UNDERSTANDING THE RELATIONSHIP BETWEEN MEDIA USE AND MALADAPTIVE DAYDREAMING

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Handan Uslu, B.S.

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Handan Uslu, B.S.

Thesis Advisor: D. Linda Garcia, Ph.D.
Thesis Reader: Leticia Bode, Ph. D.

ABSTRACT

Previous research about maladaptive daydreaming revealed media consumption’s role as a trigger and accompaniment of maladaptive daydreaming. This thesis builds on the previous literature, and explores how media consumption goes in tandem with maladaptive daydreaming by focusing on the behavioral dimensions of media use and daydreaming. For this purpose, literature from psychology, neuroscience, cultural studies, and media studies are synthesized. Daydreaming and media use are conceptualized as cultural practices that can be potentially addictive due to the rewarding experiences they provide. Subsequently, the relationship between maladaptive daydreaming and media use are analyzed in the context of the current interactive online media architecture. Specifically, maladaptive daydreaming patterns are analyzed in regard to three levels of media use: media use as a trigger for daydreaming, media use as an accompaniment of daydreaming, and online media use patterns as they relate to maladaptive daydreaming. To address these relationships, quantitative research is conducted. Postings were made to online platforms about maladaptive daydreaming, and an online survey is administered to 141 people who self-identify as maladaptive daydreamers. The first finding of this research is that maladaptive daydreamers who are being triggered more by media are more severely maladaptive daydreaming. Secondly, a relationship is found between daydreaming more frequently and listening to music more frequently. Thirdly, a relationship is established between
daydreaming more frequently and surfing in the Internet more frequently. In conclusion, this thesis characterizes the relationship between maladaptive daydreaming and media use, and makes suggestions for future research.
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CHAPTER ONE: INTRODUCTION

While the social sciences try to understand specific human behavior in regard to factors that are social, economic, or political, there are moments when humans don’t interact with their surroundings at all, but rather with themselves in an internal dialogue. These intrapersonal moments are significant, yet the existing research about the topic is not comprehensive (Ehn and Löfgren 2010; Gruis 2005). However, we can identify, characterize, measure, and therefore research these moments. Notwithstanding their elusiveness, previous research (Singer and Rowe 1962) has shown that what goes on inside people’s minds reveals a lot about how they internalize their interactions with their surroundings, and most importantly, with themselves.

Daydreaming is a case in point. While the term daydreaming is often used interchangeably with fantasy, it is a completely different phenomenon. In contrast to fantasies, which are deliberately thought out, during daydreaming “content arises spontaneously” (Butler 2006). Nor is daydreaming the same as mind wandering, a term with which it is often confused. Whereas mind wandering may involve a series of random thoughts, (Butler 2006; Dorsch 2014) daydreaming has a coherent structure insofar as daydreams involve plots and characters, and constitute a continual train of thought.

Although daydreaming takes place within an individual, it occurs in the context of the societal setting in which one is located (Ehn and Löfgren 2010). For example, one ethnological study (Meyer 2008) revealed that the daydreaming narratives of German high-school students were appropriated from their cultural sphere, drawing on such materials as folklore, newspapers, or television. Furthermore, the surrounding of a person is among the factors that ignite daydreams (Butler 2006; Aylwin 1990), by providing “external stimuli or cues” (Butler 2006,
Given the relationship between daydreams and external factors, we can view daydreams not only as psychological occurrences, but also as cultural practices. Ehn and Löfgren (2010) define daydreaming as “...an elusive practice, shaped by contexts and collective understandings that are learned, shared, and communicated in many ways” (2010, 124), and call for a cultural point of view to understand daydreams. The findings of a cross-cultural daydreaming analysis (McCann and Honeycutt 2006) support this perspective, by pointing out statistically significant variations in the daydreaming frequency of people from different cultural contexts, namely Thailand, the United States, and Japan.

Approaching daydreaming as a cultural practice allows us to analyze it from a cultural studies perspective, and hence apply the relevant theoretical frameworks and methodological tools to daydreaming research. Communication theories regarding interpersonal communication, for example, can be appropriated to understand imagined interactions, a form of daydreaming in which people imagine they are in a dialogue. For instance, an analysis of the characters in which people engage in imagined interactions revealed that “daydreaming about people not close to us predicts more loneliness” (Mar et al. 2012, 401). In fact, many researchers coming from the field of psychology have analyzed daydreaming accounts thematically, categorized daydreaming narratives, and found relationships between daydreaming content and other psychological variables (Singer and Schonbar 1961).

One type of daydreaming that is particularly dependent on culture is “maladaptive daydreaming.” The term maladaptive daydreaming refers to the condition of excessive and
compulsive daydreaming, and the associated stress that comes with it (Bigelsen and Schupak 2011). While frequent daydreaming patterns have been observed for some time, none of the constructs related to frequent daydreaming addressed compulsive daydreaming patterns, nor the related stress associated with them. For example, Freud’s renowned patient Anna O. was known to be an excessive daydreamer (Ehn and Löfgren 2010). The term “autistic fantasy” is described in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychological Association, 1994); it characterized excessive daydreaming as a particular type of defense mechanism. Zelin et al. (1983) found that people with mental illnesses were more likely to have daydreams with narrations of death, suffering, power, revenge, and withdrawal. Maladaptive daydreaming, on the other hand, addresses the compulsive nature of daydreaming (Bigelsen and Schupak 2011).

One major factor that has been associated with maladaptive daydreaming is media consumption. According to a study by Bigelsen and Schupak, media use functions as a trigger and accompaniment of maladaptive daydreaming (2011). Firstly, by characterizing maladaptive daydreaming as a behavioral addiction, Bigelsen and Schupak points to “triggers” that may initiate excessive daydreaming. Triggers are stimuli that can take various forms such as external cues (Butler 2006), mood states, feelings, and events (Childress et al. 1994), and they lead to particular feelings and behaviors related to psychological conditions. Bigelsen and Schupak’s findings reveal that media use is a trigger for daydreaming: 73% of maladaptive daydreamers “reported that music, television, books and other media were common triggers,” (2011) pointing out the importance of media consumption as external cues in the physical environment that trigger daydreams. Secondly, media use accompanies daydreaming in some cases: listening to
music while pacing was the most commonly reported kinesthetic daydreaming ritual of maladaptive daydreamers (Bigelsen and Schupak 2011).

Other than these findings, there is no solid data about the specifics of media use patterns in regard to maladaptive daydreaming behavior, or any research about maladaptive daydreaming and online media consumption. This thesis seeks to bridge this gap by addressing the precise relationship between media consumption and maladaptive daydreaming. In particular, it addresses the following research questions: First, what is the role of media consumption as a trigger of maladaptive daydreaming? For example, which form of media triggers daydreaming in this population the most? Secondly, how do maladaptive daydreaming and media consumption operate in tandem with each other? For example, what is the relationship between likeliness of listening to music during daydreaming and maladaptive daydreaming? Thirdly, how do maladaptive daydreaming relate to Internet use?

To answer these questions this thesis is organized as follows: Chapter 2 will conceptualize the research question based on existing research. This literature draws upon a number of fields, including psychology, psychoanalysis, cultural studies, neuroscience, communication studies, and mass media. The literature review identifies hypotheses and provides a basis for the survey questions laid out in Chapter 3. Chapter 3 describes the survey methodology used to capture the data related to the research questions. A description and rationale for the survey design that is used in the thesis will be provided. Chapter 4 will lay out the results of the analysis of the data, and identify correlations between the measures that were previously identified in Chapter 3. Chapter 5 discusses the findings, and the future research questions that they elicit.
CHAPTER TWO: LITERATURE REVIEW

Introduction

In order to address the question of “what is the precise relationship between media consumption and maladaptive daydreaming?” this chapter provides a literature review of the existing research related to the question. To better define daydreaming, it differentiates daydreaming from mind-wandering in terms of two different dimensions of thought. The first is mental agency, and the second narrative structure (Dorsch 2014). Next the chapter clarifies maladaptive daydreaming as distinct from everyday daydreaming. Having provided a working definition of maladaptive daydreaming, the chapter then conceptualizes the relationship between maladaptive daydreaming and media consumption. To this end, it lays out the current architecture of media and how it relates to the formation of addictive behavioral patterns. The chapter serves to refine the research question posed by this thesis, hypothesize about the findings and thereby provide a basis for the survey questions posed in chapter three.

