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An Investigation into How Degree of Distraction with Mobile Device Users Influences Attention to Detail

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AN INVESTIGATION INTO HOW DEGREE OF DISTRACTION WITH MOBILE DEVICE USERS INFLUENCES ATTENTION TO DETAIL

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DEDICATION

My greatest appreciation and love to my mother, Marian C. Wright, to whom I wish to thank above anyone else. Each, and every day, I strive to improve myself so as to make myself a better son to her, and a better man of which my family can be proud of. My successes are not, and will not be counted, by me, in terms of the degrees that I attain, or in the amount of money that I may earn, but in terms of the positive influence that I might have on the younger members of my family. I want my nieces and nephews to know that anything that one wishes to achieve can be attained through hard work and being dedicated to being the best person that you can be: when you strive to do the best that you can, you have made us all proud…push on!

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JEFFERY C. ALLEN

ABSTRACT

Previous research has indicated that the overuse of mobile devices by youths, especially at work or in class, can be disruptive to others, and be detrimental to the individual engaged in this activity in regards to task performance. The purpose of this study was to investigate the relationship between distraction due to use of mobile devices, while engaged in a task, and subsequent recall of details being presented during exposure to a stimulus.

Due to the ubiquitous and pervasive nature of mobile devices in today's youth culture, and in our society as a whole, understanding and explaining what personality types and dispositions, are likely to engage in the overuse of mobile devices, and how their motivations for acquiring and using mobile devices in the first place may potentially impact the users task performance, could possibly enlighten parents, educators, and even the subject themselves as to the causes and ramifications of such behavior; thus, paving the way to possibly developing and establishing protocols that might allow individuals to use these devices more effectively and responsibly.

This investigation found that there is a significant overall inverse relationship between distraction by mobile device use while on task and attention to the details of the stimulus being presented. Persons between the ages of 26 and 40, and the personality type of Neuroticism showed some relation to being distractible. The study also found

evidence that the personality type of Openness, those whose motivation for using mobile devices were utility based, and females were more likely to pay closer attention to the details of a stimulus (when controlling for all other variables including distraction by mobile device use).

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CHAPTER I

INTRODUCTION & RATIONALE

I recently was tasked to perform as a Teacher's Assistant for a junior level writing across the curriculum university course. Many of the students in this class seemed to have difficulty meeting some of the writing criteria although the instructor was quite knowledgeable, and appeared to be eager to assist any of the students in any way possible. After grading the first assignment (which was due at the start of the second week of classes), I became concerned as to why there were so many below average grade scores on such a basic and simple assignment. I reviewed the graded assignment submissions, began to pay closer attention to the errors being made, and noticed that most of the errors were due to not following the posted assignment instructions. In my attempt to discern a way to maybe help the students perform better on upcoming assignments,

I began to pay very strict attention to the behavior of the students while in class. It was then that I became extremely aware that, what seemed to me to be, half of the class was not paying attention to the instructor during the lectures, but were instead paying attention to their cell phones and other mobile devices.

I immediately asked myself "How can anyone expect to learn anything, if they are distracted by their mobile devices and possibly not paying attention to the source of the information". I was also concerned about what can be done to help these students improve their performance. I decided to perform an experiment to examine the issues of distraction by mobile device usage while on a task, and how a participant's recall of informational details delivered by a stimulus is related.

As a media effects student, it would not be unusual to assume that a mobile device, such as a cell phone, pad, or tablet, demands a considerable amount of attention from its user. One can hardly surf the internet for any amount of time before encountering several pop culture news stories about incidents of people making faux pas' while engaged with a mobile device including walking into other people or objects, sexting scandals, or tragically, automobile accidents and fatalities due to texting while driving.

Hammer, Ronen, Sharon, Lankry, Huberman, and Zamtsov (2010) reported that millennial students themselves admitted to using their mobile devices for non-academic purposes and during class. These users understand that the instructor and older students find the practice disruptive, but still "believe such usage is legitimate" (p. 293). The results of the study also indicated that many students believed that they were quite adept

at multitasking, and that cell phone use did not interfere negatively with their academic performance. However, Watson and Stayer (2010) found that only 2.5% of their sample population can be considered as part of a 'privileged' group of 'Supertaskers' who can successfully perform simultaneously two attention demanding tasks without significant reduction in performance on either task.

Recent investigations indicate that today's young adults' use of cell phones, and other mobile devices, is fundamental to their method of symbolic interactions (Wei & Lo, 2003). Prensky (2001) even asserted that young people that he called "Digital Natives", who grew up with emergent media technologies, have drastically and fundamentally changed the manner in which they learn.

Perhaps just as importantly in regards to this paper, the mobile devices are used to satisfy the user's social needs and gratifications, or to ease their sense of deprivation (Blunter, 1994). Several studies, including Madell and Muncer (2007), Wei and Lo (2003), and Leung and Wei (2000) have investigated user motivations in regards as to the choice of using cell phones; however, few studies have taken into consideration how personality factors and dispositions of shyness and sociability might influence how user's motivations might be prioritized in this regard.

What is missing in the previous research is the relationship between personality type variations and degree of distraction caused by use of mobile devices. Moreover, there is less known about the relationship between social needs as well as other media effects and degree of distraction.

To examine this gap in the research, it was proposed that measures of a participant's personality factors combined with assessments of their, sociability or shyness dispositions, gratification seeking behaviors and transportation could be used to predict how a participants' distraction caused by use of mobile devices while engaged in an activity that should require a significant degree of attention to details when exposed to media content presented through a stimulus would be evidenced.

This study is important to gain a better understanding of how and why cell phones and other mobile devices are ubiquitously indispensable in today's society. Some people, especially youths, seemingly use mobile devices, especially cell phones, to the point of being described by some as addictively (Bianchi & Phillips, 2005). 'Misuse' or 'over-use' of mobile devices has been found to be disruptive or annoying while engaged in conversations or while enjoying other group activities (Lenhart, Ling, Campbell, & Purcell, 2010). 'Misuse' can even be detrimental or dangerous such as in regards to more major issues such as learning activities, and safely driving an automobile (Walsh, White & Young, 2010).

Results of motivational and personality investigations like this may be able to help develop educational protocols that will enable educators to teach our youths how to use these devices more productively, and to find ways to possibly moderate potentially negative impacts for heavy mobile device users. Given the importance that mobile devices have become to our youth's symbolic interactions, and thus their/our social constructs, it is also important that we attempt to understand why youths are so involved with their mobile devices, how today's emergent media may influence the user's level of

engagement/absorption with the stimulus being presented (transportation), and what effects age and possibly gender might have on mobile device use, and how these variables relate to DoD.

Researchers Bianchi and Phillips (2005) found that extraverts (especially with low self-esteem) and younger people were more likely to engage in problematic mobile phone use. On the other hand, Auter (2007) found evidence that "cell phone use may be utilised to avoid communication apprehension events" and provides users with the "opportunity to strengthen some interpersonal communication bonds while avoiding others (p. 139): the same study also found that "It is clear that gratifications obtained from cell phone use are strongly related to traditional interpersonal communication motives – most notably, affection, inclusion, and situational control" (p. 153).

This investigation also examined the role that the stimulus itself has in regard to how users engage media: especially in regards to how a user's level of involvement with the stimulus is related to distraction. Green & Brock (2000) asserts that "The first consequence of transportation is that parts of the world of origin become inaccessible" (p. 701) and that "Beyond loss of access to real-world facts, transported readers may experience strong emotions and motivations" (p.702).

The basic assumption for this study was that the use of a mobile device during class would distract the student enough to cause a significant lapse in the recall of the information being presented by the instructor. Therefore, I chose to employ scales labelled Degree of Distraction by mobile device use (DoD) and Attention to Detail presented by stimulus (PAD); and used these measures to understand and explain how

DoD relates to recall of details of media content presented via a stimulus (PAD). Therefore, the overall research question for this study was:

> RQ: How degree of distraction (DoD), as a measure of device usage while engaged with a task, relates to recall as measured by attention to stimulus details (PAD)?

In an effort to better understand the role that the distraction that may be caused by mobile device use might have in regards to learning situations, this study examined how degree of distraction by mobile device use (DoD) related to the participant's attention to details of a mediated stimulus (PAD). The existing body of research indicates that personality type, personality disposition, motivations for using the device itself, as well as how involvement or engagement with the stimulus could have significant impact upon how DoD and PAD are related while users are engaged in a task.

CHAPTER II

LITERATURE REVIEW

The basic assumption made in this investigation, based upon the existing body of literature, is that the relationship between degree of distraction (hereafter referred in this paper with the acronym DoD). and Participant Attention to Stimulus Details or recall (hereafter referred in this paper with the acronym PAD), would be moderated by demographic variables, as well as variables pertaining to personality type and personality disposition, motivations for using mobile devices, and involvement with the media or transportation.

In the rest of this chapter, I will review the literature on the Big Five Personality Index, Sociability and Shyness, Uses and Gratifications, and Narrative Transportation leading to the research questions and hypotheses.

