances, and family. Our aim was to have a comparable number of people under and

over 41 years of age. To this end, we constantly screened new cases for age during data collection while we were approaching members of our personal network. Toward the end of our recruitment period, we had a slight surplus of younger respondents, which we resolved by targeting older people of our social network and asking them to share the link with their age group. The snowball technique resulted in a sample of 212. On average, respondents needed eight minutes (SD = 2.52) to complete the survey. We removed three cases because these respondents admitted in their response to the control question that they had not completed the questionnaire seriously and honestly.

This resulted in a final sample of 209 phone users, which we subdivided into two groups according to the aforementioned definition: 105 younger phone users, aged between 17 and 41 years (M = 27.59, SD = 6.86), and 104 older phone users, aged between 42 and 83 years (M = 58.25, SD = 9.75). Women represented 53% of both groups. In the younger group, 55% had at least graduated from high school; in the older group, 65% reported having a high school diploma. Members of the younger generation reported using their mobile phone about two to three hours per day (M = 4.10, SD = 1.40), whereas the older generation used it about one hour on average (M = 2.64, SD = 1.22).[1] We controlled for gender, education, and daily mobile phone use in the analysis.

Measures

We used the five items of the Technology Interference in Life Examples Scale (TILES; McDaniel & Coyne, 2016) to measure all constructs—that is, phubbing behavior and perceived descriptive and injunctive phubbing norms in one's own and the other generation. Leuppert and Geber (2020) used TILES to measure phubbing behavior and norms and confirmed its reliability. The items used in the present study are listed in Table S1 (supplemental material, available at https://researchbox.org/630).

To measure *phubbing behavior*, respondents were asked to rate their phubbing frequency on a 5-point scale from 1 (*never*) to 5 (*all the time*) in interactions with partners from (a) their own and (b) the younger/older generation (Table S1). To ensure a consistent understanding of generation, a definition was provided at the beginning of the survey: "In this study, a generation is defined as all people born in a certain period of time. On average, there are 25 years between generations, for example (grand)children —parents—grandparents." In the course of the survey, questions about normative perceptions about the *other* generation were again linked to a definition of the older (for younger participants aged ≤ 41) or younger generation (for older participants aged > 41; e.g., "Younger generations include all people who are around 20 to 60 years younger than yourself [such as the generations of

children and grandchildren].”). Although providing a rather rough definition, these instructions created an understanding of "generation" among participants that was related to their everyday life and social environment while being consistent with scientific definitions and classifications.

To measure generation-specific perceptions of descriptive and injunctive phubbing norms, the items of TILES were modified (Table S1). Perceived *descriptive norms* were measured on the aforementioned 5-point frequency scale by assessing respondents' perceptions of how often their friends, acquaintances, and family belonging to (a) their own generation and (b) the younger/older generation display certain behaviors in a conversation between two people. Perceived *injunctive norms* were measured through statements concerning what most of their friends, acquaintances, and family belonging to (a) their own generation and (b) the younger/older generation find appropriate in interactions on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Mean indices were built for all scales and were internally reliable (Table S1).

All analyses were run in R (R Core Team, 2021). The data and analysis script are available at https://researchbox.org/630

Results

Younger participants reported in average to phub $M = 2.50$ ($SD = 0.66$) in *interactions with the own generation* (on a scale ranging from 1 = *never* to 5 = *all the time*); older participants, on the other hand, indicated to phub $M = 2.01$ ($SD = 0.59$) in intragenerational interactions, which is significantly less ($t(207) = 5.29$, $p < .001$). Interestingly, both generations did not significantly differ in their pubbing behavior in *interactions with the other generation* (younger GEN: $M = 2.10$, $SD = 0.64$; older GEN: $M = 2.08$, $SD = 0.75$; $t(207) = 0.15$, $p = .881$). This is mainly because the younger generation reported less phubbing in interactions with older people than in interactions with members of their own generation, as indicated by t-tests for paired samples (Table 1). For the older generation, in contrast, we find no differences in phubbing behavior between intra- and intergenerational interactions.

Regarding the first hypothesis on differences in normative perceptions, the t-tests for paired samples show that the younger phone users perceived phubbing to be more prevalent and socially approved in their own than in the older generation, supporting hypothesis *H1*. The older mobile phone users, in turn, perceived phubbing to be more prevalent and socially approved in the other (younger) generation than within their own generation, which is in line with hypothesis *H2*. These differences in generation-specific normative perceptions can be regarded as large effects (Cohen's $d > .80$).

