A behavioral economic analysis of media multitasking: Delay discounting as an underlying process of texting in the classroom

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The American Psychological Association provides a review of experiments that demonstrate the issues caused by switching between tasks. The loss of productivity caused by multitasking justifies the investigation of the underlying decision making process that leads to texting in the classroom.


Amlung and colleagues find that there are substantial links between the tendency to discount delayed rewards and impulsive behavior. In our study, students that reported high frequency of the impulsive choice to text scored higher on delay discounting tasks with hypothetical opportunities to text and with hypothetical money.


Hayashi and colleagues report that the impulsive decision to text while driving is well characterized by the delay discounting paradigm. This study implemented a delay discounting task with a hypothetical texting-while-driving scenario. We developed our delay discounting task with the hypothetical texting-in-class scenario based on the task in this study. The findings of this study support the hypothesis put forth in our study that the impulsive choice to text in class can also be characterized by delay discounting.


MacKillop and colleagues report that delay discounting can be used to understand the self-control failure that occurs in addicts. Preference reversal refers to a change in preference from a larger-later reward to a smaller-sooner reward as the time to the receipt of the reward approaches. This reversal in preference is predicted by the hyperboloid function in this study and is a fundamental aspect of delay discounting.
https://www.beaweb.org/wp/?page_id=554

McCoy and colleagues report their findings regarding the prevalence of student phone use in the classroom. Their findings point to a large amount of media multitasking taking place in classrooms, which in turn means substantial loss of productivity in the classroom. This study provides justification for the study of the decisional mechanisms that lead students to text in class.

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Olmsted and colleagues published a study describing the factors that can be used to predict who engages in classroom texting. While this study details predictive factors, it does not address the actual decision-making mechanisms that lead students to text in class. This gap in the literature points to the need for further study, which our study provides.

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Patton and colleagues conducted this study to revise the Barratt Impulsiveness Scale and produced the latest version. This self-reported scale of impulsivity consists of three second-order factors labeled Attentional Impulsiveness, Motor Impulsiveness, and Non-Planning Impulsiveness. Our study used this scale for the purpose of assessing the self-reported impulsivity of participants as a compliment for the two behavioral measures of impulsivity used in the study.


Rachlin and colleagues produced this study which used hypothetical monetary rewards in a delay discounting task that served as a behavioral measure of impulsivity. Our study used this behavioral measure that tasked participants with choosing between smaller, immediate sums of money and delayed, larger sums of money.
Summary

Research process and strategies: The information used to support this research was primarily found on the psycINFO and PsycTESTS databases. The key phrases used to find these sources consisted of: delay discounting, texting in the classroom, impulsivity, media multitasking, and behavioral economics. Investigating the sources cited in previous studies of texting in class, as well as sources cited in previous studies implementing behavioral economics, allowed for the discovery of sources that directly or tangentially applied to this study.

Source selection: The sources cited in this project focused on either the overarching themes of media multitasking and behavioral economics or focused on more precise aspects of the study such as delay discounting and texting in class. These combined sources provided justification for the study of this topic along with pertinent information regarding the use and implementation of behavioral economic concepts to better understand impulsive behavior.

Source integration: This project is heavily influenced by previous projects advised by Dr. Hayashi. These prior studies used behavior economics to better understand impulsive cell phone use while driving, and this study extended this approach to texting in class. Previous studies have used delay discounting tasks with hypothetical monetary rewards as behavioral measures of impulsivity, and this is an approach that we replicated. Beyond the more established monetary task, our study used a delay discounting task with a hypothetical opportunity to text which Dr. Hayashi has used in other studies. Our study bridged a gap in the literature concerning the use of the delay discounting model and texting in class.

Social, ethical, or economic considerations in accessing information: Gathering information for this study was not always easy. Even with the databases available through the library, paywalls were encountered. On more than one occasion the free service ResearchGate proved valuable. This service directly links researchers together for the purpose of sharing information that would otherwise be inaccessible. If I was not fortunate enough to have access to the long list of databases provided by Penn State, I would have been greatly limited in my research. Some sources were initially found on Google Scholar, but access to them was only granted because of my status as a Penn State student.