Differentiating Daydreaming from Mind-Wandering

While academics have not agreed upon a way of conceptualizing daydreaming (Klinger 2009), the body of literature provides a general understanding. Based on this literature, daydreaming can be conceived of as thought that is not related to the external environment. (Klinger 2009; Singer 2014) For example, Klinger defines daydreaming as “nonworking thought that is either spontaneous or fanciful” (Klinger 2009, 225). Similarly, Singer defines
daydreaming as “a shift of attention away from some primary physical or mental task we have set for ourselves, or away from directly looking at or listening to something in the external environment, toward and unfolding sequence of private responses made to some internal stimulus” (Singer 2014, 3).

However, this perspective on daydreaming is very general. It can be employed to understand a wide range of mental processes. Considering that it utilizes the measure of being withdrawn from surroundings as the sole characterization of daydreaming, it does not differentiate daydreaming from other task-unrelated thoughts. Hence, academics have used the terms to apply to “daydreaming,” “fantasy,” and “mind-wandering” interchangeably (Butler 2006; Singer 2014; Bigelsen and Schupak 2011; Kucyi and Davis 2014; Axelrod et al. 2015).

In order to address this linguistic confusion and the lack of analytical precision with respect to the concept of daydreaming, task-unrelated thought will be dimensionalized here. Based on an interdisciplinary review of the literature from the fields of cognitive science, philosophy, and psychology, we can differentiate task-unrelated thought on two levels: narrative structure, and mental agency. These two dimensions of task-unrelated thought constitute our descriptive language and analytical perspective.

Daydreams are characterized by their narrative structure (Dorsch 2014; Bigelsen and Schupak 2011; Ehn and Löfgren 2010). Aimed at forming a narration, elements of daydreams come together to structure narrative elements such as plots, scenarios, or contexts (Bigelsen and Schupak 2011). Therefore, the train of thought during daydreaming has a thematic continuity; sequential thoughts are related as they form the narration (Dorsch 2014). Instances of daydreaming might be, for example, “taking revenge on a superior officer,” (Ehn and Löfgren
or focusing on “what will people think of me when I am gone?” (Ehn and Löfgren 2010, 42) They illustrate some themes that motivate narration during daydreams. For instance, daydreaming about taking revenge on an ex-boyfriend might constitute a scenario in which one imagines oneself with an imaginary boyfriend, being happy and in love, while an ex-boyfriend witnesses you with your new partner and is jealous and regretful that he is not with you anymore.

The narrative structure of daydreams necessitates a mental agency (Dorsch 2014). This is characterized by directionality of thought. For example, in the above-mentioned scenario about taking revenge on an ex-boyfriend, all of the constituents of thought, from the characters to the plot, are constructed with the motivation of enacting the revenge theme. In this process, the mental agency functions to achieve a unified stream of thought, and “initiate and sustain purposive doings…guide them until their completion or interruption…” (Dorsch 2014). In other words, the stream of thought occurs “for an end” (Dorsch 2014).

In contrast to daydreaming, thought in mind-wandering does not form a narration (Dorsch 2014). Dorsch provides a good instance of mind-wandering: “From recalling some of the things we did in our last holidays, we may switch to visualizing how it would be like to sit at the beach, before thinking about our friend who is in Paris right now…” (Dorsch 2014). As in this instance, the continuity in the train of thought is not sustained by a narrative framework, but rather guided by associations: recalling a holiday leads to a thought related to holidays, leading to “frequently changing subject matters” (Dorsch 2014). Dorsch describes these guiding associations as passive mechanisms (2014), in which there is a free-flow of thoughts rather than an imaginative mental agency in control. Therefore, the trains of thought “do not constitute unified and self-contained segments of the stream of consciousness” (Dorsch 2014).
fMRI studies further confirm the distinction between daydreaming and mind-wandering. These studies suggest mind-wandering is associated with the regions of the brain “that are active when the brain is at rest” (Mason et al. 2007). The neural activity during mind-wandering occurs in cortical regions, which form the default network. In this way, mind-wandering constitutes a “psychological baseline” (Mason et al. 2007) for the brain activity. On the other hand, according to an unpublished fMRI scan of a person daydreaming (Bigelsen and Schupak 2011), the neural activity in the brain partially overlapped with the default-mode network. Considering that neural activity didn’t fully take place in the default-mode network, this finding differentiates the neural processes taking place during daydreaming from mind-wandering: the researcher’s preliminary analysis suggests that “there appear to be qualitative differences relating to the effortful construction of rewarding imaginative experiences” (Bigelsen and Schupak 2011).

Another fMRI analysis of mind-wandering is in line with an understanding of mind-wandering as a train of thought without mental agency. The findings suggest that activities in the “default network region” and the “executive network region” were emphasized when “the subjects were unaware of their mind-wandering” (Christoff et al. 2009, 8719). The absence of awareness suggests that there is lack of conscious cognitive effort and therefore a lack of mental agency. In such instances, the train of thought is best characterized as mind-wandering. These findings are in line with Klinger’s characterization of mind-wandering, in which mind-wandering is a “mental default” (Klinger 2009).

One behavioral aspect of engaging in such task-unrelated thought that varies across a life span is the frequency of daydreaming: Analyzing engagement in such task-unrelated thoughts across a life time has revealed that the frequency of task-unrelated thought is a function of age.

**Abnormal Daydreaming Patterns and Pathology**

In the psychology discipline, daydreaming is categorized as *nonpathological dissociations*. As in the cases of dreaming and absorption, daydreaming is a form of dissociation, in which a person is in a “temporary alteration or separation of what are normally experienced as integrated mental processes” (Butler 2006, 45). While a person retreats into an internal world and temporarily dissociates from the immediate environment during daydreaming, this particular form of dissociation is not pathological (Butler 2006; Klinger et al. 2009). Daydreaming merely constitutes a “state of consciousness… that does not occur as part of a psychiatric disorder” (Butler 2006, 45).

Not only is daydreaming non-pathological; it is also functional. Clinical psychology in particular stipulates that daydreams facilitate thought processing, enabling individuals to “…anticipate, rehearse, create and plan; revisit what they have done and said…” (Butler 2006 54). Daydreaming also helps people deal with unresolved emotions (Andrews et al. 1993). Furthermore, individuals who daydream more frequently were found to be “more creative storytellers” (Singer 1979, 53).

There are, however, two daydreaming patterns that have been identified as problematic. These relate to daydreaming frequency and content. Firstly, daydreaming is found to be
pathological and referred to as “autistic fantasy” in cases where people daydream excessively instead of dealing with problems, taking action, or engaging in social interaction (American Psychiatric Association, 1994). In the Diagnostic and Statistical Manual for Mental Disorders-4, a widely-accepted reference guide for understanding mental disorders, autistic fantasy is categorized as an immature defense style, in which “the individual deals with emotional conflict or internal or external stressors by excessive daydreaming as a substitute for human relationships, more effective action, or problem solving” (American Psychiatric Association, 1994, 755). Accordingly, the concept of “autistic fantasy” dimensionalizes daydreaming behavior not only in regard to the amount of time spent daydreaming, but also with respect to its psychoanalytic function.

