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**Personality and Media Multitasking in the College Classroom: Context-Dependent
Implications of Conscientiousness and Agreeableness**

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Ethics approval

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Consent to participate

Informed consent was obtained from all individual participants included in the study.

Availability of data and material

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Abstract

Both personality and contexts may account for media multitasking in the college classroom. As this area of research was lacking, the present study examined which personality traits would be associated with in-class media multitasking in different contexts of text messaging.

Undergraduate students (83 males and 65 females; average age: 20.0 [$SD = 4.3$]) completed a questionnaire on demographic characteristics, general text-messaging behavior, and Big Five personality traits as well as a delay-discounting task. This task had two hypothetical scenarios in which participants received either an urgent text message from their significant other (Significant Other condition) or a non-urgent message from a casual friend (Casual Friend condition), and they rated their likelihood of immediately replying to the message during the class versus waiting to reply until the class was over. For each of the conditions, hierarchical regression analyses were conducted to examine whether personality traits predicted the likelihood of waiting, after controlling for demographic characteristics and general text-messaging behavior. Whereas only conscientiousness independently predicted the likelihood of waiting in the Significant Other condition ($\beta = .20, p = .033$), only agreeableness independently predicted the likelihood in the Casual Friend condition ($\beta = .27, p = .002$). These findings contribute to the sparse literature on links of personality traits and in-class media multitasking by highlighting the possible context-dependent aspects of these links. The findings also indicate potential directions of future research including exploring approaches to reducing media multitasking in the college classroom while taking both personality and specific contexts into consideration.

Keywords: media multitasking, in-class mobile phone use, conscientiousness, agreeableness, college students

Personality and Media Multitasking in the College Classroom: Context-Dependent Implications of Conscientiousness and Agreeableness

Media multitasking refers to the use of media (e.g., text messaging, online activities such as checking social networking sites and other websites) when engaging in non-media activities or engaging in more than one media activities simultaneously (van der Schuur et al., 2015). It has become more prevalent and problematic in the college classroom (e.g., Baker et al., 2012; Bjornsen & Archer, 2015; Tindell & Bohlander, 2012). Whereas many college students are overconfident about their ability of multitasking, or task switching (i.e., quickly switching their focus between multiple cognitive tasks; Monsell, 2003), during class (Williams et al., 2011), in-class media multitasking may negatively affect their academic performance due to the brain's limited ability to simultaneously handle multiple tasks (Marois & Ivanoff, 2005). Indeed, media multitasking in the college classroom predicts poorer academic outcomes such as lower grades and GPA (Bellur et al., 2015; Bjornsen & Archer 2015; Lee et al., 2017; McDonald, 2013; Ravizza et al., 2014). These negative implications of media multitasking in the classroom highlight the importance of addressing factors associated with this problematic student behavior, which can help identify approaches to improving student concentration and performance in the classroom.

Previous research has identified multiple factors that predict in-class media multitasking, which include instructional factors (e.g., instructor credibility, clarity in class instructions; Johnson 2013; Ledbetter & Finn 2016), social factors (e.g., size of social network in which students regularly communicate via texting; Olmsted & Terry 2014), and habitual factors (e.g., daily texting usage; Wei & Wang 2010). In addition, similar to other problematic or "addictive" behaviors in inappropriate settings, such as texting while driving and excessive internet use, the

frequency of in-class media multitasking has been found to be associated with impulse control (Hayashi & Nenstiel, 2019) as well as impulsive decision making (Hayashi, 2020; Hayashi & Blessington, 2018). Moreover, personality may be another unique predictor for media multitasking in the college classroom, though research on the relationships between personality and in-class media multitasking is lacking. Considering the relevance of personality traits (e.g., Komarraju et al., 2009) as well as in-class media multitasking (e.g., Bellur et al., 2015) to academic outcomes, the present study focused on investigating the associations of personality traits with media multitasking in the college classroom.