Big Five Personality Index (BFPI-44)

Studies have been undertaken to assess the validity of the personality factors that

have become known as the Big Five Personality Index (BFPI-44) in regards to how these factors are used to predict job performance. According to Barrick and Mount (1991) "The 5-factor model obtained by Fiske (1949) and Tupes and Christal (1961) was corroborated in four subsequent studies (Borgatta, 1964; Hakel, 1974; Norman, 1963; Smith, 1967)", furthermore, they go on to state that "Borgatta's findings are noteworthy because he obtained five stable facors across five methods of data gathering" (p. 2). The Big Five factors, as listed by Benet-Martinez and John (1998), are 1) Extraversion; 2) Agreeableness; 3) Conscientiousness; 4) Neuroticism; and 5) Openness. These five, widely accepted, broad categories are generally accepted as descriptions of personality trait variable convergences that are derived from performing oblique rotational factor analyses of bi-polar clusters of terms that indicate personality differences.

Factor I Extraversion is usually listed as the first category label and is sometimes called Surgency. Barrick and Mount (1991) associate being gregarious, sociable, active, and talkative as traits indicating extraversion or surgency. Some measures such as the *Myers-Briggs Type Indicator* (1944), which is based on psychological theories developed by Carl Jung, view extraversion/introversion as a dichotomist personality dimension that is measurable on a contiuum; ergo, being high on the extravert scale indicates being low on the introvert scale, and vice versa.

Factor II Agreeableness is usually listed as the second category label and, according to Barrick and Mount (1991), is often interpreted as Likeability or Friendliness (see Borgatta, 1964; Goldberg, 1981; & Guilford & Zimmerman, 1949, p. 4). Being flexible, forgiving, courteous, and tolerant are some of the personality traits associated

with this dimension (Barrick & Mount, 1991).

Factor III Conscientiousness is usually listed as the third category label and is sometimes identified as Dependability or Conformity by Fiske, 1949; and Hogan, 1983 (as cited by Barrick & Mount, 1991). Conscientiouness "appears to reflect motivational stability—the tendency to set goals and work toward them in an organized fashion" (DeYoung, Peterson, & Higgins, 2002, p. 535). In citing several other relatively recent personality studies such as Costa and McCrae, 1992; Brand, 1997; and White, 1999, that tested conscientiousness in regards to task performance, planning, arousal status, and being persistent or driven Ylias and Heaven (2003) noted that when this dimension is assessed as a continuous measure "one has good reason for expecting High Cs to outperform Low Cs when distracted" (p. 1071).

Factor IV Neuroticism is usually listed as the fourth category label, and it is often interpreted as a measure of emotional stability, or emotionality and includes the traits commonly associated with nervousness, anxiety, depression, anger, and insecurity. Some investigator prefer a two dimensional personality index favoring the use the categories of extroversion and neuroticism as a system of personality classification taxonomy (Barrick & Mount, 1991): in these types of personality trait examinations neuroticism is category II instead of category IV (after extraversion as category I).

Factor V Openness which is usually listed as the fifth dimensions label and is possibly the most debated interpretation. The category is often labelled Intellect, Openness to Experience, or Openness to Culture in studies such as those by Borgatta, 1964; McCrae and Costa, 1985; and Hakel, 1974 respectively. Personality traits

inclusive to this dimension include “being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive” (Barrick & Mount, 1991, p. 5).

The identification of distinct personality types prompts the following research question pertinent to this investigation to arise:

> RQ1. How personality differences, as measured by the Big Five Personality Index (BFPI-44), relate to the participant’s Degree of Distraction (DoD) caused by mobile device usage?

Sociability and Shyness scale (SandS)

Researchers question whether being sociable is the diametrical opposite of being shy. It would seem instinctively obvious that someone who is sociable would be classified as the personality type commonly labelled Extravert, and that someone who is considered shy would be labelled as an Introvert (a label not commonly used today but usually associated with the trait labelled Neuroticism). Choosing to answer that question, Cheek & Buss (1981) performed 2 studies that involved 912 participants, to assess these characteristics and to differentiate whether being sociable or shy is to be considered a personality type or a personality disposition. The results defined sociability and shyness as personality dispositions and subsequently were used in this investigation to assess the relationship that these dispositions have in regards to DoD.

Sociability is defined as “a preference for affiliation or need to be with people” (Cheek & Buss, 1981, p. 330).

Shyness is defined as “the discomfort and inhibition that may occur in the presence of others” (Cheek & Buss, 1981, p. 330).

The Sociability and Shyness scale (SandS) was utilized in testing the following

research questions and hypotheses:

> RQ2. How are the personality dispositions of sociability and shyness, as measured by the Sociability and Shyness scale (SandS), related to the participant's Degree of Distraction (DoD) caused by mobile device usage?

Uses and Gratifications for Mobile Device use (UGMD)

"The use and gratification approach assumes the audience's active participation in media selection and use" (Leung & Wei, 1998, p. 254). Recent research indicates that today's users depend upon their mobile devices to satiate their need for entertainment, information, and to maintain social bonds. The traditional motivations identified in Uses and Gratifications studies are typically characterized as Sociability, Utility/Mobility, Information-Seeking, Fun/Entertainment, and Fashion/Status. Sundar and Limperos (2013) have chosen to use the terms Modality, Agency, Interactivity, and Navigability to describe the affordances indicated by the characteristics derived from their 57-item scale by arguing that the nature of today's emergent media has altered the interactive usage of media content and platforms to the extent that a user's needs may not even be formed at the outset of the media interaction but rather that:

> …the gratifications that we derive from media need not necessarily be driven by innate needs, but could be triggered by features we experience *while* using particular media. The interactivity of most modern media makes possible such a conceptualization whereby users are not always goal-directed at the beginning of their engagement of media, but tend to develop needs during the course of their media interaction (p. 510).

Grellhesl and Punyanunt-Carter (2012) focused primarily on applying the Uses and Gratifications theory to explain differences in motivations to use mobile devices for

texting purposes based on gender, and their study found that "Both male and female respondents reported ease of access and convenience of the ever-present mobile phone as the number one reason they implement texting on such a wide scale" (p. 2178).

"Mobile telephones have revolutionized how people operate within their social networks with family, friends, and colleagues" (Palen, 2002, p. 78). Not only have mobile devices revolutionized how people that use them operate within their social networks, the devices and their usage actually helps to create not only the social network, but the society that users choose to belong to itself. Palen (2002) states that "…mobile phones also help sustain deep social ties for purely psychological and emotional value" (p. 80); and that "Mobile phones, especially via short-text messaging, also support creation of new kinds of social networks, including large, temporary ones consisting of people linked by common interests and technology" (p. 81). These 'large, temporary' social networks are only temporary in the sense of the individual participants, research indicates that these networks themselves are the products of the new type of symbolic interaction and are permanent fixtures of today's society and youth culture. Studies concerned with internet accessibility, mobile device usage, and multitasking have shown that users spend most of their time away from assigned primary tasks involved with maintaining their social networks: see Rosen, Carrier, & Cheever (2013), Kirschner & Karpinski (2010), and Junco & Cotten (2011) who reported findings indicating that Facebook users spent less time that non-Facebook users studying and had lower GPA's, and that for each 93 minutes above the 106 minimum per day average spent Facebooking, a user's overall GPA dropped .12 points. This might infer that at a reasonable usage

level, these students were perhaps helping each other to improve their academic achievements by sharing information, but when the social networking became obsessive, the academic motivations took a back seat to the need to maintain their social bonds and social status. Kirschner and Karpinski (2010) even concluded that:

> Students who reported Internet-caused schoolwork problems were found to have spent five times more hours online than those who did not, and they were also significantly more likely to report that their Internet use caused them to stay up late, get less sleep, and miss classes. Although not specifically mentioning FB [Facebook], the authors conclude that it is not so much the Internet that causes these problems as the new social opportunities of the Internet. Students who reported academic problems were more likely to use the Internet for real-time social activities such as IM and chat rooms (p. 1240).

Wei and Lo (2003) noted that previous studies of fixed telephone usage have indicated that two main uses of telephones were to satisfy the "intrinsic/social" needs to remain emotionally connected, and the "instrumental/task-oriented" needs to gather and relay information, set business appointments, and the ordering of goods and services (e.g. Keller, 1977, and Noble, 1987); furthermore, Wei and Lo (2003) goes on to state that "The Keller and Noble findings showed that social uses were more frequent than utilitarian uses" (p. 6). Wei and Lo (2003) noted that other researchers like Williams, Dordick, and Jesuale (1985); Dimmick, Sikand, and Patterson (1994); O'Keefe and Sulanowski (1995); Leung and Wei (1998); and Leung and Wei (2000); identified other gratification based motives such as "fun/entertainment"; "reassurance"; "sociability, entertainment, acquisition, and time management" ; "fashion/status"; and "mobility/ immediate access" respectively (pp.8-9).

