

The Role of State Boredom, State of Fear of Missing Out and State Loneliness in State Phubbing

Full Paper

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Abstract

The term “phubbing” describes individuals’ engagement with their smartphones during face-to-face conversations. Because some scholars treated phubbing as a trait experience, the predictors they investigated to explain this behavior have also been trait predictors. This paper reports on a study that used the state phubbing scale, which took into account both the fleeting and the psychological properties of this behavior, and applied a set of state predictors that perceived phubbing as a state experience (state boredom, state of fear of missing out and state loneliness). Data was collected using an online survey. The results from the multiple regression analysis revealed that the state of fear of missing out was a stronger predictor of state phubbing with state boredom also predicting state phubbing to a lesser extent. State loneliness didn’t predict this behaviour. Understanding the immediate predictors of phubbing is important, considering the negative effects of this behavior on offline relationships.

Keywords: Phubbing, Smartphone, Boredom, Fear of missing out, Loneliness

1 INTRODUCTION

Phubbing is the behaviour of individuals engaging with their smartphones during a face-to-face conversation with another person or persons instead of paying attention to them (Al-Saggaf and MacCulloch 2018). The current research suggests that phubbing is now part of everyday face-to-face conversation (Chotpitayasunondh and Douglas 2016); and the behaviour has been found to be associated with a number of negative effects on personal relationships. Phubbing has been found to decrease the perceived quality of communication, and overall relationship satisfaction (Chotpitayasunondh and Douglas 2016) and looking at one's phone during an interaction can significantly reduce the sense of emotional connection (Nakamura 2015). In relationships where phubbing occurred over a long period of time, phubbing has weakened the intimacy between partners (Roberts and David 2017); and between married partners phubbing has reduced ratings of relationship satisfaction, which led to an increase in levels of depression (Wang et al. 2017). When employers engaged in phubbing behaviour, employee engagement decreased and supervisory trust was undermined (Roberts and David 2017).

Phubbing has been studied either using a single item in a questionnaire, i.e. how often participants look at their smartphones while having a face-to-face conversation with another person or persons along a continuum from never to all the time (Al-Saggaf and MacCulloch 2018) or how many times did they phub at a given day (Chotpitayasunondh and Douglas 2016); or using a psychological construct measured using a scale consisting of a number of statements, such as Roberts and David's (2016) partner-phubbing scale or Karadağ's et al. (2015) phubbing scale. In the first instance, the focus has been on how frequent this behaviour is along the time dimension (Al-Saggaf and MacCulloch 2018) or in terms of duration spent engaging in such a behaviour as expressed either in terms of minutes or hours per day or days per week (Chotpitayasunondh and Douglas 2016). In the second instance, the focus has been on the psychological dimension of the behaviour. Thus, while the first group of scholars viewed phubbing as a fleeting reaction, the other group viewed phubbing as a psychological construct suggesting phubbing exhibits both characteristics. Reconciling these two schools of thought regarding the measurement of phubbing, necessitates the consideration of phubbing along both the time dimension and the psychological dimension. This paper reports on a study that treated phubbing as a state experience and used a newly established and validated scale for phubbing, the state phubbing scale (Al-Saggaf and O'Donnell 2019) to measure it. The scale took into account both the fleeting or momentary nature of phubbing and the psychological properties of this behaviour. The study then investigated the effect of a number of predictors on state phubbing.

A number of factors have been found to cause people to use their smartphones while conversing face-to-face with others. Addiction to mobile phones, SMS addiction, social media addiction and internet addiction, as opposed to addiction to games, have all been found to be determinants of this behaviour (Karadağ et al. 2015). The 'fear of missing out' and self-control as well as internet addiction have also been found to indirectly predict the extent to which people use smartphones during social interactions through the mediator variable smartphone addiction (Chotpitayasunondh and Douglas 2016). Building on Oduor's et al. (2016) qualitative study, which hinted at a relationship between boredom and phubbing, a recent study that investigated this relationship has found that trait boredom predicts phubbing but that the effect of this predictor is small (Al-Saggaf et al. 2018). It appears that because scholars have treated phubbing as a trait disposition, i.e. enduring experience, a recurring tendency, or chronic condition, the predictors they examined to explain this behaviour have also been trait predictors.