Big Five Personality Traits and Media Multitasking

Big Five personality traits (John & Srivastava, 1999) have been widely studied in academic contexts (e.g., Komarraju et al., 2009) as well as non-academic contexts (e.g., Horwood & Anglim, 2018). Big Five traits include extraversion (characterized by outgoingness, sociability, and assertiveness), agreeableness (characterized by cooperativeness, helpfulness, and caring toward others), conscientiousness (characterized by responsibility, and organized and task-oriented tendencies), neuroticism (characterized by emotional instability and negative emotions such as anxiety), and openness to new experience (characterized by intellectual curiosity and preference for novelty) (Bates et al., 2010).

While personality traits have been suggested to account for social behaviors in general, a growing number of researchers have addressed links of personality traits to mobile phone and internet use (e.g., Horwood & Anglim, 2018; Nikbin et al., 2020; Wilson et al., 2010). The increased interest in this area of research may be related to the current situation in which mobile phones are a part of many people's lives and excessive mobile phone use can lead to various problems in different settings while personality traits may be risk factors for or protective factors

against addictive or problematic mobile phone use (Horwood & Anglim, 2018; Nikbin et al., 2020). For example, previous studies (e.g., Horwood & Anglim, 2018; Nikbin et al., 2020; Wilson et al., 2010) indicated associations of some Big Five traits with general problematic mobile phone use (e.g., excessive use of texting or social network services [SNS]) for adult populations. Although their findings have been somewhat inconsistent, the overall tendency of these findings shows that higher extraversion (e.g., Bianchi & Phillips, 2005; Jenkins-Guarnieri et al., 2012; Nikbin et al., 2020; Wilson et al., 2010), higher neuroticism (e.g., Ehrenberg et al., 2008; Horwood & Anglim, 2018; Nikbin et al., 2020), and/or lower conscientiousness (e.g., Horwood & Anglim, 2018; Nikbin et al., 2020; Wilson et al., 2010) predict general problematic mobile phone or SNS use. In contrast, fewer studies indicated links of agreeableness (Ehrenberg et al., 2008) and openness (Nikbin et al., 2020) to such problematic use; thus, agreeableness and openness seem to be less predictive of problematic mobile phone use, though agreeableness, in particular, has been found to predict academic achievement possibly due to its related regulatory factors (e.g., inhibiting behavior in socially adaptive ways) and relational factors (e.g., maintaining good teacher-student relationship) (Tackett et al., 2019).

Although personality may play some roles in social behaviors such as mobile phone use, those behaviors may be accounted for by both personality and specific contexts (Caspi, 1987). While media multitasking has become more prevalent and problematic in the college classroom as discussed earlier, there is only one study (Toyama & Hayashi, 2021), at least to the best of our knowledge, that addressed associations between personality traits and mobile phone use in the context of the college classroom. The study showed that after controlling for general mobile phone use and impulse control as well as demographic characteristics, only conscientiousness predicted (less) mobile phone use in the college classroom while the other Big Five traits did not.

The authors speculated that major aspects of conscientiousness including self-regulation and self-control might help students focus on achieving long-term goals (e.g., getting good grades, college graduation) while resisting their temptation for immediate, smaller rewards (e.g., checking and responding to texts) (i.e., delayed gratification; Roberts et al., 2014).

Since no other studies addressed such links between personality traits and multimedia tasking in the classroom, what remains unanswered is whether such a personality trait as conscientiousness can account for in-class media multitasking uniformly regardless of situations (i.e., more specific contexts in the classroom) in which college students are tempted to use their mobile phone in the classroom. As students with certain personality traits may not always behave in similar ways across different social situations, it is likely that their behavior, such as in-class media multitasking, can be explained more comprehensively by taking into account possible person-situation interaction: the effects of personality factors on the behavior may depend on the context (Kihlstrom, 2013). For example, a text message received from a significant other about some urgent issue and a non-urgent message from a casual friend would have different levels of importance for students (Atchley et al., 2012; Foreman et al., 2019). While conscientiousness may “generally” predict in-class media multitasking (and other personality traits may not), it may depend on the specific social situation or the importance of the text message. There has been no previous research, to our knowledge, that addresses such situational factors in investigating the links of personality traits to media multitasking in the classroom.