Sociability is a motivational category concerned with the user's perceived ability to establish and to maintain social connections by arranging meetings (business or recreational), keeping in touch with family and friends, and to organize events (Leung & Wei, 1998, p. 259).

Utility/Mobility is a motivational category concerned with the user's perceived ability to be able to reach multiple people and be accessible to those people efficiently, store messages, ordering of consumer goods and services, and to use special tools such as a GPS app (Leung & Wei, 1998, p. 259).

Information-Seeking is a motivational category concerned with the user's perceived ability to be able to find information about things like consumer goods, access to internet search engines such as Google or Bing, and to stay updated on changes in the news and weather (Leung & Wei, 1998, p. 259).

Fun/Entertainment is a motivational category concerned with the user's perceived ability to be able to find entertainment venues and events, viewing of videos, listening to music, playing games, maintaining companionships, and boredom relief by contacting friends or others (Leung & Wei, 1998, p. 259).

Fashion/Status is a motivational category concerned with the user's perceived ability to be able to show-off to peers, keep up with fashions and trends, to show that expense is of no concern (Leung & Wei, 1998, p. 259).

Modality is a motivational affordance, described by Sundar & Limperos (2013), relating to how media is presented to and perceived by the user. Today's emergent media, and the platforms used to access it, allows for users to consume as well as interact

with media which has significant effects or the motivations a person might have for using specific media in the first place. They go on to posit that different modalities such as textual content, audio content, or visual content for examples, are processed in a different cognitive manner which in turn affects distraction by the media and or the modality (Sundar & Limperos, 2013, p. 512).

Agency is concerned with the gatekeeping and user generated aspect of emergent media. When agency is enhanced, a user is provided the ability to change the nature of their social bonds and networks by being able to act as source, recipient, gatekeeper, and filterer: sometimes all at once. Accordingly, the gratifications that stem from ownness, community-building, agency-enhancement, filtering/tailoring, and bandwagon serve the interests of highly involved, highly motivated users (Sundar & Limperos, 2013, p. 514).

Interactivity is specifically concerned with the ability to be active when engaging the media by having the ability to alter mediated content in real time. When users are able to have interactive exchanges with the content, attention to the media is heightened because the presentation is not static, and the processing of the message is constantly being impeded or changed. In this sense the user expects a certain level of responsiveness from the media, the source, and the interface, and prefers to be able to effect a certain degree of control over the interaction (Sundar & Limperos, 2013, p. 516).

Navigability is an affordance similar to networkability, but is more concerned with how network links flow together to enhance the user's experience while in the process of actively moving within and between links. This characteristic is maybe most evidenced in how games are played. The modalities and the links between them are often

so seamless that the user can actually become immersed into the 'space' or narrative being presented.

The Uses & Gratifications scale items as proposed by Sundar and Limperos (2013) better lend themselves to identify the characteristics of content, process, and social gratifications that would prove relevant to this investigation. This scale needed to be adapted for use in this study; therefore, the 57 items were subjected to factor and reliability analysis before being utilized as a measure (see methods section for details). This investigation applied the modified Uses and Gratifications scale to assess the effect that a participant's motivations had in regards to DoD:

> RQ3. How a user's motivations for using a mobile device, as indicated by a modified Uses and Gratifications scale (UGMD), relates to the participant's Degree of Distraction (DoD) caused by mobile device usage?

Transportation

Transportation, sometimes called immersion, absorption, or engagement amongst other labels, can be described as a cognitive processing mechanism that allows for beliefs to be affected by narratives. The study of this process is of significant concern to those who investigate the persuasiveness of messages.

According to Green & Brock (2000) "To the extent that individuals are absorbed into a story or transported into a narrative world, they may show effects of the story on their real-world beliefs" (p. 701). Studies have shown that when an individual is engaged with the mediated narrative to a high degree, that the person may be so involved as to lose some ability to process factual data from the real-world in favor of the information being presented through the narrative; however, the effects upon the user's emotions and

motivations can linger on, and affect the user's functions in the real-world. These effects evidence themselves regardless as to whether to narrative story is fictional or non-fictional, and regardless to type of modality.

In essence "Transportation is a convergent mental process, a focusing of attention, that may occur in response to either fiction or nonfiction. The components of transportation include emotional reactions, mental imagery, and a loss of access to real-world information" (Green & Brock, 2000, p. 703). As such is the case, using a scale to assess the participant's degree of transportation was useful to delve into the following research question.

> RQ4. How does the participant's level involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's Degree of Distraction (DoD) caused by mobile device usage?
> RQ5. How does the participant's level involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's recall of stimulus details, as measured by Attention to Detail (PAD) score?

In light of the above discussion of the literature, this study predicts that the Big Five Personality, Socialbility, modified Uses and Grtatification and Transportion factors, and the pereception of narrative transportation will moderate the relationship between degree of distraction (DoD) and recall of the details in the media content (PAD) that the participants were exposed to through the stimulus. Hence, this study uses the following research question and raises the overall hypothesis predicting the relationship between degree of distraction (DoD) and recall of the details in the media content (PAD):

> RQ6. What is the relationship of the Big Five Personality Index types, Sociability and Shyness dispositions, Uses

and Gratifications, and Transportation to recall of the details of the stimulus, measured as PAD, controlling for all other independent variables.

H1: Controlling for all other varaibles there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases.

CHAPTER III

METHODS

Recalling how this investigator was dismayed at watching students while in class using mobile devices instead of paying attention to the instructor, this investigator decided to create an observational measure to assess DoD. The measure was used to ascertain what would spur a person to spend several hundreds of dollars for classes and then not get the full benefit of the instruction? Was it personality type or disposition, was it the device itself, or possibly the media that was being presented or accessible through the device? Of course, there were concerns as to whether age, gender, ethnicity, educational level, and even income had any relation to this behavior as well.

Stimulus

The stimulus used in this study consisted of three music videos, by three different award winning artists from the 1990's. The videos were excerpted from the VH-1 show 'Pop-up Video'. The format of a 'Pop-up Video' allows for textual information about the

artist, production of the video, or any other relevant matter to be presented during the course of the video via an 'info-bubble' that was edited into the original video. When the 'info-bubble' or 'Pop-up' was inserted, it was accompanied by an audio cue that resembled a plopping noise that was undoubtedly designed to draw the user's attention toward the 'Pop-up' and the information contained within. The assumption was that this type of multi-faceted message being presented to the participant would allow for a more precise measure of recall.

Procedure

An Institutional Review Board (IRB) from Cleveland State University was asked to approve this experiment. After receiving approval, a sample group of participants was derived from Cleveland State University School of Communication students who were offered extra credit by their instructors in order to elicit their willingness to participate. Sign-up sheets were used to schedule prospective participants who were provided with the examination room location and the examinee's contact phone number.

The participants were invited to a suite of on campus examination rooms on their selected date and time. These rooms had cameras startegically positioned so as to be able to record all participants within the examination rooms. There was adequate signage posted that notified anyone entering these rooms that there were cameras monitoring these areas. The cameras were utilized so that an obervational counting of mobile device usage could be accurately performed at a later date.

This investigator used time-coded video from each of the three cameras used (staging area, as well as viewing rooms 1 and 2), to identify and isolate each participant's

behavior during the entirety of the experiment. A coding system (See Figure 1) was developed to assess DoD by utilizing a progressive numerical point system that would attribute a value to the participant's observed behavior during all stages of the examination. Any participant observations that were not able to be assessed, for any reason, including technical difficulties such as camera failure, were deemed reason for the participant's record to be deleted from the final sample.

Figure 1. Degree of Distraction (DoD) scale details
1= No Use: The participant did not use a mobile device at all.
2 = Glance: The participant only glanced at a device for less than three seconds.
3 = Long Look: The participant looked at the device longer than three seconds.
4 = Touch: The participant touched the device less than three seconds*.
5 = Multiple Touches: The participant touches the device multiple times or longer than three seconds**.
6 = Pick-up: The participant picks up the device to use it.
7 = Multiple Pick-ups: The participant picks up the device more than three times.
8 = Excessive: Over five instances of any of the previous actions except No Use and Glance.

Note. * This does not include touching the device just to move it out of the way.
Note. ** At every level, the value assessed merits one point in the next higher level when the behavior occurs more than three times.

Once all the samples were collected, the tallies were entered into a spreadsheet and double-checked for accuracy by this investigator. The final assessment was divided into four scales:

STAGING1 measured mobile device usage during the
The pre-exposure to the stimulus and post-exposure to the stimulus questionnaires were administered in a large staging area that consisted of a large open seating area with

two computer stations available for use. The stimulus was administered in a private exam room where a large monitor was used to expose the participants to the stimulus that was on DVD. Each of the examination rooms had food and drinks made available to the participants, and the stimulus room was set up to mimic a den or recreation room type of atmosphere so that the participant would be as comfortable as possible.

> pre-exposure portion of the examination.
> STAGING2 measured mobile device usage during the post-exposure portion of the examination.
> STIMULUS measured mobile device usage during exposure to the stimulus portion of the examination.
> PROCESS measured mobile device usage across all portions of the examination.