Treating phubbing as a state experience, i.e. fleeting, momentarily, or temporary, is new. In addition, no studies known to the authors have examined state predictors as explanatory variables of phubbing behaviour. This paper reports on a study that measured state phubbing using a newly established and validated scale, the state phubbing scale, and investigated a set of state predictors of phubbing that perceives this behaviour as a state experience, i.e. as a passing or a fleeting state. The use of a set of state predictors that can explain phubbing as a state experience is a significant contribution to the limited but growing literature on phubbing.

2 THE THEORETICAL FRAMEWORK

The Uses and Gratifications (U&G) theory (Papacharissi and Rubin 2000) can provide a valuable framework for understanding why state factors are better predictors of phubbing behaviour than trait predictors. Within a U&G framework, individuals' motives and gratifications are the main reason why people engage with technology, such as smartphones (Ruggiero 2009). People may engage with their smartphones during a face-to-face conversation to seek an immediate gratification. Indeed, commonly cited gratifications of smartphone and social media use are the need for maintaining interpersonal

connectivity, sociability, generating entertainment value, and relieving boredom (Ifinedo 2016). There is evidence that suggests that engaging with technology may be motivated by a desire to manage state feelings (Kardefelt-Winther 2014). For this reason, this study is concerned with the motivations relating to managing negative emotions, specifically, the negative emotions of boredom, fear of missing out and loneliness, which form part of the scale used to analyse the U&G factors (Al-Saggaf 2013). The aim of this study is to investigate the effect of state boredom, state fear of missing out and state loneliness on state phubbing. A future study should use the full list of the items comprising the factors of the U&G framework to understand the mediating role of state phubbing in the motivation to use the smartphone.

Trait boredom is the recurring tendency, or chronic disposition of individuals, to experience boredom (Ng et al. 2015). State boredom is a fleeting state of under-stimulation in which an individual lacks interest in their surroundings, and is unable to concentrate (Ng et al. 2015). Experiences of boredom predicted lenient attitudes of students towards in-class cell phone use (Bolkan and Griffin 2017), and problematic smartphone use (Elhai et al. 2017). The relationship between experiences of boredom and maladaptive smartphone use suggests that boredom may also drive phubbing behavior. Indeed, boredom proneness was found to be a predictor of phubbing but the effect of this trait predictor was small (Al-Saggaf et al. 2018). Considering the fleeting nature of phubbing, we expect state boredom to predict state phubbing. Therefore, the first hypothesis is as follows:

Hypothesis 1 (H1): State boredom will predict state phubbing.

Fear of missing out (FoMo) is the desire to remain constantly connected to social networks, and the fear of being absent from an event where others are having fun (Przybylski et al. 2013). FoMo has been related to social media use (Blackwell et al. 2017; Przybylski et al. 2013), including social media addiction (Blackwell et al. 2017). FoMo is also related to maladaptive smartphone use and smartphone addiction (Elhai et al. 2017). The literature offered mixed findings in relation to the relationship between FoMo and smartphone use. While FoMo was not found to be associated with overall frequency of smartphone use (Elhai et al. 2017), i.e. the time dimension, it was found to be related to inappropriate use of the smartphone (the psychological dimension). Considering FoMo has been found to be a predictor of phubbing (Chotpitayasunondh and Douglas 2016) and given the fleeting nature of phubbing we expect state FoMo to predict state phubbing. Therefore, the second hypothesis is as follows:

Hypothesis 2 (H2): State FoMo will predict state phubbing.