Secondly, the term “maladaptive daydreaming” is used to refer to excessive daydreaming as well as the consequent stress arising from this behavior. The term maladaptive daydreaming can be distinguished from autistic fantasy by virtue of its focus on stress (Bigelsen and Schupak 2010), rather than on the psychoanalytic implications of excessively daydreaming. Maladaptive daydreaming is defined as “extensive fantasy activity that replaces human interaction and/or interferes with academic, interpersonal, or vocational functioning” (Somer 2002, 197). It is neither the act of daydreaming itself nor the content of daydreams, but rather the habitual dimension of excessive daydreaming and the consequent stress that renders it maladaptive. Findings of a study from 2011 indicate that the stress of maladaptive daydreamers arises from “difficulty in controlling the need or desire to engage in fantasizing; concern that the quantity of fantasizing interfered with actual relationships and endeavors; and intense shame and exhaustive efforts to keep this behavior hidden from others” (Bigelsen and Schupak 2010).
“Fantasy-prone person” is another construct to define people who daydream excessively and have a tendency for hypnotic susceptibility (Wilson and Barber 1982). This construct, however, does not problematize daydreaming behavior, or address any stress resulting from it. While Lynn and Rhue (1988) associated fantasy-proneness with mental disability, Klinger et al. (2009) suggests that the association of fantasy-proneness with psychopathology is a consequence of an overlap between some measures of the “Inventory of Childhood Memories and Imaginings” (ICMI), the inventory that Wilson and Barber (1982) created for assessing fantasy-proneness, with measures about psychopathology.

**Maladaptive Daydreaming and Media Consumption**

Previous studies have established a link between media consumption and daydreaming. McIlwraith and Schallow (1983) studied the relationship between daydreaming content and consumed media content. They have found that consuming “highly-arousing media” correlated with “obsessional-emotional fantasy lives.” The concept of obsessional-emotional fantasy, however, does not refer to pathology or daydreaming frequency, but it is used rather to assess daydreaming content such as “rumination about guilt over past actions, frightening images of failure, compensatory fantasies or unattainable success, and fantasies of hostile acts toward others.” Secondly, they found a relationship between daydreaming around a masculine male theme and “exposure to sports in all media and tendency to read magazines devoted to sex and violence” (McIlwraith and Schallow 1983, 87).

There is an association between the behavioral aspects of maladaptive daydreaming and media consumption. This association, however, is not related to daydreaming content and media
content; rather it is associated with media’s role in initiating maladaptive daydreaming and sustaining this behavior (Bigelsen and Schupak 2011). Firstly, media consumption is a trigger for maladaptive daydreaming. According to Bigelsen and Schupak’s research (2011), 73% of the respondents reported media as their common trigger. In this research, open-ended survey questions revealed that various types of media exposure, whether in the form of “music, television, books, and other media,” triggered maladaptive daydreaming (Bigelsen and Schupak 2011, 1642).

Understanding how being triggered by media relates to the maladaptive daydreaming experience can provide insight about whether being triggered by media is a particular characteristic trait of people that increases the likeliness of a person experiencing maladaptive daydreaming. Furthermore, differentiating media forms in regard to their trigger effect for daydreaming can further provide data to dimensionalize various media’s triggering effect in regard to the auditory and visual experience they provide.

A second dimension of the relationship between media and maladaptive daydreaming relates, in particular, to music consumption: that is, listening to music occurs in tandem with maladaptive daydreaming. (Bigelsen and Schupak 2011) While listening to music while daydreaming was reported in the accounts of daydreamers (Regis 2013), Bigelsen and Schupak’s study (2011) revealed that this behavior was common among the maladaptive daydreaming population. “Pacing while listening to music” (Bigelsen and Schupak 2011, 1640) was the most commonly reported activity that accompanied maladaptive daydreaming.

In addition, research of Bigelsen and Schupak (2011) reveal that in many cases, maladaptive daydreaming is a mental activity that occurs along with a physical activity: 79% of
maladaptive daydreamers reported engaging in a “ritualized kinesthetic activity” (Bigelsen and Schupak 2011, 1640) as they are daydreaming. While pacing was most commonly reported activity, “rocking, running, swinging and spinning” (Bigelsen and Schupak 2011, 1640) were some other reported kinesthetic activities.

“Absorption” and “hypnotizability” are psychological constructs that overlap with the concept of daydreaming (Hoyt et al. 1989; Roche and McConkey 1990). Absorption is defined as a “general disposition to enter, or a capacity for entering, experiential state characterized by marked cognitive restructuring … [which] can have a dissociative or holistic character…” (Roche and McConkey 1990) Rather than defining a particular mood or mental state as absorption, Herbert (2013) defines absorption as a “trait,” and Roche and McConkey’s (1990) analysis suggests that this trait provides basis for dissociative experiences. Butler (2006) conceptualizes daydreaming as a form of absorption as well. Hypnotizability relate to the concept of daydreaming also, considering that highly-hypnotizable people experience deep immersion as they “experienced imagined events” (Roche and McConkey 1990).

Considering the theoretical and conceptual relations among the constructs of “absorption” and “hypnotizability,” and “daydreaming” (Hoyt et al. 1989; Roche and McConkey 1990), literature regarding the relationship between these constructs and music use can be employed to provide insight about maladaptive daydreamers’ music use patterns. Studies regarding absorption and hypnotizability suggest a relationship between music consumption and daydreaming (Rhodes et al. 1988; Herbert 2013; Snodgrass and Lynn 1989). Those people who were highly-hypnotizable were also found to be in an absorbed state more during listening to music (Snodgrass and Lynn 1989). Furthermore, another study suggests that people who are more
likely to enjoy music were also more likely to engage in absorption (Rhodes et al. 1988). While interpreting her findings, Herbert (2014) suggests that the multi-dimensional aspects of music experience may be rendering music as a facilitator to absorption: “Music can be a particularly effective agent in the facilitation of absorption because it affords multiple potential entry points to involvement (acoustic attributes, source specification, entertainment, emotion, fusion of modalities)…” (Herbert 2014)

While these studies suggest a relationship between absorption and music use, there is no existing research on the behavioral effects of daydreaming and media use at the same time that can provide insight about the mechanisms that take place during this process, and how they affect behavior. In particular, what is lacking is an understanding of the relationship between music use and dissociative experiences. Can they be understood in terms of maladaptive daydreaming behavior? The answer to this question can provide insight with respect to Herbert’s theory about music being a facilitator for absorption.

The urge to daydream is characterized as addictive by people who self-identify as maladaptive daydreamers. In a survey conducted by Bigelsen and Schupak, (2011) while responding to the open-ended questions, 25% of the sample population directly defined the behavior as addictive, compulsive, or obsessive. Other accounts of maladaptive daydreamers revealed problems coping with the urge to daydream: 79% of the respondents reported unsuccessful attempts to control their daydreaming habits (Bigelsen and Schupak 2011). Along with the overwhelming 79% of the population that report struggles overcoming the urge to daydream, an additional 7% of the respondents made “analogies to addiction” as they were reflecting on their attempts to control their daydreaming habit, further emphasizing the addictive
nature of maladaptive daydreaming. Respondents reported physical or psychological discomfort as they suppressed their urges to daydream, describing feelings of “irritation, anxiety, and even illness” (Bigelsen and Schupak 2011, 1644).

An explanation of the addictive nature of maladaptive daydreaming relates the effect of rewarding imaginary experiences on the neurotransmitter system of the brain (Bigelsen and Schupak, 2011). Grant et al. point out similarities between behavioral and substance addictions in regard to the “neurobiological mechanisms” (Grant et al. 2010). As in the case of substance addictions, particular behavioral patterns also have the potential of affecting the brain structure through rewards, and thereby leading to addiction. Pathological gambling (Wareham and Potenza, 2010; Blaszczynski and Nower 2002), and compulsive buying (Lejoyeux and Weinsten 2010) are some other examples of behaviors that generate addiction due to rewards.