Purpose of the Present Study

The purpose of the present study was to fill in the gap in the literature by investigating associations of Big Five personality traits with media multitasking in the college classroom taking into consideration situational factors that may influence student behavior. Specifically,

our research question was whether Big Five traits would differentially predict in-class text messaging behavior for college students under two different social situations during class time: (a) receiving an urgent text message from their significant other and (b) receiving a non-urgent text message from a casual friend. As discussed earlier, research on links of personality traits and in-class media multitasking was lacking, and this was the first study that further addressed situational factors related to in-class texting. The present study was expected to contribute to improving the knowledge of which individual differences or personality traits account for the problematic behavior in various contexts in the classroom that has potential negative impacts on student academic performance and outcomes. We also expected that our findings would be particularly useful for future research in deciding which types of students should be targeted to improve their behavior and engagement in class while considering different situations that would tempt them to reply to a text message.

As a unique aspect of the present study, instead of using self-reports of students' text messaging behavior, we used the delay-discounting task developed and validated by Hayashi and Blessington (2018) that simulated impulsive decision making associated with text messaging in the classroom. In this task, hypothetical scenarios with the two social situations described above were presented, in which participants rated their likelihood of immediately replying to the text message versus waiting to reply until the class is over when the delay to the end of the class was manipulated. Referring to the limited previous finding (Toyama & Hayashi, 2021) as well as implications of major facets of conscientiousness (e.g., self-regulation, self-control; Roberts et al., 2014), we speculated that higher conscientiousness might predict higher likelihood of waiting to reply to the text message, possibly regardless of the situations. However, due to the lack of sufficient previous research that specifically addressed the role of such situational factors on in-

class media multitasking, we did not make any specific hypotheses but addressed our research question in an exploratory manner.

Method

Participants

One hundred and sixty six undergraduate students who were enrolled in introductory psychology courses at a university in the Northeastern United States were recruited for the present study. They received course credit for their participation. Students whose response patterns were nonsystematic ($n = 18$; details described below) were excluded and their data were not analyzed. The remaining sample was composed of 83 female and 65 male students, and their mean age and years of higher education were 20.0 ($SD = 4.3$) and 1.7 ($SD = 1.2$), respectively.

Procedure

An online session was hosted on Qualtrics (Provo, UT). Students received an email from Qualtrics that contained the link to the online survey. After clicking the “Agree to participate” button as a part of the informed consent, they completed questionnaires on their demographic characteristics (age, gender, and years of higher education), general text-messaging behavior, and Big Five personality traits, as well as a delay-discounting task with hypothetical text-messaging scenarios. The institutional review board at the university that the second author is affiliated with reviewed the study protocol and deemed the study exempt.

General text-messaging behavior. The Excessive Use subscale of the Self-perception of Text-message Dependency Scale (STDS; Igarashi et al., 2008) was used to assess participants’ levels of excessive text messaging in a general context. The subscale of the STDS was chosen for the present study because the STDS has been extensively used in previous research (e.g., Lu

et al., 2011, 2014), particularly in some studies on impulsivity and impulsive decision making (e.g., Hayashi & Blessington, 2020; Hayashi & Washio, 2020). The subscale consists of five questions (e.g., “I often exchange many text-messages in a short period of time”) with a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores represent higher levels of text messaging. The Cronbach’s alpha with the current sample was .80.

Big Five personality traits. The Big Five Inventory (BFI; John & Srivastava, 1999), a self-reported measure of the Big Five personality traits (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness), consists of 44 items (e.g., “I see myself as someone who perseveres until the task is finished”) with a 5-point Likert-type scale ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). The negatively worded items are reverse coded, and higher scores indicate stronger tendencies of the traits. The BFI was chosen for the present study because it has demonstrated good reliability (John & Srivastava, 1999) as well as good convergent and discriminant validity (Srivastava et al., 2003). The Cronbach alphas with the current sample are .82 (Extraversion), .77 (Agreeableness), .77 (Conscientiousness), .79 (Neuroticism), and .70 (Openness).