Loneliness is the perception of deficiencies within one's own relationships, caused by either a small or unsatisfying social network as perceived by the individuals' personal expectations. State loneliness is a fleeting feeling of loneliness within a given moment. Loneliness has been directly related to problematic smartphone use, such as technological addiction, and problematic behavioral patterns (Dayapoğlu 2016). It is therefore reasonable to expect that experiences of state-loneliness will predict an individual's desire to engage in state phubbing. Therefore, the third hypothesis is as follows:

Hypothesis 3 (H3): State loneliness will predict state phubbing.

With regards to the demographic variables, as age increases phubbing should decrease because older people are less likely to be more attached or addicted to their smartphones than younger people who grew up with technology (Roberts and David 2017). With regards to gender, women, who are better at multitasking than men (Stoet et al. 2013), are expected to be more attached or addicted to their smartphones than men. Regarding geographic location (i.e. metropolitan vs regional), people in metropolitan areas, where pace of life is faster than in regional areas, are expected to be more obsessed with smartphones than people in regional areas (Al-Saggaf et al. 2018). For these reasons, these smartphone users' characteristics are expected to influence users' state phubbing behaviour. To control for the effect of these demographic variables on state phubbing, the demographic variables will be included in the model.

The above hypotheses can be represented algebraically as follows:

$$\text{State phubbing} = b_0 + b_1 \text{ State Boredom} + b_2 \text{ State FoMo} + b_3 \text{ State Loneliness} + b_4 \text{ Gender} + b_5 \text{ Geographic Location} + b_6 \text{ Age} + e \quad (1)$$

Where:

- b_0 is a constant representing the intercept of the regression line
- $b_1 - b_6$ are the regression coefficients of the independent variables
- e represents the regression residuals and indicate that state phubbing cannot be fully determined by the independent variables.

The regression coefficients b_1 - b_6 will be used in the interpretation of the results from the multiple regression in this way: for a unit change in state boredom, as an example, there will be b_1 change in state phubbing while controlling for the effects of all other independent variables in the model.

3 METHOD

Data for this study was collected using Google Forms. Participants were recruited by posting the link to the survey in a number of websites and forums such as Reddit.com. Participants were considered eligible for inclusion in the study if they were 18 and above and owned/used a smartphone. This was for ethical considerations as in most cases in Australia people under the age of 18 require parental consent to participate in any research study. Participants considered eligible for inclusion in the study were then taken to the survey in Google Forms. The first page of the survey consisted of an information sheet for participants. This information sheet outlined the purpose of the study, why they have been invited to participate, what the study involves, risks and benefits to them from taking part in the study, how the study is being paid for, whether taking part in the survey will cost them anything, what happens if they don't want to take part in the study, what happens if they participate and want to withdraw later, how their confidentiality will be protected, what happens to the data they supply us, what can they do if they want to discuss the study further before they decide, and who to contact if they have concerns about the conduct of the study. The bottom of the information sheet then thanked individuals for considering the invitation and informed them that by proceeding to the survey questions they consent to participate. A total of 325 individuals participated in the study.

The demographic information collected from participants included their gender, age, country of residence, and geographic location (metropolitan vs. regional). State phubbing was measured using the state phubbing scale (Al-Saggaf and O'Donnell 2019). The state phubbing scale consisted of four items rated on a scale from 1 (strongly disagree) to 5 (strongly agree). The scale included statement such as "Right now, I feel more inclined to check my smartphone than to interact with others." The scale achieved a Cronbach's Alpha of .745 and none of the scale items was correlated with each other. State boredom was assessed using the shortened version of the state boredom scale (Ng et al. 2015). This state boredom scale contains 19 items rated on a scale from 1 (strongly agree) to 7 (strongly disagree). State fear of missing out was assessed using the state fear of missing out scale (Wegmann et al. 2017). The state fear of missing out scale contains seven items rated on a scale from 1 (not at all true of me) to 5 (extremely true of me). State loneliness was assessed using the state loneliness scale (Overland 1991). The state loneliness scale contains one item ("how often do you feel lonely"), which is responded to on a scale from 1 (Have not yet experienced loneliness) to 6 (Have always felt lonely).