The pre-exposure questionnaire was administered to the participants after signing an informed consent form. There was also a sign-in form which also was used to assign a participant ID# which would be used to track responses to the two parts of the online survey instrument that was posted on the Survey Monkey website. The participants were advised that a monetary prize would be awarded to a random participant identified by this participant ID# who would be selected by a random number generator at the end of the semester, once the data was finished being collected.

The pre-exposure questionnaire included a 44 item, five point, Likert type scale: where 1 = Disagree Strongly, and 5 = Agree Strongly as measures of the Big Five Personality Index (BFPI-44) by Benet-Martinez & John (1998). This scale was designed to measure the participant's classic 'Big Five' personality dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness by utilizing such

statements as “I see myself as someone who is outgoing, sociable (BFPI36).” and “I see myself as someone who worries a lot (BFPI19)”.

Each of the five dimensions were used as separate scales, as developed by Benet-Martinez and John (1998). Each scale was comprised of the mean of the sum of the item scores for each characteristic. Certain items were reverse coded as needed to preserve proper polarity.

The next grouping of 17 statements measured the participant’s exposure to, and preference for various musical genres (PPEG) on a six point, Likert type scale where 1 = Not at All, and 5 = Favors Strongly. Questions included options such as “How much do you favor country (PPEG5)? and “How much do you favor Jazz (PPEG4)?

The next grouping of 57 items was a Uses and Gratifications for Mobile Device use Scale (UGMD) adapted from Sundar & Limperos (2013). This five point, Likert type scale where 1 = Disagree Strongly, and 5 = Agree Strongly was used to assess the participant’s motivations for choosing to use mobile devices and included items such as “My mobile device is very important to me because it is stylish (UGMD19” and “My mobile device is very important to me because it features content that is a true reflection of myself (UGMD53)”.

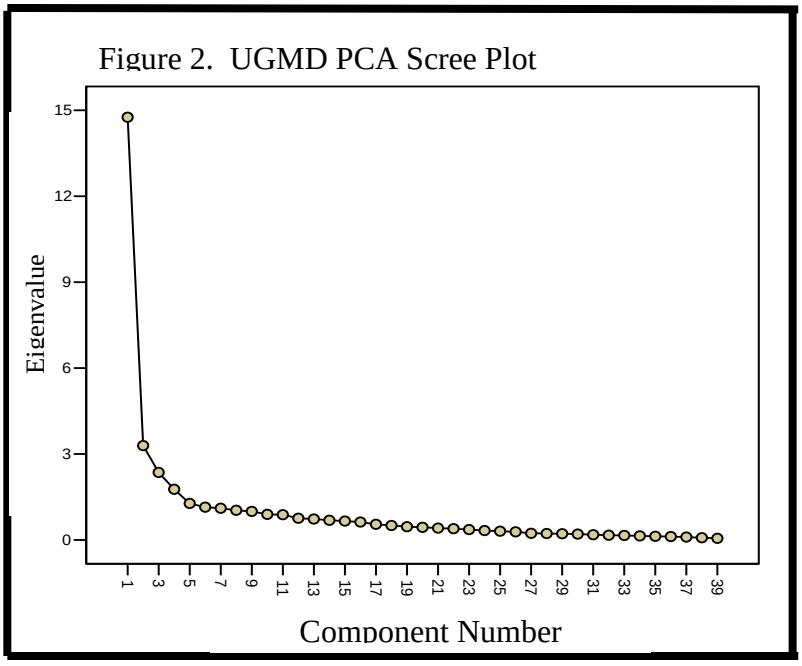
A Principal Components Analysis (PCA) was run on a modified Uses and Gratifications scale (UGMD) comprised of a 57-question questionnaire that measured 120 study participant’s motivations for using mobile devices. The suitability of PCA was assessed prior to analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0. 3. The overall Kaiser-Meyer-Olkin

(KMO) measure was 0.87. The Bartlett's Test of Sphericity was found to be statistically significant ($p < .0005$), indicating that the data was likely factorizable.

An initial PCA revealed 12 components that had eigenvalues greater than one and which explained 37.1%, 6.7%, 4.6%, 3.9%, 3.6%, 3.2%, 2.7%, 2.6%, 2.5%, 2.4%, 2.3%, and 1.8% of the total variance, respectively. Visual inspection of the scree plot, see Figure 2, and assessment of the investigator's interpretability criterion indicated that three components should be retained and therefore three components were retained.

The retained three-component solution explained 52.3% of the total variance. A Varimax orthogonal rotation was used. The interpretation of the data was consistent with the motivations for using mobile devices that the questionnaire was designed to measure with strong loadings indicating the attributes of utility on Factor 1, being reflective of self on Factor 2, and using networkability to help in building social capital on Factor 3. The component loadings and communalities of the rotated solution are presented in Appendix Table 13.

Figure 2. UGMD PCA Scree Plot



The next grouping of 65 questions measured the participant's exposure to, and preference for various musical artists (PPEA). A six point, Likert type scale where 1 = Not at All, and 5 = Favors Strongly with questions such as "How much do you favor Sting (PPEA10)?" and "How much do you favor Carlos Santana (PPEA31)?"

The 14 item Sociability and Shyness scale (S&S) developed by Cheek & Buss (1981) was used in the ensuing grouping of statements to assess those two personality dispositions. The scale was a five point, Likert type scale where 1 = Disagree Strongly, and 5 = Agree Strongly which included the statements "I like to be with people (S&S2)" and "I feel inhibited in social situations (S&S7)".

The final group of the pre-exposure questionnaire consisted of a 13-item series of statements which was used to measure the participant's exposure to, and preference for various media platforms (PPEM). The scale was a five point, Likert type scale where 1 = Not at All, and 5 = Favors Strongly which included the statements "How much do you favor MP3 Player? (PPEM2)" and "How much do you favor Live at Concert Venue? (PPEM4)".

The stimulus was designed to be entertaining, somewhat immersive, as well as informative, and was used as a way to gauge whether the participant would remain focused on the task at hand, or how much they would be distracted by their mobile device. The stimulus was comprised of three music videos from different artists: The first video was *"Say You'll Be There"* (1996) by The Spice Girls. The second video was *"One"* (1991) by U2. The third video was Janet Jackson's *"Together Again"* (1997). All three videos were captured on VHS tape from VH-1's popular music video series

Pop-up Video, then digitized and burned to DVD. The three videos combined had a runtime of 13 minutes and 33 seconds. An introduction comprised of instructions for watching the video, making themselves comfortable (to promote natural use of their devices should they opt to do so), what to do when finished, and a musical interlude was added to the music videos so that the entire stimulus portion runtime was 30 minutes.

The videos were selected due to the popularity of the songs as well as the artists. The assumption was that even though the expected age group of the sample would be only slightly familiar with the songs or artists, due to the fact that the songs were hugely popular during their initial release, an audience that was unfamiliar with the song or artist would still find the media entertaining. The introduction invited the participants to make themselves comfortable by adjusting the lights, volume, and helping themselves to food and drinks that were made available.

The narration of the instructions was augmented by New Age style background music chosen to promote a relaxed atmosphere. The objective was to simulate as closely as possible a homelike setting so that the participant would be encouraged to behave as they normally would when watching a video. The only restrictions given in the introductory narration asked the participants not to move the lounge chair (so that the video cameras would capture all potential device usage), and not to fast-forward or rewind the videos (pausing the videos was acceptable).

A post-exposure questionnaire was presented to the participants once they returned to the staging area after viewing the videos. The first 24 items were designed to assess how attentive they were to the details (PAD) of the video's imagery, and to the

information proffered in the video's 'pop-ups'. Those 24 items consisted of multiple choice (A, B, C, or D) questions such as "What was the color of Janet's head covering in the *Together Again* video? (PAD17)", and "What kind of research were the proceeds of the song *One* donated to, according to a pop-up in the video? (PAD23)".

The participants were then asked the multiple-choice question "Please indicate which video you preferred most" whereas each video was an option (A, B, or C) with option 'D' available for the choice of "Didn't like any of the videos" and was labelled in the codebook as Participant's Stimulus Video Preference (PVP). This measure was not used in the final analysis.

The next section of ten statements were used to measure the level of the participant's transportation (PT) or involvement with the media. The scale was a five point, Likert type scale where 1 = Very Much, and 5 = Very Much Not and included the statements "I could picture myself in the scene of the events depicted in the video. (PT2)" and, "I found my mind wandering while viewing the video. (PT7)".

The remainder of the instrument was used to ask general demographic questions to ascertain age, gender, employment status, household income, ethnicity, and education level, except for the final question which was a section for the participants to list any production type errors that they may have found in the videos. This item was labelled "Video Error Assessment" (VEA) and was not used in the final analysis as the item's original purpose was to deter the participant's focus away from the actual measure of interest: use of a mobile device while on task.