Delay-discounting task. The delay-discounting task was adopted from Hayashi and Blessington (2018) with some modifications. We chose this task because of the relevance to the topic. In the present study, the following two hypothetical scenarios were presented: (a) students receive an urgent text message from their significant other while they are in the classroom with a strict no-mobile-phone-use policy (hereafter Significant Other condition) and (b) students receive a non-urgent text message from a friend while they are in the classroom with a strict no-mobile-phone-use policy (Casual Friend condition). Using a visual analog scale, participants rated their

likelihood of replying to the text message immediately versus waiting to reply until the class is over. The task presented the following instruction under the Significant Other condition:

Imagine that your significant other (or best friend) has just sent a text message saying “text me asap” while you are in class. The syllabus states no cell phone use is allowed, and the professor strictly enforces the policy. You are sitting in the back of a small classroom (20 students in the class). If the class ends in X min, how likely you are to reply now (rating: 0) versus waiting until the class ends (rating: 100)?

The instruction under the Casual Friend condition was the same, except that the first sentence was replaced with “Imagine that one of your friends has just sent a text message saying “text me when you can” while you are in class.” Directly below the instruction, the visual analog scale, a horizontal line labeled from 0 to 100 in increments of 10, was located, with the descriptive anchors of *Definitely reply now* and *Reply after class* on the left and right sides, respectively. The participants indicated their likelihood of waiting until the end of class by clicking the slider and moving it across the horizontal line. The Significant Other condition was in place during the first six trials, with a varying delay of X minutes until the end of class ($X = 0.5, 5, 15, 30, 60, \& 120$ min presented in this order). During the second series of six trials, the Casual Friend condition was in place with the same delay values.

In studies on delay discounting, it is not uncommon to find nonsystematic patterns of responses due to various idiosyncratic reasons (e.g., random responding or carelessness). Consistent with previous studies (e.g., Hayashi et al., 2015), we employed the algorithm developed by Johnson and Bickel (2008) to evaluate the degree of nonsystematic responses. By applying Criterion 1 of the algorithm (any value at a given delay being greater than the preceding value by more than 20%), we identified 18 participants whose responses were nonsystematic

under either or both of the two conditions, and their data were excluded from the analyses. The exclusion rate (10.8%) is smaller than the average rate reported in a meta-analysis (Smith et al., 2018).

To analyze the decrease in the likelihood of waiting to reply as a function of time to the end of the class (i.e., the degree of delay discounting), the area under the curve (AUC), a descriptive, non-theoretical measure of discounting that summarizes the degree of discounting across all delay values, was calculated for each condition based on the method described by Myerson et al. (2001). The values of AUC can range between 0 (i.e., exclusive choice of 0 likelihood at all delay values) and 1 (i.e., exclusive choice of 100 likelihood at all delay values), and higher AUC values in this study indicate higher likelihood of waiting to reply until the class is over.

Statistical Analysis

The AUC data across conditions were compared with a paired-samples *t* test because each participant was exposed to both conditions. Correlational analyses were conducted by calculating Pearson correlation coefficients. A hierarchical linear regression analysis was conducted for each condition to examine whether the subscales of the BFI make unique contributions to the variance in the AUC measure after controlling for the demographic variables and general text messaging. In Step 1, the demographic variables (age, gender, and years of education) and general text messaging were entered, which was followed by the entries of the subscales of the BFI in Steps 2. The assumptions of linear relationship, multivariate normality of residuals, homoscedasticity, and no multicollinearity were examined, and no violation to these assumptions was observed. All statistical analyses were performed with SPSS Version 26, and the statistical significance level was set at .05.

Results

Figure 1 shows the mean likelihood of replying to a text message after class as a function of delay to the end of the class under the Casual Friend condition (closed circles) and the Significant Other condition (open squares). The likelihood decreased as a function of the delay under both conditions, suggesting that the value of text messaging is subject to delay discounting. The visual analysis of the figure indicates that the decrease in the likelihood was greater under the Significant Other condition. The results of a paired-samples t test based on AUC data calculated from individual participants were consistent with the visual analysis: AUC value was significantly lower (i.e., the decrease in the likelihood was significantly greater) under the Significant Other condition ($M = 0.55, SD = 0.36$) than under the Casual Friend condition ($M = 0.75, SD = 0.33$), $t(147) = -7.37, p < .001$, Cohen's $d = 0.61$.