Data was analysed in SPSS using multiple regression. To determine the strength of the effect of the predictor variables (state boredom, state of fear of missing out, state loneliness and the demographic variables) on state phubbing, the regression coefficients of the independent variables (the Unstandardized Coefficients -B-) were interpreted in combination with their t and p values. The Standard Error of the Estimate was used to assess the goodness of the fit of the model as this value is calibrated in the units of the dependent variable. The F value and P value from the ANOVA table also assisted with the assessment of the goodness of the fit of the model. The data was checked for skewness and kurtosis and was found to be consistent with the multiple regression statistical requirements. The data was also checked for multicollinearity and no issues were detected.

4 RESULTS

Of the 325 individuals who participated in the study, 26.27% (n=85) of the participants were male and 73.87% (n=240) were female. Participants' ages ranged from 18 to 65, with a mean age of 25.9 (SD = 10.17). Participants came from several countries, including Asian countries, but 39% (n=127) of the participants resided in the United States, 27% (n=88) of the participants resided in the United Kingdom and 18% (n=59) lived in Australia, with the remaining participants coming from other Asian and Western countries. In terms of the respondents' geographic locations, 50.2% (n = 163) lived in a Metropolitan area and 49.8% (n=162) lived in a Regional area. It should be noted that while 325 individuals participated in the study, only 306 participants' responses were used in the analysis after excluding 19 participants who reported ages below 18 years.

The unstandardized regression coefficients are measures of effect size. The OLS estimates indicate that only one variable, state FoMo, had a substantively important effect on state phubbing. For a unit change in state FoMo, there was 0.45 change in state phubbing while controlling for the effects of all other independent variables in the model. Considering state phubbing was measured along a scale from 1 to

5, each additional unit of change in state FoMo resulted in an increase of approximately half a unit of change on the 1 to 5 state phubbing scale.

The effect of state boredom was also statistically significant. However, given the unstandardized regression coefficient of state boredom was only 0.14, each additional unit change in state boredom resulted in an increase of only 0.14 unit change on the 1 to 5 state phubbing scale. Similarly, while the effect of age was statistically significant, the unstandardized regression coefficient of age was only -.014, indicating the effect of this variable on state phubbing was small. The negative sign indicates that as age increased, state phubbing decreased. In contrast, the effect of the other independent variables, namely state loneliness, geographic location and gender, was negligible as they were not statistically significant. Table 1 below summaries the status of the hypotheses.

Hypotheses	Variable	P Value	Result
H1	State Boredom	< .001	Significant
H2	State Fomo	< .001	Significant
H3	State loneliness	.779	Not Significant
	Area	.234	Not Significant
	Gender	.262	Not Significant
	Age	.003	Significant

Table 1. The status of the hypotheses

The overall goodness of fit of the model was high as measured by two indices: $R^2 = 0.36$ and Root MSE (SEE) = 0.77. The R^2 value of 0.36 shows that the model explained 36% of the variation of the dependent variable, state phubbing, around its mean. The value of the Root MSE is in the units of the dependent variable (state phubbing). As the state phubbing mean was 3.22, the small value of .77, which yielded a coefficient of variation (CV) of 23.9%, indicates that the model was a good fit. That said, together, the indices of the model (R^2 and Root MSE) suggest that there are other predictors that may play a role in the state phubbing model.