Table 1. Differences in phubbing behavior and perceived norms of phubbing between generations.

	Younger GEN, ≤ 41 (n = 105)			Older GEN, > 41 (n = 104)		
	In own GEN	In older GEN	Difference (paired t-test)	In own GEN	In younger GEN	Difference (paired t-test)
	M (SD)	M (SD)	t, p, Cohen's d	M (SD)	M (SD)	t, p, Cohen's d
PHUB	2.50 (0.66)	2.10 (0.64)	6.87, < .001, d = 0.67	2.01 (0.59)	2.08 (0.75)	−2.03, .045, d = 0.20
DN	3.11 (0.77)	2.20 (0.72)	10.753, < .001, d = 1.05	2.42 (0.66)	3.42 (0.84)	−12.66, < .001, d = 1.24
IN	2.70 (0.80)	2.06 (0.80)	8.16, < .001, d = 0.80	2.28 (0.79)	3.34 (1.09)	−9.30, < .001, d = 0.92

Note. Paired-samples t-test; GEN = generation, PHUB = phubbing, DN = perceived descriptive norm, IN = perceived injunctive norm; scale PHUB/DN: 1 = *never*, 5 = *all the time*, IN: 1 = *strongly disagree*, 5 = *strongly agree*.

To answer *RQ1* regarding how these normative perceptions were associated with phubbing behavior in intergenerational interactions, we performed linear regressions and included gender, education, and daily phone use as control variables (an overview on correlations between all constructs is provided in Table S2 in the supplemental material). Figure 1 depicts the coefficients and their confidence intervals in the regression models for the younger (blue) and older (orange) phone users. Beyond the control variables, normative perceptions explain a comparable extent of the variance in phubbing in intergenerational interactions in both age groups—32% in the younger generation and 34% in the older generation. Figure 1 also illustrates significant differences between the two generations concerning the question of which reference group (i.e., own or other generation) and norm dimension (i.e., descriptive or injunctive norm) are behaviorally relevant. For the younger generation, in addition to one's own generation's injunctive norm (β = .14, p = .039), perceptions of the descriptive (β = .17, p = .008) and injunctive (β = .12, p = .085) phubbing norms in the older generation seem to operate in intergenerational interactions, though the effects of the latter are only significant at the 10% level. On the contrary, for the older phone users, results indicate that beyond the amount of daily phone use (β = .17, p = .003), only the perceived descriptive norm in one's own generation is meaningful in interactions with the younger generation (β = .36, p <.001).

Discussion

The study highlights three main findings. First, our results are in line with previous findings on differences between younger and older generations concerning the extent of phone use in social interactions (Rainie & Zickuhr, 2015). In our survey, younger mobile phone users reported to phub more than older mobile phone users. At the same time, however, younger adults stated that
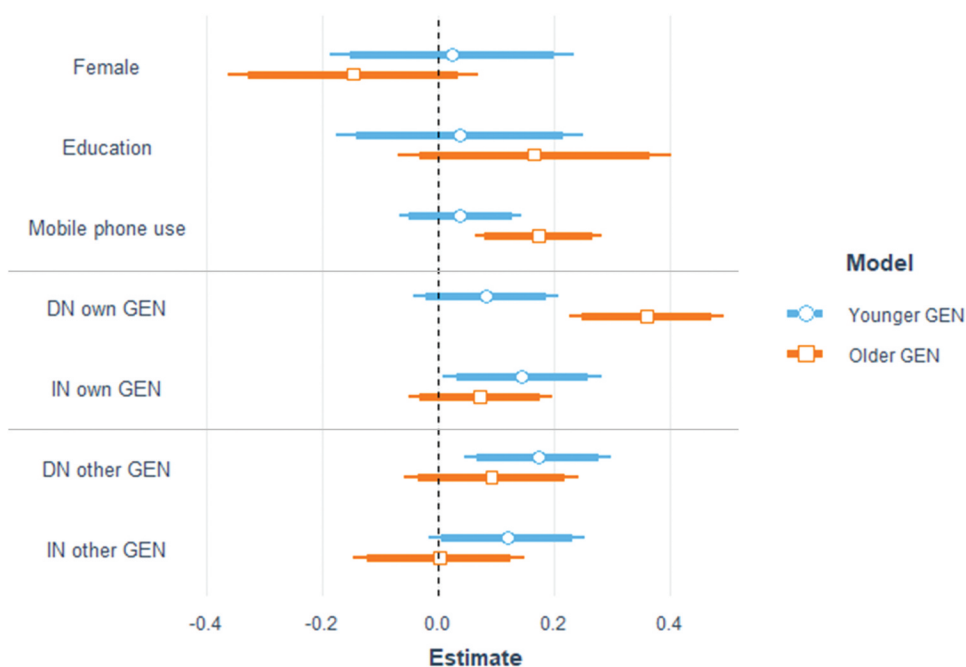
Figure 1. Influences of perceived norms on intergenerational phubbing across generations. Note. Linear regression model for younger GEN: $n = 103$, $F(7, 95) = 7.87$, $p < .001$, adj. $R^2 = 0.32$; for older GEN: $n = 102$, $F(7, 94) = 12.92$, $p < .001$, adj. $R^2 = 0.45$; the plot presents the standardized coefficient estimates (x-axis) along with confidence intervals for the younger (blue) and older (orange) generation; bands represent the 95% confidence interval (CI), thicker bands represent the 90% CI; DN = perceived descriptive norm, IN = perceived injunctive norm, GEN = generation; for further details on the coefficients, please see Table S3 in the supplemental material.