Table 1 shows Pearson correlation coefficients of demographics, general text messaging, Big Five personality traits, and the AUC measures for both conditions. As shown in the table, the AUC measures under the Significant Other and Casual Friend conditions, respectively, were significantly correlated with (a) General texting: $r(146) = -.26, p = .001$; $r(146) = -.24, p = .003$, (b) Agreeableness: $r(146) = .17, p = .037$; $r(146) = .38, p < .001$, (c) Conscientiousness: $r(146) = .26, p = .001$; $r(146) = .29, p < .001$, and (d) Openness: $r(146) = .17, p = .038$; $r(146) = .22, p = .008$.

Table 2 shows results of the hierarchical linear regression analyses. The additional variance accounted for by entering the BFI subscales in Model 2 was 7.4% and 17.1% for the Significant Other and Casual Friend conditions, respectively, and these improvements were statistically significant: $\Delta F(5, 138) = 2.42, p = .038$ and $\Delta F(5, 138) = 6.23, p < .001$. Overall, Model 2 accounted for 16.2% of the variance under the Significant Other condition, $F(9, 138) =$

2.95, $p = .003$, adjusted $R^2 = .107$; and 24.2% of the variance under the Casual Friend condition, $F(9, 138) = 4.91$, $p < .001$, adjusted $R^2 = .193$.

With respect to the contribution of each predictor in Model 2, General texting was a significant predictor for the AUC measures under both conditions: $\beta = -.27$, $t = -3.26$, $p = .001$ under the Significant Other condition and $\beta = -.22$, $t = -2.70$, $p = .008$ under the Casual Friend condition. Among the Big Five traits, Conscientiousness was the only significant predictor under the Significant Other condition: $\beta = .20$, $t = 2.15$, $p = .033$, whereas Agreeableness was the only significant predictor under the Casual Friend condition: $\beta = .27$, $t = 3.18$, $p = .002$.

Discussion

As a unique aspect of the present study, we investigated whether Big Five traits predicted college students' likelihood of waiting to reply to a text message received in the classroom, controlling for demographic characteristics and general text messaging behavior, while distinguishing between two different social situations: receiving an urgent message from the student's significant other (Significant Other condition) and receiving a non-urgent message from their casual friend (Casual Friend condition). Interestingly, the Big Five trait that independently predicted the likelihood differed (i.e., conscientiousness or agreeableness) across the two conditions. As discussed earlier, the present study was the first, to our knowledge, that examined associations of personality traits with in-class text messaging in different contexts or situations. While the findings of this study could not allow us to make conclusions regarding *why* the personality traits could be associated with in-class texting differently depending on the context, we provide some speculations as below. We expect that these speculations can help develop future studies, which will contribute to improving the knowledge of links of personality traits and in-class media multitasking as well as other relevant factors underlying such links.

The finding that higher conscientiousness significantly predicted higher likelihood of waiting to reply in the Significant Other condition does not seem surprising because major facets of conscientiousness include self-regulation and self-control (Roberts et al., 2014), which were shown to be significantly related to the frequency of general in-class text messaging (Abel et al., 2012; Wei et al., 2012). Thus, it is speculated that conscientious students are likely to have the ability to regulate themselves to concentrate in class while resisting their temptation to immediately respond to the apparently important text message without prioritizing the immediate outcome (e.g., social interaction from text messaging) over their long-term outcomes (e.g., a good course grade, GPA, college graduation, etc.). However, the finding for the other, Casual Friend condition cannot be explained only by this speculation as conscientiousness did not independently predict the likelihood of waiting (after controlling for agreeableness and other personality traits). Instead, in the Casual Friend condition, only agreeableness significantly predicted the likelihood of waiting, for which an additional explanation is needed.