The above equation, eq. (1), can be re-written as follows:

$$\text{State Phubbing} = 2.13 + 0.14 \text{ State Boredom} + .45 \text{ State FoMo} - 0.031 \text{ State Loneliness} + 0.12 \text{ Gender} - 0.113 \text{ Geographic Location} - 0.014 \text{ Age} + e \quad (2)$$

5 DISCUSSION

The aim of the current study was to investigate the effect of fleeting feelings of boredom, FoMo and loneliness on state phubbing. Both state boredom and state FoMo had a significant effect on state phubbing, suggesting that increases in state boredom or state FoMo will result in an increase in state phubbing. Further, the participants' age was also a significant predictor within the model, demonstrating that state phubbing decreases with age. Contrary to our expectations, state loneliness did not have a significant effect on state phubbing. It is not clear why the result relating to state loneliness was not significant but it could be because the predictor state loneliness was measured using a single item. A future study should use the UCLA Loneliness 20 items scale over a two week period to measure state loneliness because it demonstrated high levels of consistency in a number of studies and is a well-known measure of loneliness.

The hypothesis that state boredom would predict state phubbing was supported by the results. The results showed that as state boredom increases state phubbing increases, suggesting fleeting feelings of boredom trigger phubbing. It is not clear what caused participants to experience state boredom, but this is a question for future research. For example, future research could investigate if state boredom is caused by the face-to-face conversation lack of stimulation. That said, this finding is supported by past research findings, which found that boredom proneness predicted problematic smartphone use (Elhai et al. 2017) and phubbing frequency (Al-Saggaf et al. 2018). These results highlight the relevance of state boredom as a contributor to phubbing behaviour, and align with the notion that individuals are motivated to phub to manage negative feelings, such as immediate feelings of boredom, which the U&G theory emphasises.

The hypothesis that state FoMo would predict state phubbing was supported by results. The results indicate that state FoMo is a strong predictor of state phubbing. As state FoMo increases, state phubbing increases. Past research also demonstrated that FoMo is positively correlated with phubbing behaviour (Franchina et al. 2018; Davey et al. 2017). The results of the current study therefore demonstrate that

FoMo (as a state or a trait) is a reliable predictor of phubbing behaviour. The large magnitude of the regression coefficient of state FoMo and the large amount of variance that this variable explains lends support to the U&G theory (Papacharissi and Rubin 2000) prediction that people may instantly engage with their smartphones to relieve a state feeling even if this involves phubbing a conversational partner.

This paper makes a significant contribution to the literature. This study is the first that used a set of state predictors to explain phubbing as a state experience (state boredom, state of fear of missing out, and state loneliness). Multiple regression enabled us to see by how much state phubbing changes in response to a unit change in the independent variables, such as state boredom, while controlling for the effects of all other independent variables in the model. One limitation is that it is possible that the disproportionate representation of women to men in the current study affected the findings of gender. Future research should strive to recruit a representative sample of the population to increase the generalisability of the findings.

Phubbing has been found to be common in workplaces (Roberts and David 2017) and when employers engage in phubbing behaviour, phubbing has been found to decrease employee engagement (Roberts and David 2017). Phubbing has also been found to negatively impact conversation quality. Phubbing during conversation has been found to decrease the perceived quality of communication, and overall relationship satisfaction (Chotpitayasunondh and Douglas 2018), and checking smartphones during face-to-face interactions can reduce the sense of emotional connection (Nakamura 2015). In addition, frequent texting via smartphones has been associated with increased smartphone-related conflicts and lower evaluations of relationship quality (Roberts and David 2016).

This paper reports on a study that used a newly established and validated scale for phubbing (state phubbing), which took into account both the fleeting or momentary nature of phubbing and the psychological properties of this behavior and applied a set of state predictors that perceived phubbing behavior as a state experience (state boredom, state of fear of missing out, state loneliness). The U&G theory provided a valuable framework for understanding why state factors are better predictors of phubbing behaviour than trait predictors. While not all the U&G factors were investigated in this study, because the study was concerned with the motivations relating to managing negative emotions, well established scales for state boredom, state fear of missing out and state loneliness, that demonstrated acceptable internal reliability and construct validity, were used in the study. That said, a future study should adopt a modified version of the U&G scale to understand the mediating role of state phubbing in the motivation to use the smartphone.

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