**Maladaptive Daydreaming and the Current Media Structure**

The neural processes that lead to behavioral addictions, as in the case of maladaptive daydreaming, operate during media consumption as well. Facebook addiction is described as an “urge-driven disorder” (Karaiskos et al. 2010; Andreassen et al. 2012), in which checking Facebook becomes a behavioral problem. Another case occurs where mobile phone usage becomes problematic by leading to a “checking-habit.” Checking-habits are now recognized as cases in which users engage in “brief, repetitive inspection of dynamic content quickly accessible on the device” (Oulasvirta et al. 2011).

An understanding of the current structure of the Web informs these addictive media consumption patterns: referred to as “Web 2.0,” (O’Reilly 2005) the structure of the online
network has significantly altered the media consumption process. Firstly, Web 2.0 is designed in a way that it can remix and provide input from various resources simultaneously. This structure allows the content to be continually generated and provided (O’Reilly 2005). Secondly, online network is ubiquitous as it spans “all connected devices” (O’Reilly 2005). Hence, the content generated online is accessible through multiple mediums. These two dimensions of Web 2.0 allow online content to be presented to users continuously updated and instantly accessible (O’Reilly 2005), and consequently allows online content to provide “informational value or rewards” (Oulasvirta et al. 2012). Hence, online content has the potential to affect the reward structure of the brain in this current online network architecture (Oulasvirta et al. 2012).

The following hypothesis will be tested to gain insight about whether being triggered by media is a particular character trait that relates to experiencing maladaptive daydreaming severely: (1) The ones who are triggered by media consumption more are likely to be more severely maladaptive daydreaming. Similarly, to understand whether being triggered by media is a trait that explains the decrease in daydreaming frequency, the following hypothesis will be tested: (2) Among the maladaptive daydreaming population, being triggered by media decreases with age. In order to gain insight about the mechanism that takes place during daydreaming and listening to music at the same time, the following hypothesis is constructed: (3) Among the maladaptive daydreaming population, those who listen to music more during daydreaming are also more likely to daydream for longer hours. Finally, building on the similar neural process that take place during formation of addictive daydreaming patterns and addictive media use patterns, the following hypothesis will be tested: (4) Among the maladaptive daydreaming
population, the people who daydream more frequently are also likely to surf on the Internet more frequently.

Our conceptualization of maladaptive daydreaming as a behavioral addiction, as well as an understanding of the interactive nature of Web 2.0 provide theoretical grounding allowing us to construct measures that help us analyze daydreaming and media consumption in Chapter 3. In order to understand the role of media in the formation of behavioral addictions, as in the case of maladaptive daydreaming, it is necessary to take the interactive characteristics of new media into consideration. In order to understand maladaptive daydreaming in this context, a survey is designed that assesses media consumption and maladaptive daydreaming behavior. The following chapter describes in detail the methodology used for the purposes of this research.
CHAPTER THREE: METHODOLOGY

Introduction

This chapter discusses the methodology employed to understand the relationship between media consumption and maladaptive daydreaming based on the conceptualization in Chapter 2. A basic aim of this survey is to gain data about daydreaming patterns, styles, and frequencies of maladaptive daydreamers as well as to learn about their media consumption patterns in regard to their daydreaming behavior. Quantitative analysis is employed to analyze these patterns. The online data collection procedure, and the survey design are described. Afterwards, any particular biases this survey design introduces are addressed. Lastly, there will be a discussion on how measures are constructed to assess variables relevant to the research purposes.

Data Collection Procedure

Considering that there are no offline mediums to our knowledge where maladaptive daydreamers gather, the data is gathered through online mediums. Online Facebook groups, Yahoo groups, and a forum where these people gather for online support constitute the online mediums where data can be collected. Hence, we chose our sampling frame from people in online Facebook groups about maladaptive daydreaming, and the “Wild Minds Network,” which is an online forum for discussion on maladaptive daydreaming. This method of collecting responses is a non-probability sampling technique, in which from the target population, we reached out to those who are easily accessible. Hence, our sample is a “convenience sample.” In Bigelsen and Schupak’s study (2011), which constitutes the only research done on this
population, this particular method of collecting data through online groups was employed as well.

I posted information about a confidential study about maladaptive daydreaming to the Wild Minds Network, as well as to three Facebook groups, namely “Maladaptive Daydreamers,” “Maladaptive daydreaming,” and “Maladaptive Daydreaming Disorder Support.” A survey was administered through “Survey Monkey,” an online survey platform, between March 3, 2015 and March 15, 2015. It took approximately 15 minutes for respondents to complete the survey. The respondents provided their voluntary consent to participate in the study. Georgetown University Institutional Review Board approved the research.9

The respondents consisted of people who self-identify themselves as maladaptive daydreamers. Considering the limited discussion in the academic community about the condition of maladaptive daydreaming, there is no working definition or any assessment methods to identify maladaptive daydreamers. Therefore, the only available method is to rely on self-reports of maladaptive daydreaming.

This method of collecting data yielded 128 responses. Our sample population is culturally diverse: 49% of the responses are from the United States, 6% from India, 7% from UK, as well as participants stemming from Croatia to New Zealand. 72% of the respondents were female, 22% male, while 6 respondents preferred not to provide information, 1 respondent didn’t classify in the gender binary. Respondents’ age ranged from 18 to 66, with a mean age of 28 and a standard deviation of 10. 75% of the respondents had some university education or more. The demographics of the respondents are summarized in Table 1:

9 The approved IRB number for this research is: 2015-0107
<table>
<thead>
<tr>
<th>Demographic data</th>
<th>N Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24</td>
<td>22%</td>
</tr>
<tr>
<td>Female</td>
<td>79</td>
<td>72%</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high-school education</td>
<td>14</td>
<td>13%</td>
</tr>
<tr>
<td>High-school diploma</td>
<td>13</td>
<td>12%</td>
</tr>
<tr>
<td>Some university education</td>
<td>33</td>
<td>31%</td>
</tr>
<tr>
<td>University graduate</td>
<td>28</td>
<td>27%</td>
</tr>
<tr>
<td>Some post-graduate education</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Post-graduate degree</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Employed</td>
<td>31</td>
<td>28%</td>
</tr>
<tr>
<td>Looking for work</td>
<td>10</td>
<td>9%</td>
</tr>
<tr>
<td>Not working</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Retired</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Student</td>
<td>53</td>
<td>48%</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>7</td>
<td>12%</td>
</tr>
</tbody>
</table>

Table 1: Demographic Characteristics of the Sample Population

Survey Design

An online survey is an appropriate method for analyzing maladaptive daydreaming, considering that the condition may not be perceived socially desirable for some respondents (Pew Research Center, 2014). In situations where surveys are about a non-socially desirable condition, respondents may be less likely to openly discuss their behavior as they are interacting with an interviewer. This condition might lead to a social desirability bias through under-reporting of non-socially desirable habits (Edwards 1957). Conducting an online survey also enabled me to design an interactive survey, in which particular questions were asked conditional on other questions.
However, such online surveys can have downsides as well. Firstly, the sample design involves only those with an Internet connection, therefore people who are less likely to have an Internet connection will be underrepresented: Considering that Internet access is a prerequisite for engaging in some of the media use measures we have introduced, namely “watching videos online,” “browsing social media,” and “surfing the Internet,” our sample will include only those maladaptive daydreamers who have access to these media resources. Furthermore, access to Internet provides resources for engaging in other forms of media use, mainly “hearing music,” “listening to music,” and “reading.” Hence, targeting only those with an Internet access enables us to have a sample population with a wider access to a range of media resources, and consequently may reflect on our data as higher media use patterns than the overall maladaptive daydreaming population.