As a possible explanation, conscientiousness and agreeableness have some commonalities (Tackett et al., 2019), which are closely related to effortful control or “the ability to inhibit a dominant response to perform a subdominant response” (Rothbart & Bates, 1998, p. 137). As effortful control is a major form of self-regulation (Rothbart & Rueda, 2005), the term of effortful control is sometimes used to represent conscientiousness in the literature (e.g., Bates et al., 2010). However, effortful control is also suggested to include both interpersonal and intrapersonal aspects of self-regulation, and agreeableness may involve the interpersonal aspect of effortful control (Tackett et al., 2019). In particular, as a major facet of agreeableness, compliance or following interpersonal rules (Tackett et al., 2019) may be relevant to the present findings, as following a rule set by the instructor for mobile phone use seems to require students

to exercise effortful control to inhibit their immediate temptation. Specifically, in order to resist their temptation to respond to a (non-urgent) text message, students may need to self-regulate to follow the rule on in-class mobile phone use (i.e., agreement with the instructor), and agreeable students may be likely to comply with the interpersonal agreement by resisting the temptation. While many conscientious students may also demonstrate such self-regulation, that is possibly because they are also likely agreeable, as seen in Table 1 showing that agreeableness and conscientiousness are moderately correlated. This may explain why the effect of conscientiousness was not significant after controlling for the effect of agreeableness. In contrast, if the urgency of the text message increases (e.g., an urgent message from their significant other), resisting the temptation to respond to the message may require more than the ability to comply with an interpersonal agreement. Rather than simply feeling the need to comply with an agreement with others (the instructor in this case), the urgency may create an *intrapersonal* dilemma: whether to satisfy their immediate desire to respond to their significant other or continue concentrating on their long-term academic goals. The aspect of effortful control that would be required to resist immediate temptation in this kind of urgent situations may be less interpersonal and more task-oriented, which is a major characteristic of conscientiousness rather than agreeableness (Jensen-Campbell et al., 2002; Roberts et al., 2014).

Although these interpretations about the nuanced implications of agreeableness and conscientiousness remain speculative, they can inform future research. For example, one potential direction of future research is to examine how distinct (e.g., interpersonal and intrapersonal) aspects of effortful control or self-regulation are differentially related to media multitasking in various situations or contexts during class time (e.g., different types of text messages, varying levels of urgency or importance of those messages). Related to this, as the

present findings suggest that the associations of Big Five traits with in-class media multitasking are context-dependent (i.e., person-situation interaction; Kihlstrom, 2013), reducing this problematic student behavior may require multiple types of interventions and/or comprehensive approaches that take various scenarios during class into consideration. Specifically, while promoting key facets of conscientiousness including self-regulation and self-control may be effective for some of the scenarios, especially those that involve some levels of urgency, it may also be necessary to have interventions to enhance some facets of agreeableness, particularly compliance, for other scenarios of less urgency.

For more urgent situations, for example, promoting Episodic Future Thinking may help individuals extend their temporal window over which they appreciate the value of delayed reward, which is expected to increase the salience of their long-term goals and result in enhanced self-regulation/control (cf. Stein et al., 2016). For non-urgent situations, on the other hand, while there has been a dearth of research on how agreeableness or its facets can be enhanced, helping college students develop self-regulatory ability to follow rules may be a potential way to increase their compliance. Moreover, considering the relevance of instructional factors (e.g., clarity of instruction) to in-class media multitasking (Bolkan & Griffin, 2017), it may be beneficial for instructors to establish close relationships with students, which may contribute to enhancing the students' compliance with a classroom policy and reducing media multitasking in the classroom. Additional studies are needed to assess the effects of these types of interventions on in-class media multitasking in various contexts.

Limitations

Multiple limitations should be noted. First, due to the cross-sectional and correlational nature of the present study, we could not make a causal conclusion on the role of personality

traits on the performance on the delay-discounting task. Although we speculated that personality traits, specifically conscientiousness and agreeableness, might make impacts on student behavior of text messaging, we could not eliminate the possibility of the opposite direction of causality (e.g., frequent use of text messaging affecting conscientiousness and agreeableness by reducing self-regulation and rule following, respectively). It is also possible that third variables we could not identify account for the apparent links of personality traits to the performance on the delay-discounting task. Considering their relative stability with some changes over long periods of time (Bates et al., 2010), it may be difficult to manipulate personality traits. Therefore, an option of future research may be to manipulate cognitive processes (e.g., effortful control) related to the personality traits using an experimental design addressing in-class media multitasking in different contexts.