Data Cleaning

Once all of the samples were collected, descriptive statistics were ran for all variables to ensure that the values fell into the desired parameters for that variable. Variables such as Genre Relevance to the Participant's Previous Experience (PPEG) and Artist Relevance to the Participant's Previous Experience which had response options that had a value of "6" to indicate "Never Heard Of" were recoded to five point Likert type scales in order to facilitate proper analysis and scores of zero were entered as missing.

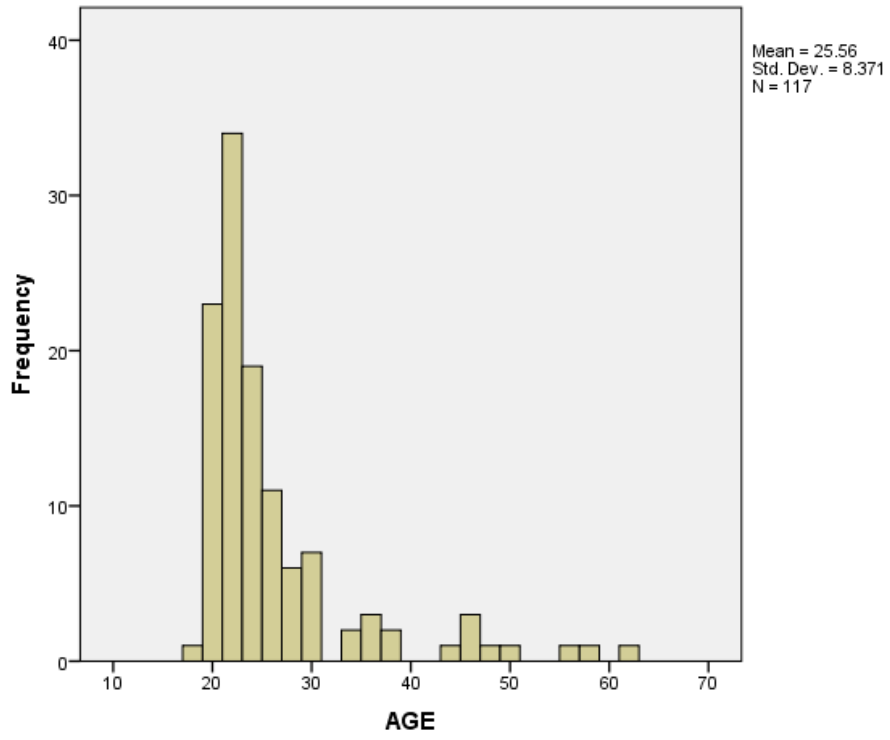
The scale for Participant's Attention to Stimulus Details (PAD) was recoded so that only the correct response to a factual detail presented in the stimulus created a value of "1" and incorrect responses were coded as "0". PAD was then recoded as four separate scales:

1. PADTOTAL = Sum of the correct responses from items PAD1 – PAD24;
2. PADHIGH = Sum of participant responses that scored between 16 – 24 on PADTOTAL;
3. PADMED = Sum of participant responses that scored between 8 – 15 on PADTOTAL;
4. PADLOW = Sum of participant responses that scored between 0 – 7 on PADTOTAL.

This investigator decided to recode Age into the categories Youthful (18-25), Adult (26-40), and Mature (41+) based upon examination of the distribution of the age of the sample group (see Figure 3), and evidence from researchers such as Prensky (2001) who indicated, that in regards to today's emergent media, the age group that was born about 1980 represents "the first generations to grow up with this new technology. They have spent their entire lives surrounded by and using computers, videogames,

digital music players, video cams, cell phones, and all the other toys of the digital age" (p. 2). Prensky used the term "Digital Natives" to describe this group of people, and

Figure 3. Age Distribution Histogram



asserted that they learn in significantly different ways from previous generations of learners, and also that they use emergent technologies in different ways to do so.

Researchers Lai and Hong (2015) offer a substantially different view and assert that there is no empirical evidence to suggest that "generation is not a determining factor in students' use of digital technologies for learning nor has generation had a radical impact on learning characteristics of higher education students" (p. 725).

The established scales (BFPI-44, S&S, and PT) were used as cited in the existing

literature; therefore, each scale had to have its items from the questionnaire, recoded into different variables after reverse coding specific items in order to preserve polarity. The next step was to organize all of the DVD's of the recorded participant sessions by date and room number so that the device usage could be quantified for analysis.

Measures

This investigator created an observational measure to quantify a participant's degree of distraction (DoD) by mobile device usage while assigned to a task (watching a set of videos). See Figure 1 for DoD details. A questionnaire section was utilized to ascertain how well the participant recalled details of the presented stimulus and this measure has been labelled Participant Attention to Detail (PAD).

Adaptations of The Big Five Personality Index (BFPI-44) by Benet-Martinez & John (1998) were used to assess personality type. See Table 1 for BFPI-44 scale descriptive statistics.

Table 1.
*Descriptive Statistics – Big Five Personality Index (BFPI-44)**

	n	N	Mean	Std. Dev.	Cronbach's Alpha
BFPI Extraversion Scale	8	120	3.38	.74	.825
BFPI Neuroticism Scale	8	120	2.65	.70	.732
BFPI Conscientiousness Scale	9	120	3.77	.60	.785
BFPI Openness Scale	10	120	3.87	.57	.764
BFPI Agreeableness Scale	9	120	3.97	.56	.717
Total	44				
Valid N (listwise)		120			

Note. N = number of respondents; n = number of items in each scale.
Note. *Scales cited from Benet-Martinez & John (1998).

The Sociability and Shyness scale (SandS) by Cheek & Buss (1981) was used to assess the personality dispositions of sociability or shyness. See Table 2 for SandS Shyness and SandS sociability scale descriptive statistics.

Table 2.
*Descriptive Statistics – Sociability and Shyness (SandS)**

	n	N	Mean	Std. Dev.	Cronbach's Alpha
Sociability Scale	9	120	3.53	.85	.674
Shyness Scale	5	120	2.65	.73	.830
Total	14				
Valid N (listwise)		120			

Note. N = number of respondents; n = number of items in each scale.
Note. *Scales cited from Cheek & Buss (1981).

The participant's motivations to use mobile devices was assessed using an adapted Uses and Gratification/Cell Phone Motivation Measures Scale (UGMD) developed by Sundar & Limperos, (2013). A Principle Components Analysis (PCA) yielded three Factors, utilizing 39 of 57 items, which explained 52.3% of the total variance. The factors were Utility, Reflective of Self, and Networkable, see Table 3 for UGMD scale descriptive statistics.

Table 3.
Descriptive Statistics – Uses & Gratifications (UGMD)

	n	N	Mean	Std. Dev.	Cronbach's Alpha
UGMDFAC1/UTILITY	17	120	4.01	.70	.932
UGMDFAC2/REFLECTIVE OF SELF	12	120	3.02	.77	.898
UGMDFAC3/NETWORKABLE	10	120	3.39	.81	.854
Total	39				
Valid N (listwise)		120			

Note. N = number of respondents; n = number of items in each scale.
Note. *Scales adapted from Sundar & Limperos (2013).

The extent of absorption/transportation induced by the participant's engagement with the stimulus was assessed using the adapted Narrative Transportation scale (PT) by Green & Brock, (2000). The PT scale consisted of 10 items, see Table 4 for PT scale descriptive statistics.

Table 4.
*Descriptive Statistics – Participant Transportation (PT)**

	n	N	Mean	Std. Dev.
Participant Transportation Scale	10	119	3.76	.63
Total	10			
Valid N (listwise)		119		

Note. N = number of respondents; n = number of items in the scale. *Scale cited from Green & Brock (2000). Cronbach's Alpha = .494.

In the pre-exposure questionnaire, sections were used to also evaluate the participant's exposure to or preference for musical genre (PPEG), and for musical artists (PPEA). Demographic information such as age, gender, and race was collected from the post-exposure section of the questionnaire, see Table 5 for demographic characteristics.

Table 5.
Demographic Characteristics

Gender	%	Age	%	Ethnicity	%
Male	51.7	18-25	70.0	White	44.2
Female	45.0	26-40	20.0	Black	31.7
Not Identify	2.5	41-61	7.5	Asian	1.7
Multiracial	7.5				
Not Identify	5.0				
Other	9.2				

Degree of Distraction (DoD) is one of the dependent variables (DV1) which was a measure of observed mobile device use by the participant during the different stages of

the experiment. The basic assumption was that easy access to mobile devices, to the world-wide web via these devices, and personality factors, promoted distraction while assigned to tasks and using mobile devices. Bianchi & Phillips (2005) asserts that "Problem behavior associated with mobile phones is probably due to pre-existing factors that make it likely that the user will engage in such behavior despite the consequences" (p. 40). DoD was labelled as follows: pre-exposure to the stimulus (STAGING1), while exposed to the stimulus (STIMULUS), post-exposure to the stimulus (STAGING2), and throughout the process (PROCESS).