Involving only those with an Internet access in our sample group also leads to over-representation of people with particular demographic characteristics: according to a study, people with lower incomes are less likely to have an Internet access (Pew Research Center). Underrepresentation of people with lower incomes may introduce bias to our data in terms of the media use, considering the relationship between media use and income level (Jansen 2010; Lenhart et al. 2010). According to a study conducted in the United States, young people from “lower income families are less likely to own a mobile phone” (Lenhart et al. 2010, 9). Furthermore, according to research (Jansen, 2010), people with a higher income are more likely to access news online. These findings are not only suggestives of a sample population that is more likely to engage in media consumption, but they also suggest that the sample population
might vary from the overall maladaptive daydreaming population in regard to the form of media that is used.

Targeting only people with an Internet access may also cause an underrepresentation of people with less education (Pew Research Center). Over-representing people with a higher education level can lead to bias in our data, given the relationships between education levels and media use. According to one research, “mp3 ownership is positively correlated with educational attainment” (Lenhart et al. 2010, 24). This relationship also suggests that because they own more devices that enable media use, our sample population might be more likely to engage in media use than the overall maladaptive daydreaming population.

A preliminary look at our descriptive statistics reveals that students, which constitute 48% of the sample population, are overrepresented in our sample population. Overrepresentation of students suggests an overrepresentation of young people and young adults. Considering the relationships between age and media use, over-representing young people may lead to bias. According to one study, “young adults & young teens are more likely to have an mp3 player than other adults” (Lenhart et al. 2010, 24). Another finding that emphasizes more media use among young people relates to digital video consumption: people between 18-24 years old, for example, are the “heaviest consumers of digital video” (Pew Research Center). Hence, over-representing young people may lead to a respondent group that consumes more media than the overall maladaptive daydreaming population.

The descriptive statistics further reveal that females are overrepresented in our sample population: 72% of our respondents are females. According to a study, gender is a factor that relates to why people use social media: “females are more likely to use social media for
relational purposes” (Barker 2009). While there are some gender related differences in the motives of using media, our analysis do not focus on these media use dynamics.

Also, considering that the sampling frame consists of people in online health groups, the respondents may systematically differ from the overall maladaptive daydreaming population in regard to their online health seeking behavior. According to a study that compared the characteristics of online health seekers versus offline health seekers, online health seekers were found to be more educated, younger, and have higher incomes (Cotten and Gupta 2004). Furthermore, the people in the online support groups may be suffering more from this condition, or daydreaming for a longer time in contrast to the overall daydreaming population, and consequently actively looking for help through online mediums.

Another dynamic that may introduce bias to our sampling frame is the respondents’ motivation for filling out the survey. Suffering more from maladaptive daydreaming may have led the respondents to take the survey and contribute to the academic research about this condition, hence leading to a biased sample where the maladaptive daydreamers who suffer more are overrepresented. Consequently, the scale that assesses the severity of maladaptive daydreaming may be higher than the overall maladaptive daydreaming population.

Lastly, the respondents’ awareness of their condition may also stem from a factor that differentiates them from the overall maladaptive daydreaming population. Self-identifying oneself as a maladaptive daydreamer requires observing particular patterns in one’s own daydreaming behavior, and reflecting on the rewarding mental activities. Hence, our sample may consist of maladaptive daydreamers who have been daydreaming relatively longer than the overall maladaptive daydreaming population so as to be able to reflect on their maladaptive
daydreaming behavior. Consequently, our sample may over-represent maladaptive daydreamers who have been daydreaming longer.

**Survey Questions**

In order to address our research question, questions are designed to gain data about maladaptive daydreaming behavior and media use. Because quantitative analysis is employed for this research, responses to the survey questions were taken by scales or multiple choice. For questions that were to be answered on a rating scale, a Likert scale was used, in which 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Very Often were possible options.

Considering that our research question relates to the behavioral dimensions of maladaptive daydreaming, the questions related to daydreaming did not ask about the content of daydreams. Instead, the following measure was constructed to get data about daydreaming frequency of maladaptive daydreamers: “In a typical day, for how many hours do you daydream?” The survey data revealed that on average, a maladaptive daydreamer spends 4.82 hours daydreaming, with a standard deviation of 2.94. The number of hours that the respondents daydreamed ranged from 1 hour to 12 hours.

The respondents were also asked to state for how long they have been maladaptively daydreaming through the following question: “For how long would you say you have been maladaptively daydreaming?” The respondents were prompted to choose one of the following options: “Less than 1 year,” “1-3 years,” “4-6 years,” “6-9 years,” “10 years or more.” 78% people stated that they been maladaptively daydreaming for 10 years or more.
Table 2: Categorical Data about the Number of Years Spent Maladaptively Daydreaming

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>2</td>
</tr>
<tr>
<td>1-3 years</td>
<td>3</td>
</tr>
<tr>
<td>4-6 years</td>
<td>6</td>
</tr>
<tr>
<td>6-9 years</td>
<td>11</td>
</tr>
<tr>
<td>10 years or more</td>
<td>88</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
</tr>
</tbody>
</table>

In order to better understand the process that leads one to identify as a maladaptive daydreamer, the respondents were asked about the very first time they were exposed to the condition: “How did you first hear about maladaptive daydreaming?” The respondents were prompted to choose one of the following options: “Offline,” “I searched my behavior online,” “I encountered information about it offline.” According to our survey data, 75% of the respondents mentioned that they first learned about their condition by proactively searching their daydreaming behavior.

Survey questions relating to media consumption were constructed to understand media use behaviors of maladaptive daydreamers on three levels: (1) Media consumption as a trigger of maladaptive daydreaming (2) Media consumption as an accompanying behavior to maladaptive daydreaming (3) General media consumption behaviors regardless of maladaptive daydreaming.

This question aims to measure whether a particular form of media triggers one’s daydreams or not. To understand which types of media consumption trigger daydreaming, the respondents were asked: Some people who identify themselves as maladaptive daydreamers mention that media triggers daydreaming. Which of the following tends to cause your
daydreams? Please select all that apply. The respondents were prompted to choose the forms of media that trigger their daydreams, therefore these variables constitute categorical variables.

While I determined the answer choices for this question, I took into consideration the medium through which media is consumed. Therefore, along with the traditional categories used to delineate media use such as “listening to music,” “hearing music,” “watching television,” “reading,” “browsing social media,” the following measures that involve the medium through which media was accessed were also added: “watching videos online,” and “surfing the Internet.” With a percentage of 90%, listening to music was the most common trigger of maladaptive daydreaming (See Table 3).

<table>
<thead>
<tr>
<th>Triggers of Daydreams</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening to music</td>
<td>90%</td>
</tr>
<tr>
<td>Hearing music</td>
<td>61%</td>
</tr>
<tr>
<td>Watching television</td>
<td>67%</td>
</tr>
<tr>
<td>Reading</td>
<td>65%</td>
</tr>
<tr>
<td>Browsing social media</td>
<td>33%</td>
</tr>
<tr>
<td>Watching videos online</td>
<td>51%</td>
</tr>
<tr>
<td>Surfing the Internet</td>
<td>39%</td>
</tr>
</tbody>
</table>

Table 3: Triggers of Daydreams

A trigger scale is constructed from the 7 forms of media consumption mentioned above. This scale constitutes of the number of forms of media that one is triggered from. This scale does not measure the extent to which media triggers daydreams, but is rather a descriptive of the number of media forms that trigger daydreams. On average, 5.8 forms of media consumption
trigger a maladaptive daydreamer. The standard deviation is 2.9. With a Chronbach’s alpha of 0.735, the scale is reliable.

Another question aims to gain data about the second dimension of media consumption: media consumption as an accompanying behavior to maladaptive daydreaming. Through the following question, the respondents were prompted to state on a Likert scale whether they daydreamed as they were consuming media in the above-mentioned forms: Some people who identify themselves as maladaptive daydreamers stated that they daydream while consuming some kind of media. As you are daydreaming, are you doing any of these? Please select all that apply. The following options were provided as possible forms of media consumption that accompany maladaptive daydreaming: “Listening to music,” “Watching television,” “Watching videos online,” “Reading,” “Browsing social media,” “Surfing the Internet.”