Second, the delay-discounting task in the present study was hypothetical and it is possible that the performance on the task may not correspond to the actual behavior in the classroom. It is important to note, however, that previous studies using monetary rewards have established that hypothetical and real outcomes in delay-discounting tasks produce similar results (e.g., Lagorio & Madden, 2005; Madden et al., 2003, 2004). Nevertheless, it is advisable for future research to empirically evaluate whether the performance in the present delay-discounting task can predict actual behavior in the classroom.

Third, because the two conditions (Significant Other and Casual Friend) differed in two dimensions (relationship to the sender and urgency of the text message), the present findings do not allow for disentangling which factor played a significant role in the context-dependent relations between personality traits and in-class media multitasking. Although the present exploratory study purposefully employed this design choice to make the scenarios as realistic as

possible and possibly maximize the chance of revealing the context dependency, future research should follow up the present study and identify which factor is more important. Also, the order of the two conditions was not counterbalanced across participants. Although a previous study that examined a potential order effect of discounting tasks found no such an effect (Vanderveldt et al., 2015), it would be still advisable for future research to control for it by counterbalancing conditions.

Lastly, the sample of the present study consisted of undergraduate students in introductory psychology courses at one university. Although the present study was the first study, to our knowledge, addressing context-dependent implications of personality traits for in-class media multitasking and its findings can be a basis for further investigations, the present findings may not be generalizable to diverse student populations at various universities. Future research should test the generalizability of the present findings by using larger and more heterogeneous samples.

Conclusions

The present study examined links of Big Five personality traits to media multitasking in the college classroom taking into consideration different social and situational contexts (receiving an urgent text message from a significant other and receiving a non-urgent one from a casual friend). The different personality traits independently predicted the likelihood of in-class media multitasking across the different contexts: conscientiousness in the urgent context and agreeableness in the non-urgent context. This finding suggests that associations of personality traits with in-class media multitasking are context-dependent (and thus illustrating a possible person-situation interaction; Kihlstrom, 2013). Building on these findings, the present study contributes to the literature by proposing some directions of future research to improve the

knowledge in this area and explore approaches to reducing media multitasking in the college classroom.

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Table 1

Pearson Correlation Coefficients of Demographics, General Texting, Big Five Traits, and AUC Measures

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Gender (Female: 0/Male: 1)	-.01	-									
3. Education	.25**	.13	-								
4. General texting	.01	-.17*	-.10	-							
5. Extraversion	-.14	-.03	-.02	.24**	-						
6. Agreeableness	.13	-.16	.04	-.05	.02	-					
7. Conscientiousness	.00	-.14	.11	-.08	.18*	.40**	-				
8. Neuroticism	-.07	-.29**	-.11	.15	-.17*	-.20*	-.29**	-			
9. Openness	.12	.07	.10	.07	.20*	.34**	.28**	-.27**	-		
10. AUC: Significant Other	.03	-.09	.04	-.26**	-.05	.17*	.26**	-.05	.17*	-	
11. AUC: Casual Friend	-.07	-.05	-.04	-.24**	-.05	.38**	.29**	-.16	.22**	.56**	-

Note. AUC = Area Under the Curve. * $p < .05$. ** $p < .01$.