DoD was coded as an eight point Likert type scale. The investigator created a scale that would accurately reflect how much a device was used while the participant was being monitored. The final scale was first coded by this investigator himself, and at a later date, an intercoder reliability test was conducted using ReCal for Ordinal, Interval, and Ratio-Level Data. Results of the analysis show that intercoder reliability for DoD STIMULUS (the only DoD scale used in this study) was 0.674 (Krippendorff's alpha). A confirmatory standard bivariate correlation indicated a 67% correlation between the coders (r = 0.67, p. = .035). See Figure 7 for the intercoder reliability ReCal results.

Table 6.
Descriptive Statistics – Degree of Distraction (DoD)

	Mean	Std. Dev.	
STAGING1	1.41	1.31	
STIMULUS	2.32	2.50	
STAGING2	1.40	1.33	
PROCESS	2.72	2.63	
N			120
Missing			39
Valid N (listwise)			81

Participant Attention to Details (PAD) is one of the dependent variables (DV2) which was a measure of the participant's recall of details presented during exposure to the stimulus. Researchers debate as to whether humans are actually capable of effectively 'multitasking'. We are constantly being bombarded by stimuli from multiple sources, and the use of mobile devices seems to give the user the ability to easily access and control mediated interactions. Junco & Cotten (2011) examined the ability of users to effectively multitask by testing their instant message usage asserting that "multitasking can impede the learning process through a form of information overload" (p. 370), and concluded that over 50% of their sample reported "that instant messaging has had a detrimental effect on their schoolwork" (p. 370). We used this measure to assess how PAD related to DoD. See Table 7 for PAD scale descriptive statistics.

Table 7.
Descriptive Statistics – Participant Attention to Details (PAD)

	Score Range *	%	N **	Mean	Std. Dev.
PADLOW	0 - 7	5.0	6		
PADMED	8 - 15	35.0	42		
PADHIGH	16-24	60.0	72		
PADTOTAL ***		100	120	16.25	4.82
Valid N (listwise)			120		

Note. * Score Range denotes number of correct responses.
Note. ** N = number of respondents.
Note. *** PADTOTAL is the raw score totals for all respondents.
Note. Cronbach's Alpha = .711

Big Five Personality Index (BFPI-44) is one of the independent variables (IV1) that was used to indicate distinct personality traits which affected how a participant engaged with the media. Researchers Conway & Rubin (1991) posit that "Psychological

elements mediate exposure and response to messages. They should help explain why people use media the way they do" (p. 444). This investigation was designed to examine how personality traits and dispositions affected distractibility by use of mobile devices, and how these traits were mediated by a user's motives for using mobile devices.

Sociability and Shyness was one of the independent variables (IV2) used to indicate personality dispositions which affected how a participant engaged with the media. Many researchers have linked personality traits like extraversion and neuroticism to the disposition of being sociable. In investigating psychological factors in relation to cell phone use Wei (2000) asked "What is the role of the cell phone in maintaining the individual's family ties and social connectedness?" and in regard to social connectedness "What role does gratifications-seeking play?" (p. 4). Therefore, the relation between mobile device use and disposition (being sociable or shy) was expected to prove valuable as a confirmatory variable in regards to how personality type affected distraction by mobile device use while on task.

Uses and Gratifications (UGMD) is one of the independent variables (IV3) that was used to assess the participant's motivations for using mobile devices. In preparing for this investigation the literature review discovered many studies attempting to explain motives for engaging different types of media and different types of platforms. Even early studies into technologies such as landline telephones found that users select content, media type, and platform based upon conscious motivational choices (Dimmick et al, 1994, p. 647). More recent studies focused on pagers, cell phones, and the internet. In

light of the fact that today's mobile devices have advanced to the state that they are capable of performing all of those functions and more, it was evident to this investigator that assessment of a user's motivations for using any particular mobile device would be a mediating factor in the participants' behavior during this examination.

*Transportation (PT***)** is one of the independent variables (IV4) that was used to assess the participant's level of involvement with the stimulus that was presented. The premise for integrating involvement with the stimulus into this study is that users have the ability to allocate a certain amount of their attention to multiple stimuli before the capacity to process, recall, and make effective use of the information being delivered through the message is diminished. Lang (2000) states that a user "can think about one thing, or two, or maybe seven, at the same time, but eventually all of your resources are being used, and the system cannot think yet another thing without letting a previous thought go" (p. 47).

Participant Genre Preferences (PPEG) is one of the independent variables (IV5) that was used to assess the participant's experience with and preference for various genres of music. As the stimulus for this examination was a set of pop-music videos**, the assumption is that a user's familiarity with different styles of music may affect the degree of involvement that they might experience while exposed to the stimulus, the level of attention to the details of the information presented during exposure to the stimulus, and how distracted by their mobile devices that they may be during exposure to the stimulus. The relation between the participant's preference for specific types of genre,

mobile device use, and involvement with the stimulus was expected to prove valuable as a confirmatory variable in regards to DoD and recall.

Participant Artist Preferences (PPEA) is one of the independent variables (IV6) that was used to assess the participant's experience with and preference for various musical artists.

The music videos used in this study were performed by three different musical artists, the assumption is that a user's familiarity with various artists affects the degree of involvement that they might incur while exposed to the stimulus, the level of attention to the details of the information presented during exposure to the stimulus, and how distracted by their mobile devices that they may be during exposure to the stim ulus. See the stimulus and procedures sections for more information about the videos.

CHAPTER IV

RESULTS

While walking anywhere on Cleveland State University's campus, it would be extremely difficult to turn one's eyes towards any direction and not see someone engaged with their mobile device. Having observed this behavior occurring even in classrooms during class, it seemed clear that using students as participants for this investigation was not only convenient, but also relevant.

Sample and Independent Variables

A total of 136 Cleveland State University students, recruited from six communication classes, signed up to participate in this study for three points of extra credit given by the instructor. One hundred and thirty one participants completed the online survey, which yielded 120 valid respondents.

Analysis showed that 51.7% of the respondents chose to identify their gender as male, and that 44.2% of the respondents chose to identify as White in regards to ethnicity.

The ages of the respondents ranged from 18 years old to 61 years old (M = 25.6), and for purposes of this study, the sample group was divided into three age groups: Youthful (18-25), Adult (25-40) and Mature (41-61). The Youthful set of respondents comprised 70.0% of the sample, the Adult set comprised 20.0% of the sample, and the Mature set comprised 7.5%. See Table 5 for the complete Demographic Characteristics of the sample group.

In order to test the overall research question pertinent to this study – "How degree of distraction (DoD), as a measure of device usage while engaged with a task, relates to recall as measured by attention to stimulus details (PAD)?" - a standard bivariate correlation analysis was employed which indicated that a significant inverse relationship between DoD (Stimulus) Mean = 2.32, and PAD (Total) Mean = 15.80, p = .002 did exist.

In addition to the demographic variables, there were 11 additional independent variables drawn from the literature on The Big Five Personality Types, Personality Dispositions, Uses and Gratifications, and Transportation.

The Big Five Personality Types are characteristic traits that are commonly labelled Extraversion, Neuroticism, Conscientiousness, Openness, and Agreeableness. We used the following appelations in naming the independent variable scales associated with each personality type. The scales were derived from Benet-Martinez & John (1998).

The Extraversion Scale was designated BFPI EXTRAVERSION (M = 3.38, SD = 0.74). The Neuroticism Scale was labelled BFPI NEUROTICISM (M = 2.65, SD = 0.70). We chose to name the Conscientiousness Scale BFPI CONSCIENTIOUSNESS

(M = 3.77, SD = 0.60). Lastly the Openness scale was named BFPI OPENNESS and the Agreeableness scale was named BFPI AGREEABLENESS (M = 3.87, SD = 0.57) and (M = 3.97, SD = 0.56) respectively. See Table 1 for the entire BFPI-44 descriptive statistics.

Personality Dispositions of Shyness and Sociability were derived from Cheek & Buss (1981). The Sociability Scale (M = 3.53, SD = 0.85) and the Shyness Scale (M = 2.65, SD = 0.73), and were respectively labelled SandS SOCIABILITY and SandS SHYNESS. See Table 2 for SandS descriptive statistics.

Uses and Gratifications scales used to assess motivations for using mobile devices were adapted from Sundar and Limperos (2013) who developed an inventory to quantify motivations in regards to "New Media". When the 57 item inventory was factor analyzed, three scales were retained for use in this investigation. The scales were retained due to standard statistical criterion (Eigenvalues > 1, Coefficient loadings > .5, No double loaders in the correlation matrix, etc.) as well as examination of the Scree plot and how well the three factor or four factor solution fit the study model.

The three retained factors used were U&G UTILITY (M = 4.01, SD = 0.70), U&G REFLECTIVE OF SELF (M = 3.02, SD = 0.77) and, U&G NETWORKABLE (M = 3.39, SD = 0.81). See Appendix Table 13 for the Uses & Gratifications Rotated Structure Matrix.

Narrative Transportaion also considered as involvement with the media was an independent variable labelled PT TRANSPORTATION (M = 3.76, SD = 0.63) and was used to ascertain whether being involved with the media would evidence an increase in

recall to details presented in the mediated stimulus. See Table 4 for the entire PT descriptive statistics.