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening to music</td>
<td>4</td>
<td>20</td>
<td>3</td>
<td>13</td>
<td>69</td>
</tr>
<tr>
<td>Percentage</td>
<td>3.7</td>
<td>18.3</td>
<td>2.8</td>
<td>11.9</td>
<td>63.3</td>
</tr>
<tr>
<td>Watching television</td>
<td>15</td>
<td>24</td>
<td>22</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Percentage</td>
<td>14.9</td>
<td>23.8</td>
<td>21.8</td>
<td>27.7</td>
<td>11.9</td>
</tr>
<tr>
<td>Watching videos online</td>
<td>17</td>
<td>17</td>
<td>21</td>
<td>33</td>
<td>13</td>
</tr>
<tr>
<td>Percentage</td>
<td>16.8</td>
<td>16.8</td>
<td>20.8</td>
<td>32.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Reading</td>
<td>12</td>
<td>29</td>
<td>18</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>Percentage</td>
<td>11.9</td>
<td>28.7</td>
<td>17.8</td>
<td>26.7</td>
<td>14.9</td>
</tr>
<tr>
<td>Browsing social media</td>
<td>32</td>
<td>6</td>
<td>27</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Percentage</td>
<td>32.3</td>
<td>6.1</td>
<td>27.3</td>
<td>25.3</td>
<td>9.1</td>
</tr>
<tr>
<td>Surfing the Internet</td>
<td>19</td>
<td>15</td>
<td>22</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td>Percentage</td>
<td>19.4</td>
<td>15.3</td>
<td>22.4</td>
<td>30.6</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Table 4: Media Consumption as an Accompaniment of Daydreaming

The third and final dimension of media consumption patterns analysis relates to media use regardless of maladaptive daydreaming. In order to understand the media use patterns,
questions, such as the following were asked: “In a typical day, how many hours do you spend surfing the Internet?” The respondents were prompted to enter a numeric value. On average, 3.95 hours was spent on the Internet, with a standard deviation of 3.36.

In order to assess the severity of the maladaptive daydreaming condition, we adapted the “Diagnostic and Statistical Manual of Mental Disorders 5”’s (American Psychiatric Association 2013) 11 criteria for “Substance Use Disorders” to the condition of maladaptive daydreaming. This method of employing criteria for assessing substance-use to behavioral conditions was employed by the authoring organization of the manual, the American Psychiatric Association as well, as in the case of “gambling disorder” (American Psychiatric Association 2013). Gambling disorder is conceptualized as a behavioral addiction, and currently constitutes the only category of behavioral addictions in the Diagnostic and Statistical Manual for Mental Disorders 5 (American Psychiatric Association 2013).

The criteria introduced in this version of the Diagnostic and Statistical Manual for Mental Disorders 5 categorizes problems about substance-use in four levels: impaired control, social impairment, risky use, and pharmacological criteria (American Psychiatric Association 2013). The criteria that related to maladaptive daydreaming conditions were modified, whereas criteria that didn’t fit the maladaptive daydreaming experience were not. One example of a criterion that is not useful for describing maladaptive daydreaming is Criterion 3: “a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects” (American Psychiatric Association 2013). This criterion, for example, is specific for using a substance, and can’t be used to understand maladaptive daydreaming.
The first criterion that is adapted to maladaptive daydreaming is Criterion 2 to assess substance-use disorders, which is categorized as an assessment of “impaired control:” “unsuccessful efforts to cut down or control use of the substance” (American Psychiatric Association 2013). This criterion was adapted to maladaptive daydreaming with the following wording: *I have attempted to spend less time daydreaming, but I am unable to.*

The second criterion aims to assess how maladaptive daydreaming affects one’s functioning. Criterion 7, under the category of “social impairment” is altered to construct the second assessment criteria: “Important social, occupational, or recreational activities are given up or reduced because of use of the substance” (American Psychiatric Association 2013). This criterion is adapted to maladaptive daydreaming in the following manner: *I have given up some of my social time so I can spend more time daydreaming.*

The third criterion also relates to the social impairment effects of substance-use disorders. Criterion 5 assesses the severity of a substance use disorder in regard to continued use despite negative consequences: “recurrent use of the substance resulting in a failure to fulfill major role obligations at work, school, or home” (American Psychiatric Association 2013). This criterion was employed as a third measure to assess maladaptive daydreaming with the following wording in the survey: *My productivity decreased as a direct result of time I spend daydreaming.*

Finally, the fourth criterion was constructed to assess the level of stress that happens where one person is not able to daydream. Categorized under the “pharmacological criteria,” (American Psychiatric Association, 2013) withdrawal symptoms were introduced as a criterion to assess substance-use disorders. The following criterion is constructed for assessing withdrawal
for maladaptive daydreamers: “I feel anxious if I feel the urge to daydream, but I am in a situation where I can’t.”

The respondents are prompted to rate whether they can relate to the 4 measures discussed, from 1 to 10. Consequently, these 4 measures defined above generated a scale that assesses the severity of the maladaptive daydreaming condition. The internal consistency of the maladaptive daydreaming severity was not very reliable, with a Cronbach’s alpha of 0.58. The mean is 7.23, and the standard deviation is 1.75.

Lastly, a question was directed to determine whether the respondents were mistakenly considering themselves to be maladaptive daydreamers while suffering from dissociative problems. Considering that there is no technique to diagnose a person with maladaptive daydreaming, there may be people in our sample group who mistakenly consider themselves to be maladaptive daydreamers. For example, people who just enjoy daydreaming with no pathological consequences or people who suffer from dissociative problems might mistakenly characterize themselves as maladaptive daydreamers. As discussed in Chapter 2, it is not the nature of dissociation that occurs during maladaptive daydreaming that is pathological, but it is rather the habitual dimension of the behavior: it is the compulsive urge to daydream that renders this condition pathological (Bigelsen and Schupak 2011). Confusing reality with daydreams, on the other hand, does not occur during the case of maladaptive daydreaming, and may be indicative of other mental disorders. Therefore, we asked whether participants confuse their daydreams with reality. Among 128 respondents, 18 stated that they confuse their daydreams with reality, and therefore were excluded from the analysis.
To sum up, measures are constructed to understand the behavioral patterns in regard to daydreaming and media use. Chapter 4 describes the quantitative analysis employed to understand the relations between the measures described above.
CHAPTER FOUR: ANALYSIS

Introduction

This chapter employs the methodology described in Chapter 3 to understand how daydreaming and media use correlates. For this purpose, a statistical analysis is conducted among the demographic variables, variables about behavioral patterns and the maladaptive daydreaming assessment scale. Survey data gathered from 128 respondents who self-identified as maladaptive daydreamers were analyzed, and statistically significant relationships with media use and maladaptive daydreaming were found.

Characterizing Sample Population

In this part, descriptive statistics are used to characterize our sample population. From these descriptive statistics, we assess whether particular expected biases were introduced. Given the biases that self-identifying as a maladaptive daydreamer might introduce, the first descriptive statistics mentioned here relates to the process of identifying oneself as a maladaptive daydreamer. According to our data, 75% of maladaptive daydreamers searched their behavior online. This statistic suggest that as opposed to being exposed to the concept of maladaptively daydreaming through offline mediums or running into information online, and consequently associating the condition with one’s self; instead a majority of the maladaptive daydreamers observed particular patterns in their behavior that related to maladaptive daydreaming. Considering that it is uncommon to reflect on one’s daydreaming behavior among the general population; observe particular recurring patterns; and consequently search behavioral patterns
online, this descriptive statistic suggests that our sample population primarily consists of people who have been daydreaming long enough to be able to reflect on their daydreaming behavior.