they use their mobile phone significantly less in social gatherings with people from the older generation. Second, our results highlight that both generations are aware of the generational differences regarding the prevalence and acceptance of phubbing. More specifically, both generations share the perception that phubbing is more common and socially accepted among younger phone users. This implies that the younger generation perceives phubbing to be less prevalent and socially approved among older phone users. Third, corroborating the findings of previous research (Li et al., 2021; Schneider & Hitzfeld, 2021), phubbing norms were found to be behaviorally relevant—about a third of the variance of phubbing was explained by normative perceptions. In this regard, it is notable that younger phone users proved to be highly susceptible to normative perceptions of the prevalence and acceptance of phubbing in the older generation and aligned their behavior with the expectations of the older communication partner, whereas the older adults aligned their phone use with the phubbing norms of their own generation in intergenerational interactions.

Overall, the study's findings speak to a special norm sensitivity of younger mobile phone users in intergenerational interactions: They are aware of

normative differences between their own and the older generation, they phub less in interactions with older people than in interactions with peers, and they align their phubbing behavior in intergenerational interactions with the phubbing norms of the older generation rather than those of their own generation.

Limitations and outlook

The validity of these findings is restricted mainly by three methodological limitations. First, the cross-sectional design of the study did not allow for testing normative influences in a causal sense. Though social norms research has provided robust theoretical and empirical evidence for treating social norms as predictors of behavior (Shulman et al., 2017), we cannot rule out that other-directed influences were at work. Second, the overall sample as well as the generational subgroups were rather small and not representative, as they were generated by snowball technique. Third, the definition of generations only distinguished between younger and older mobile phone users because we expected the distinction between digital natives and immigrants to be the most crucial one. Future studies might apply a more nuanced generation conceptualization to provide a more differentiated understanding of varying social norms of digital media use in generations (e.g., such of the Pew Research Center; Dimock, 2019).

Conclusion

Despite differences between generations in their phubbing behavior, the study's findings do not suggest an intergenerational conflict surrounding phubbing. Younger mobile phone users showed a specific sensitivity for the phubbing norms of the older generations, in the sense that they not only were aware of a lower tolerance of phubbing among older phone users, but that they also adapted their mobile phone use to the older generation's phubbing norms in interactions with them. At the same time, by highlighting generational differences, the study indicates that norms of digital media use are in transition, with mobile phone use in social situations becoming more normal. In this regard, intergenerational interactions might not only be an effective means of maintaining mutual understanding but also a valuable contribution to the growing societal debate on the need for a more conscious use of digital media. Understanding and informing this transitional process in a digital society requires longitudinal cohort studies that monitor social norms of mobile phone use.

Note

1. Scale of daily phone use: 1 = *less than 30 min*, 2 = *30 min to 1 h*, 3 = *1–2 h*, 4 = *2–3 h*, 5 = *3–4 h*, 6 = *4–5 h*, 7 = *5–6 h*, 8 = *more than 6 h*.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Liska Winkelmann is a graduate student at the University of Mannheim, Germany. She is interested in the impact of media use on social relationships and media influences on recipients in general.

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Data availability statement

The data described in this article are openly available at https://researchbox.org/630.

Open Scholarship

This article has earned the Center for Open Science badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at https://researchbox.org/630.

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