Table 2

Hierarchical Linear Regression Predicting AUC Measures under Both Conditions

Variable	AUC: Significant Other				AUC: Casual Friend			
	<i>B</i>	<i>SE B</i>	β	<i>T</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Model 1								
Age	.00	.01	.02	0.28	-.00	.01	-.05	-0.65
Gender	-.10	.06	-.14	-1.67	-.06	.05	-.09	-1.07
Education	.01	.02	.02	0.23	-.01	.02	-.04	-0.50
General texting	-.02	.01	-.28	-3.49**	-.02	.01	-.26	-3.15**
	$R^2=.09, F=3.44^*$				$R^2=.07, F=2.75^*$			
Model 2								
Age	.00	.01	.01	0.09	-.01	.01	-.11	-1.40
Gender	-.07	.06	-.09	-1.07	-.03	.05	-.04	-0.48
Education	.00	.02	-.01	-0.17	-.02	.02	-.07	-0.94
General texting	-.02	.01	-.27	-3.25**	-.02	.01	-.22	-2.70**
Extraversion	.00	.01	-.05	-0.53	.00	.00	-.07	-0.91
Agreeableness	.00	.01	.02	0.27	.02	.01	.27	3.18**
Conscientiousness	.01	.01	.20	2.15*	.01	.01	.13	1.50
Neuroticism	.00	.01	.06	0.67	.00	.00	-.04	-0.47
Openness	.01	.01	.16	1.81	.01	.01	.13	1.57
	$R^2=.16, F=2.95^{**}$				$R^2=.24, F=4.91^{***}$			
	$\Delta R^2=.07, \Delta F=2.42^*$				$\Delta R^2=.17, \Delta F=6.23^{***}$			

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

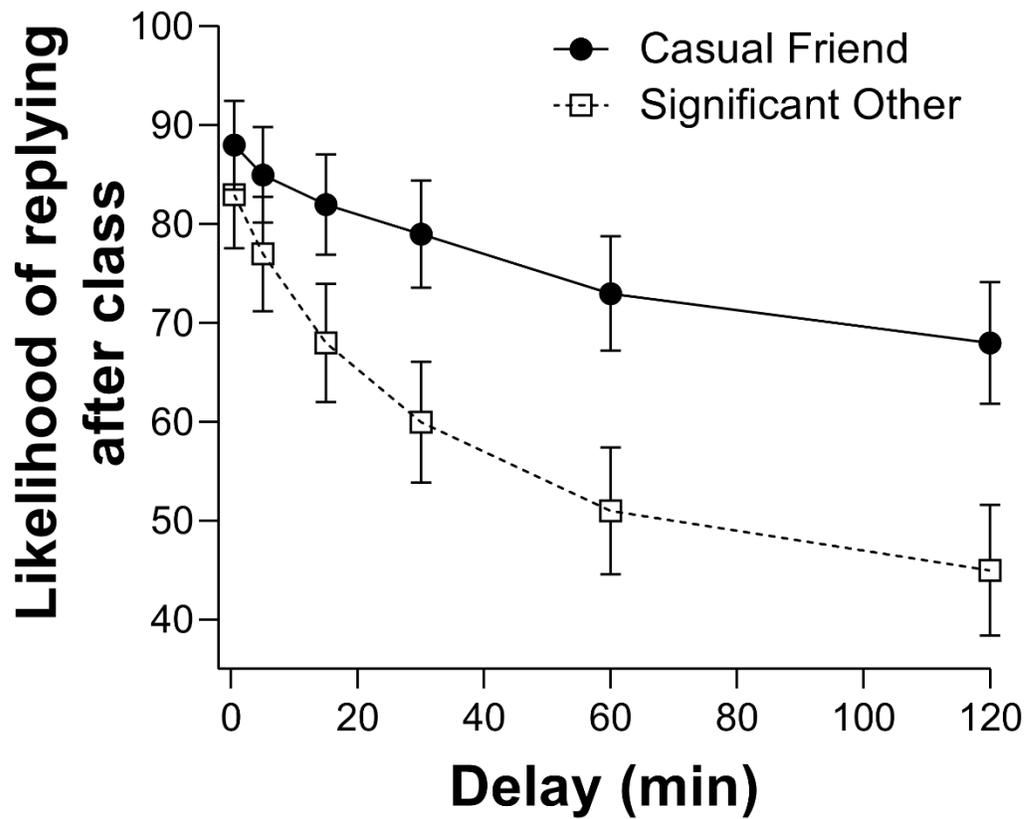


Figure 1. Mean likelihood of replying to a text message after class as a function of delay to the end of the class under the Casual Friend condition (closed circles) and the Significant Other condition (open squares). Error bars represent 95% confidence intervals.