As one might expect from the statistic about online search behavior, 80% of the respondents mentioned that they have been daydreaming for “10 years or more.” This statistic reveals that people who have been maladaptively daydreaming for a longer time are overrepresented in our sample population.

**Statistical Analysis**

Statistical analyses were conducted to examine the relationship between maladaptive daydreaming and media consumption patterns. The analysis focused on this relationship with respect to the three dimensions of media consumption as it relates to maladaptive daydreaming: Firstly, media’s role as the trigger of maladaptive daydreaming was analyzed. Secondly, media consumption as the accompanying behavior to maladaptive daydreaming was analyzed. Lastly, online media use habits of maladaptive daydreamers were analyzed in the context of the current media environment.

**Media Use as a Trigger**

Media as the trigger of maladaptive daydreaming is one of the three dimensions of the relationship between media consumption and maladaptive daydreaming. As discussed in Chapter 3, the respondents were asked whether particular forms of media triggered their daydreaming or not. Listening to music stood out as the most common trigger of daydreaming: 87% of the respondents reported listening to music as a trigger. A significant statistic is the difference between the percent of people who state that listening to music triggers daydreaming versus the
percent of people who state that hearing music triggers daydreaming. In contrast to the 87% who were triggered by listening to music, 56% of the respondents mentioned that hearing music triggers daydreaming. This difference suggests that active engagement with music is more likely to trigger daydreaming than hearing music in the background. Furthermore, this difference may also suggest that the need to listen to music operate in tandem with the need to maladaptively daydream.

In Chapter 2, previous literature regarding the likeliness of being dissociated and media use were reviewed. Building on this relationship, the following hypothesis is tested to see whether likeliness of being triggered by media and the consequent inclination to engage task-unrelated thought translated into a severity in the maladaptive daydreaming condition: (1) The ones who are triggered by media consumption more are likely to be more severely maladaptive daydreaming.

Correlation analysis was conducted between the variables that measure “severity of maladaptive daydreaming condition” and “being triggered by media consumption.” The correlation between the two variables was found to be statistically significant, $r(103)= +0.237$, $p=0.015$, two-tailed. (See Table 5) The correlation is significant at the 0.05 level, and there is a weak positive relationship between the two variables. This finding suggests that those who are more likely to be triggered by media consumption are also more likely to severely daydream maladaptively.
As laid out in Chapter 2, this analysis aims to understand the behavioral aspects of maladaptive daydreaming, and it therefore focuses on the process of daydreaming rather than the daydreaming content. Considering the inverse relationship between engaging in task-unrelated thought and age, this hypothesis focuses on whether being triggered by media is a factor that also decreases as a function of age. A correlation analysis was conducted between the following variables: age and being triggered by media.

The correlation between the two variables was found to be statistically significant, with an $r(126)=-0.475$, and $p<0.01$. (Table 6) The statistical analysis indicates an inverse relationship between being triggered by media and age.

<table>
<thead>
<tr>
<th>Being triggered by media</th>
<th>Severity of maladaptive daydreaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.237*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.015</td>
</tr>
<tr>
<td>N</td>
<td>105</td>
</tr>
</tbody>
</table>

Table 5: Correlation Analysis between Being Triggered by Media and Severity of the Maladaptive Daydreaming Condition

<table>
<thead>
<tr>
<th>age</th>
<th>Being triggered by media</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Correlation Analysis between Being Triggered by Media and Age.

Considering that the scale that we employ for understanding trigger behavior consists of a sum of the number of media consumption forms that triggers daydreaming, this negative
relationship suggests that the older a maladaptive daydreamer, the fewer the types of mediums that are likely to trigger her.

Media Consumption as an Accompaniment of Daydreaming

The second dimension of the relationship in our focus relates to media consumption as an accompanying behavior to daydreaming. According to Bigelsen and Schupak’s (2011) finding, pacing while listening to music was reported as the most common accompaniment of maladaptive daydreaming. The finding of Bigelsen and Schupak is in line with our findings, where listening to music was the most common media consumption activity during daydreaming. According to our data, 83% of the respondents stated that they listen to music “Often” or “Very Often” during daydreaming.

Literature review in Chapter 2 revealed that music consumption was found to be a trigger and accompaniment of daydreaming (Bigelsen and Schupak 2011), and dissociative experiences were correlating to music enjoyment (Rhodes et al. 1988). The following hypothesis tests whether these relations between music consumption and dissociation reflect on the behavioral level:

(2) Among the maladaptive daydreaming population, those who listen to music more during daydreaming are also more likely to daydream for longer hours.

Correlation analysis was conducted between the variable that measures the likelihood of listening to music during daydreaming (a Likert scale), and the variable that assesses daydreaming frequency. With an \( r(102) = +0.219 \), and a \( p = 0.027 \), a weak positive relationship is found between listening to music more during daydreaming and daydreaming for longer hours. (See Table 7) The correlation is significant at the 0.05 level. Therefore, the more likely a
maladaptive daydreamer is to listen to music during daydreaming, the more they are likely to
daydream for longer hours.

<table>
<thead>
<tr>
<th>Music during daydreaming</th>
<th>Daydreaming frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.219*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.026</td>
</tr>
<tr>
<td>N</td>
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</table>

Table 7: Correlation Analysis between Likeliness of Listening to Music During Daydreaming and Daydreaming Frequency

Online Media Use and Maladaptive Daydreaming

The third aspect of this analysis is about how maladaptive daydreaming behavior relates
to media consumption in the current interactive media environment. In Chapter 2, the
neurological basis of the reward process as it relates to daydreaming and media consumption was
discussed. Building on an understanding of daydreaming as a behavioral addiction and the
interactive dimensions of daydreaming, the following hypothesis was tested:

Building on the discussion in Chapter 2 about the similar neural process that take place
during the formation of addictive daydreaming patterns and addictive media use patterns, the
following hypothesis was tested: (3) Among the maladaptive daydreaming population, the people
who daydream more frequently are also likely to surf on the Internet more frequently.

Correlation analysis was made between the variable that measures Internet surfing
frequency and daydreaming frequency. With a Pearson’s correlation of r (97) = 0.315, and an p
< 0.01, a moderate positive relationship is found between surfing the Internet and daydreaming
for longer hours. The correlation is significant at the 0.01 level. (See Table 8) Therefore, the
longer a maladaptive daydreamer surfs the Internet, the longer they daydream.
These findings about media use’s relationship with maladaptive daydreaming are in line with the findings of Bigelsen and Schupak (2011). Analyzing data in regard to this relation provided insight about how being triggered by media, listening to music more while daydreaming, and surfing the Internet for longer hours reflected into daydreaming behavior. These findings also revealed how media’s role in maladaptive daydreaming changes over time.
CHAPTER FIVE: CONCLUSIONS

Introduction

This chapter concludes this project. The implications of the findings will be discussed. Building on the conceptual framework and our findings, recommendations will be made for future research that focuses on the behavioral correlations between maladaptive daydreaming and media consumption. Furthermore, the neural dynamics as they relate to both online behavior and daydreaming are laid out and suggestions are made about research about Internet in the psychological context.

Main Findings and Suggestions for Future Research

This research project analyzed the relationship between maladaptive daydreaming and media consumption on three levels. Media consumption patterns were analyzed in regard to their role as a trigger of daydreaming, as an accompaniment of daydreaming, and how they correlated with online media use patterns. To do so, an online survey was sent out to online groups where people who self-identify as maladaptive daydreamers gather.