This set of IV's was selected so as to provide this investigator with sufficient meassures to uncover insights into how user behaviors are evidenced in regard to mobile device usage, and how this behavior might influence distractibility in learning situations. When individuals are distracted from the message being sent, maybe we need to change the "channel".

Table 8 illustrates the results of a standard bivariate correlation between DoD and PAD. These results clearly indicate that when a participant was less distracted by mobile device use, that the participant's attention to details of a mediated stimulus is high. We then went on to test how our other independent variables related to DoD.

Table 8.
Bivariate Correlation – Participant Attention to Details (PADTOTAL) and Degree of Distraction by Mobile Device Use (DoD.)

	N *	Mean	Std. Dev.	Sig. (2-tailed)
PADTOTAL	81	15.80	4.82	
STAGING1 (DoD	81	1.48	1.31	.169
STIMULUS (DoD)	81	2.32	2.50	.002
STAGING2 (DoD)	81	1.40	1.33	.148
PROCESS (DoD)	81	2.72	2.62	.007
Valid N (listwise)	81			

Note. * N = number of respondents.

Dod as Dependent Variable

One of the fundamental concerns at the outset of this study was how personality type was related to DoD which was RQ1: "How personality differences, as measured by the Big Five Personality Index (BFPI), relate to the participant's Degree of Distraction (DoD) pertaining to mobile device usage?"

To test this question as well as the other RQ's where DoD is the DV, a multiple regression was utilized to predict how DoD as the criterion variable was related to age (Youthful and Adult), gender, BFPI Extraversion, BFPI Neuroticism, BFPI Conscientiousness, BFPI Openness, BFPI Agreeableness, SandS Shyness, SandS Sociable, U&G Utility, U&G Reflective of Self, U&G Networkable, and Transportation.

Age, in general, was not found to have statistical significance as indicated by the model significance value ($p = .569$) as shown in the regression model descriptives of Table 9 below. However, the age group Adult did show a significant degree of distractibility ($p < .05$).

BFPI-44 and DoD were tested in the standard multiple regression (see Appendix Figure 4 for regression model summary). Results of the multiple regression indicated that the amount of variance of the DV DoD explained by the variables BFPI Extraversion, BFPI Conscientiousness, BFPI Openness, and BFPI Agreeableness was statistically insignificant ($R = .059$, $p = .32$; $R = -.062$, $p = .293$; $R = .078$, $p = .246$; and $R = -.057$, $p = .309$) respectively. BFPI Neuroticism ($R = .225$, $p = .022$) showed a statistically significant amount of explained variance for the DV DoD. Therefore, only

the personality type BFPI Neuroticism were shown to be more distractable when using mobile devices.

At this point one might begin to conclude that the perceived relationship between distraction due to mobile device usage and personality type doesn't exist. I interpreted these initial findings as an indicator that all personality types are more or less equally prone to disctraction by mobile devices except for the personalities commonly described as neurotic. Taking into consideration that the personality dispositions of sociability and shyness could apply to any personality type, the next logical step was to examine those dispositions.

SandS & DoD was the subject of RQ2 which asked "How are the personality dispositions of sociability and shyness, as measured by the Sociability and Shyness scale (SandS), related to the participant's Degree of Distraction (DoD) caused by mobile device usage?

A standard multiple regression was employed to assess the relationship between sociability (as measured by SandSSOCIABLE scale) and DOD, and shyness (as measured by SandSSHYNESS scale) and DoD. Results show that as shyness decreases DoD increases, but to an degree that is statistically insignificant (R = -.07, p = .278). Results also show that as sociability increases DoD also increases, but also to an degree that is statistically insignificant (R = .07, p = .276). In light of these findings we report that these dispositions have no significant realtionship to degree of distraction caused by mobile device usage. See Table 9 for full results.

UGMD & DoD examined RQ3: "How a user's motivations for using a mobile

device, as indicated by a modified Uses and Gratifications scale, relates to the participant's Degree of Distraction (DoD) pertaining to mobile device usage?". The multiple regression results show that as the motivation labelled Utilty increases DoD increases, but to an degree that is statistically insignificant (R = .06, p = .315). Results also show that as the motivation labelled Reflective of Self increases DoD decreases, but also to an degree that is statistically insignificant (R = .02, p = .426), and that as the motivation labelled Networkable increases DoD increases, but again to a degree that is statistically insignificant (R = .12, p = .146). In light of these findings we report that the motivations indicative of the factors Utility, Reflective of Self, and Networkability are not significantly related to degree of distraction caused by mobile device usage. See Table 9 for full results.

PT & DoD concerned the examination of RQ4: "How does the participant's level involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's Degree of Distraction (DoD) pertaining to mobile device usage?". Analysis yielded similar results. The multiple regression results show that as PT decreased Dod increased, but yet again to a statistically insignificant degree (R = -.03, p = .414), and hence Narrative Transportation was not found to be related to degree of distraction caused by mobile device usage by this analysis. See Table 9 for full results.

Table 9.
Standard Multiple Regression (DoD as Dependent Variable)

		Coefficients			
Model		r	Beta	t	Sig.
1	(Constant)	1.00		-.208	.836

YOUTHFUL	-.152	.069	.354	.724
ADULT	.**220***	.196	1.051	.297
FEMALE	-.067	-.074	-.561	.577
BFPI EXTRAVERSION	.059	-.036	-.231	.818
BFPI NEUROTICISM	.**225***	.335	2.158	.035
BFPI CONSCIENTIOUSNESS	-.062	-.007	-.045	.964
BFPI OPENNESS	.078	.088	.637	.526
BFPI AGREEABLENESS	-.057	-.021	-.142	.888
SandS SHYNESS	-.067	-.294	.618	.110
SandS SOCIABLE	.068	-.045	-.296	.768
U&G UTILITY	.055	.072	.408	.685
U&G REFLECTIVE Of SELF	.021	-.116	-.650	.518
U&G NETWORKABLE	.119	.203	-1.172	.246
PT TRANSPORTATION	.025	.004	.032	.975

Adjusted R^2 = -.019
F = .893, df = 78, p = .569
Note: * p < .05; ** p < .01; *** p < .001

PAD as DV

Results were previously reported to show that a very limited relationship between DoD and the independent variables that describe age, gender, personality type (BFPI), personality disposition (SandS), motivations (UGMD), and transportation (PT) was evidenced. The next step taken was to examine the relationship between DoD and PAD when using for PAD as the DV and controlling for DoD as an IV along with the other IV's.

Degree of Distraction by Mobile Device Use (DoD) and Recall/ Participant Attention to Stimulus Details (PAD) was initially tested using a bivariate correlation to test the general relationship between DoD (STIMULUS) and PAD (TOTAL) as the general research question relevant to this investigation was:

> RQ: How degree of distraction (DoD), as a measure of device usage, affects recall as measured by attention to stimulus details (PAD)?

The bivariate correlation indicated a Stimulus (DoD) Mean score of 2.32 $\pm$ 2.50, and a Mean Total PAD score (M = 15.80, SD = 4.82) which was significant (p = .002).

These preliminary results do indeed indicate a significant inverse relationship between degree of distraction when using a mobile device and the recall of details that a participant exhibited while being exposed to a stimulus: when distraction increased some attention to the details of a stimulus was diminished.

To test the relationship between PAD and DoD when PAD was used as the DV and DoD was used as an IV, we employed a standard multiple regression to control for all IV's including DoD to investigate the following research questions and hypothesis: See Figure 6 for the regression model summary with PAD as DV.

> RQ5. "How does the participant's level involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's recall of stimulus details as measured by Participant Attention to Detail (PAD).
> RQ6: What is the relationship between degree of distraction (DoD), as a measure of device usage, during exposure to stimulus and the attention to the details of the stimulus, measured as recall/PAD, controlling for all other independent variables?
> H6: Controlling for all other varaibles there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases.

Table 10.
Standard Multiple Regression (PAD as Dependent Variable)

Coefficients

Model		r	Beta	t	Sig.
II	(Constant)	1.00		-.341	.734
	YOUTHFUL	.086	.067	.385	.702
	ADULT	-.072	.058	.346	.731
	FEMALE	**.203***	.174	1.469	.147
	BFPI EXTRAVERSION	.033	-.063	-.459	.648
	BFPI NEUROTICISM	.000	.072	.502	.617
	BFPI CONSCIENTIOUSNESS	.043	.056	.427	.671
	BFPI OPENNESS	**.299****	.258	2.087	.041
	BFPI AGREEABLENESS	.110	-.035	-.256	.799
	SandS SHYNESS	.089	.206	1.249	.216
	SandS SOCIABLE	.040	.290	2.125	.037
	U&G UTILITY	**.195***	.348	2.196	.032
	U&G REFLECTIVE Of SELF	-.049	-.130	-.811	.420
	U&G NETWORKABLE	-.151	-.306	-1.967	.054
	PT TRANSPORTATION	.076	-.014	-.115	.909
	STIMULUS DOD	**-.285***	-.293	-2.648	.010

Adjusted $R^2 = .189$
$F = .2.230$, $df = 79$, $p = .014$
Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Demographic Variables were tested first and the results of our multiple regression analysis showed no significant difference between a respondent's age and PAD when controlling for all other IV's. Females however, did show increased attention to details when exposed to the stimulus ($R = .203$, $p < .05$) when controlling for all other IV's.