In regard to the first dimension of our analysis, media use as a trigger for daydreaming, descriptive statistics were laid out about various media uses and their triggering effect for maladaptive daydreaming. Overall, listening to music stood out from other media consumption patterns as the most common trigger of maladaptive daydreaming as 90% of the respondents mentioned that music was a trigger.
The first statistical analysis revealed a relationship between being triggered by media consumption and being more severely maladaptive daydreaming. This finding suggests that being triggered by media may serve as a particular characteristic trait that leads to the maladaptive daydreaming condition. Considering that 80% of our sample population was daydreaming for 10 years or more, the survey data did not include substantial variance to analyze the triggering effect in various phases of maladaptive daydreaming. Future research can try to address this gap and analyze whether there is any variance in being triggered by media over time. Such a research can provide insight regarding whether being triggered by media is a particular trait that is a function of maladaptive daydreaming, or if being triggered evolves or changes over time in various phases of maladaptive daydreaming.

Future research can be conducted to understand why particular media forms are more likely to trigger daydreaming. The descriptive statistics regarding the triggers of maladaptive daydreaming can serve as insightful data that will help dimensionalize the auditory, visual, and emotional responses that various media forms generate. Furthermore, other psychological conditions that relate to the responses to auditory-visual stimulus can be researched among the maladaptive daydreaming population, in order to lay out maladaptive daydreamers’ particular character traits. Furthermore, those who are trained in mental health can employ the findings about media forms’ triggering effect to come up with behavioral strategies for coping with the urge to daydream.

The second analysis concerned music consumption as an accompaniment of daydreaming. A positive relationship is found between listening to music more during daydreaming and also daydreaming for longer hours. This finding is in line with previous
research about dissociative experiences and music use, but further extends this relationship by suggesting a behavioral correlation during engaging in both maladaptive daydreaming and music use at the same time.

This finding, however, does not suggest any causation: listening to music may be lengthening daydreams by providing stimuli continuously. This causation would reinforce Herbert’s (2014) theory about the effects of the multi-dimensional stimuli that music consumption provides. On the other hand, the relationship between absorption and music use may constitute the only reason for this finding, and daydreaming and music use may be solely operating in tandem with one other without dynamical having an effect at the behavioral level. In order to understand whether music lengthens daydreams, a study might be conducted in which respondents are instructed to engage in maladaptive daydreaming periods with and without music.

Thirdly, it was found that people who daydream more frequently are also likely to surf on the Internet more frequently. This finding raises questions about whether predisposition to daydream also correlates with predispositions to navigate online. To understand Internet use in a psychological context, the psychological engagement that takes place during online navigation can be addressed. For example, the role of hypertexts and other functionalities of the Internet facilitating online navigation in facilitating thought processes might be researched in the field of neuroscience.

Building on this finding, a neurological analysis can be conducted to see if online navigation correlates neurologically to navigation in thoughts. For this purposes, an fMRI can be taken while a person navigates online. Through such an analysis, the brain regions that operate
during online navigation can be analyzed, and a determination can be made as to whether there is an overlap in the regions that activate during daydreaming and online navigation.

Finally, a survey can be administered to a population that does not maladaptively daydream for comparison purposes. Such a design can help us understand how media use patterns of maladaptive daydreams differ from that of the overall population. Also, it can provide insight about whether maladaptive daydreamers are more likely to consume media overall. However, to conduct this study, research subjects who do not maladaptively daydream should be able to differentiate mind-wandering from daydreaming to provide precise accounts about their daydreaming behavior.

In this chapter, suggestions are made for future research. The findings of this thesis can serve as insight for future research about media use and task-unrelated thought, as well as provide insight for mental health professionals to understand the condition for maladaptive daydreaming. This thesis calls for attention of the academic and health care community about this condition.
APPENDIX A1

Survey Questionnaire

1) How did you first hear about maladaptive daydreaming?
   ( ) Offline
   ( ) I searched my behavior online.
   ( ) I encountered information about it online when I was looking for other things.

2) For how long would you say you have been maladaptively daydreaming?
   ( ) Less than 1 year
   ( ) 1-3 years
   ( ) 4-6 years
   ( ) 6-9 years
   ( ) 10 years or more

3) Some people who identify themselves as maladaptive daydreamers mention that media triggers daydreaming. Which of the following tends to cause your daydreams? Please select all that apply.
   ( ) Media do not trigger my daydreams
   ( ) Hearing music
   ( ) Listening to music
   ( ) Watching television
   ( ) Watching videos online
   ( ) Reading
   ( ) Browsing social media
   ( ) Surfing the Internet

4) Some people who identify themselves as maladaptive daydreamers stated that they daydream while consuming some kind of media. As you are daydreaming, are you doing any of these? Please select all that apply.

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<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
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<tbody>
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<td>Surfing the Internet</td>
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5) In a typical day, for how many hours do you daydream?

6) Do you ever confuse your daydreams with reality?
   ( ) Yes
   ( ) No

7) In a typical day, how many hours do you spend surfing the Internet?

8) Please answer the questions with regard to your daydreaming behavior. Please indicate how true the following statements are for you, by selecting the options which best describes your answer.

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I have attempted to spend less time daydreaming, but I am unable to.

I have given up some of my social time so I can spend more time daydreaming.

My productivity has decreased as a direct result of time I spend daydreaming.

I feel anxious if I feel the urge to daydream, but I am in a situation where I can't.
APPENDIX A2

Survey Coding Sheet

2) Number of years daydreaming:
   1 = Less than 1 year
   2 = 1-3 years
   3 = 4-6 years
   4 = 6-9 years
   5 = 10 years or more

4) Accompaniments of daydreaming
   (Likert)
   1 = Never
   2 = Rarely
   3 = Sometimes
   4 = Often
   5 = Very Often

6) Confusing Reality: Yes= 0 / No = 1
You are invited to participate in a research study titled “Understanding the Relationship between Daydreaming and Media Use”. This study is being conducted by Handan Uslu, Master's candidate in Georgetown University, to understand how media use relates to daydreaming frequency and patterns.

Participation in this study is entirely voluntary at all times. You can choose not to participate at all or to leave the study at any time. Regardless of your decision, there will be no effect on your relationship with the researcher or any other consequences. You are free not to answer questions throughout the survey. Your responses will be recorded every time you click the "Next" button at the end of each section of the survey.

You are being asked to take part in this study because you were associated with online groups regarding daydreaming.

If you agree to participate, you will be asked to fill out one survey about your feelings, media use, and daydreaming behavior. This survey should take around 15 minutes to complete. The survey will be collected online through Survey Monkey's system, on March 15th.

All of your responses to this survey will remain anonymous and cannot be linked to you in any way. No identifying information about you will be collected at any point during the study, and your survey will be identified only with a random number. Once you submit your completed survey, there will be no way to withdraw your responses from the study because the survey contains no identifying information.

Study data will be kept in digital format in Handan Uslu’s personal computer. Access to the digital survey data on the researcher’s personal computer will be protected by a password. Only the researcher will have access to the data.

There are no risks associated with this study. While you will not experience any direct benefits from participation, information collected in this study may benefit others in the future by helping the academic community understand the nature of excessively daydreaming, and provoking further research about the topic.

If you have any questions regarding the survey or this research project in general, please contact
the principal investigator, Handan Uslu, at +1 (202) 765-5598, or via hu17@georgetown.edu, or her faculty advisor, Associate Professor D. Linda Garcia, at +1 (202) 687-6618, or via garciadl@georgetown.edu. If you have any questions about your rights as a research participant, please contact the Georgetown University IRB at (202) 687-1506 or irboard@georgetown.edu.

By clicking the button below and clicking “Submit” you are indicating your consent to participate in this study.

Handan Uslu  
Master’s Candidate  
Communication, Culture & Technology Program  
Georgetown University  
(202)-765-5598  
hu17@georgetown.edu  
The respondent can start the survey only if he or she clicks the button with the following information: I have read and understand the above consent form, I certify that I am 18 years old or older and, by clicking the button to enter the survey, I indicate my willingness voluntarily take part in the study.
References


patients?). *Journal of substance abuse treatment, 11*(1), 17-23.