BFPI-44 personality characteristics were examined using our multiple regression analysis and also showed no significant difference between a respondent's personality type and PAD except for the personality type labelled Openness ($R = .299$, $p < .05$). This personality type showed a significant positive correlation to attention to details when exposed to the stimulus ($R = .203$, $p < .05$) when controlling for all other IV's.

The SandS personality dispositions referred to as shyness or sociability returned no significant correlations to attention to stimulus details when controlling for all other IV's as well.

UGMD measured the motivations for using mobile devices or the gratifications received from using them. The only motivation for using mobile devices which returned a significant result was Utility ($R = .195$, $p < .05$). This indicates that when the participant's motive for using a mobile device was for utilitarian reasons their attention to presented stimulus details was positively correlated.

PT was concerned with the level of the participant's involvement with the stimulus. Quite surprisingly to this researcher, the positive correlation between PAD and involvement, as measured by The Participant Transportation scale (PT), with the media ($R = .076$) was statistically insignificant.

Using DoD as an IV was implemented so that the predicted relationship as stated in H6 "Controlling for all other variables there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases" could be tested. H6 was found to be supported. The multiple regression yielded significant results showing that as PAD increased STIMULUS DOD decreased ($R = -.285$, $p < .05$).

Significant Findings

The bivariate correlation analysis showed that a significant inverse relationship between DoD (Stimulus) and PAD (Total) $p = .002$ exists. Further analyses have shown that when DoD was used as the DV in a multiple regression, the age group labelled

ADULT (26-40) and the personality type classified as Neuroticism were both positively correlated with DoD ((*R* = .225, p = .022 and *R* = .220, p = .025) respectively.

We subsequently tested all IV's using a standard multiple regression where PAD was the DV and DoD was one of the IV's and found that when controlling for all IV's females, the personality type labelled Openness, and the motivation for using a mobile device of Utility, all had significant positive correlations to PAD (*R* =.203, p < .05; *R* = .299, p < .01; and *R* = .195, p < .05) respectively. The same analysis also showed that DoD had a significant inverse correlation to PAD (*R* = -.285, p < .05) thus supporting the prediction of H6 which stated that "Controlling for all other variables there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases".

Table 11.
Standard Multiple Regression: Significant Results

	Coefficients			
Model	r	Beta	t	Sig.
I (DoD as Dependent Variable)				
ADULT	**.220***	.196	1.051	.297
BFPI NEUROTICISM	**.225***	.335	2.158	.035
Adjusted R^2 = -.019				
F = .893, df = 78, p = .569				
Note: * p < .05; ** p < .01; *** p < .001				
II (PAD as Dependent Variable)				
FEMALE	**.203***	.174	1.469	.147
BFPI OPENNESS	**.299****	.258	2.087	.041
U&G UTILITY	**.195***	.348	2.196	.032
STIMULUS DOD	**-.285***	-.293	-2.648	.010
Adjusted R^2 = .189				
F = .2.230, df = 79, p = .014				
Note: * p < .05; ** p < .01; *** p < .001				

CHAPTER V

CONCLUSIONS

This investigator began this study hoping to ascertain why bright, potentially brilliant students were seemingly wasting their time and money in classes by not paying attention to the sources of knowledge available to them: all because of distraction caused by the use of mobile devices.

Not surprisingly results of our bivariate correlation analysis indicated that there was indeed a relationship between DoD and PAD. One of the surprising findings of this study concerned demographics and how factors such as age, and gender influenced degree of distraction due to mobile device use.

Discussion

Demographic differences were shown to not be as significant as was expected. The age group of 26 – 40 were prone to distraction and the other age groups were not. This is surprising in that this group comprised only 20% of the sample population; and

that one would intuitively expect the younger age group to be more distracted. There was no significant difference found between males and females in regards to DoD.

Utilizing DoD as the dependent variable of the regression analyses showed that only Neuroticism was discovered to be statistically positively related to distractibility. All of the other independent variables had no statistically significant relationship to DoD.

When PAD was used as the dependent variable however, test results indicated that being female ($R = .203$, $p < .05$), being the personality type labelled as Openness ($R = .299$, $p < .01$), and those whose motivation for using a mobile device was Utility ($R = .195$, $p < .052$) were found to be statistically positively related to recall as measured by PAD.

DoD ($R = -.285$, $p < .05$) as a controlled for independent variable, also showed an inversely significant correlation to PAD just as H6: "Controlling for all other variables there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases" predicted: therefore, the hypothesis was supported, strongly indicating that if one is distracted by using a mobile device, their attention to details of a stimulus will be diminished. Below is a summary table of the results in regards to each of the independent variables, research questions, and hypothesis:

Table 12.
Results Summary of Findings

IV's/Research Question/Hypothesis	DoD as Dependent Variable Results
Demographic IV's	The age group labelled "ADULT" (ages 26-40) showed a significant relationship with being distracted by mobile device use. Gender had no significant results.

RQ1: How personality differences, as measured by the Big Five Personality Index (BFPI-44), relate to the participant's Degree Distraction of Distraction (DoD) caused by mobile device usage?	BFPI NEUROTICISM was found to have a significant relationship with being distracted by mobile device use. No other personality types had significant results.
RQ2: RQ2. How are the personality dispositions of sociability and shyness, as measured by the Sociability and Shyness scale (SandS), related to the participant's Degree of Distraction (DoD) caused by mobile device usage?	No significant relationship found for either personality disposition tested in relation to the participant's Degree of Distraction caused by mobile device usage.
RQ3: How a user's motivations for using a mobile device, as indicated by a modified Uses and Gratifications scale (UGMD), relates to the participant's Degree of Distraction (DoD) caused by mobile device usage?	No significant relationship found for all motivations to use mobile devices tested for in relation to the participant's Degree of Distraction caused by mobile device usage.
RQ4: How does the participant's level of involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's Degree of Distraction (DoD) caused by mobile device usage?	No significant relationship found for participant's level of involvement with the stimulus in relation to the participant's Degree of Distraction caused by mobile device usage.

IV's/Research Question/Hypothesis	PAD as Dependent Variable Results
Demographic IV's	The gender labelled "FEMALE" showed a significant relationship to the participant's recall of stimulus details. Age was shown To have no significant relatioinship.
RQ5. How does the participant's level of involvement with the stimulus as measured by the Participant Transportation scale (PT) relate to the participant's recall of stimulus details, as measured by Attention to Detail (PAD) score?	No significant relationship found for the participant's level of involvement with the stimulus in relation to the participant's recall of stimulus details.
RQ6. What is the relationship of the Big Five Personality Index types, Sociability and Shyness dispositions, Uses and Gratifications and Transportation to recall of the details of the stimulus, measured as PAD, controlling for all other independent variables	The personality type BFPI OPENNESS, the motivation U&G Utility, and the IV STIMULUS DoD all showed a significant relationship to the participant's recall of stimulus details. There was no significant relationship found for all of the other independent variables in relation to the participant's recall of stimulus details.

H1: Controlling for all other variables there is a negative relationship between DoD and PAD, i.e. as the distraction increases recall decreases.	H1 was found to be supported. There is a significant inverse relationship between Degree of Distraction caused by the use of mobile devices and the Participant's Attention to Details of a stimulus.

Limitations

During the process of conducting this experiment, it became extremely evident to this investigator that unforeseen variables needed to be accounted for in order to better understand human behavior. The most invaluable tool that was not available to this investigator was a means to ascertain the content of the information being accessed while the participant was on task. Looking back, questions could have been added to the post-exposure questionnaire, but a self-report of that type would have to be concerned with the validity of the report. A method of collecting and analyzing the media being accessed by any participant that actually used a mobile device while on task would have proved invaluable to this study.

Some may have issue with a convenience sample being used. Using participants that were not college students would definitely be more representative when trying to understand human behavior in general, but since this study was concerned with understanding this behavior because of how distraction may be affecting learning, using student participants seemed to be reasonable.

A bigger issue, as far as this investigator is concerned, is that the sample group was offered extra credit for their participation. Looking back after the data was collected, it became apparent to this investigator (who also was the primary facilitator during the

process) that many of the participants seemed to rush through the questionnaire sections because the motivation was to expend as little time as possible. This may have caused some participants who would have normally used their devices more to not do so. It is also possible that many participants that may have been more prone to use their devices may not have done so during the pre-exposure and post-exposure sections of the examination due to the presence of the facilitator. Setting up the staging room differently so that the facilitator was not in the room constantly may have altered the behavior of the participants: however, this factor did not affect the findings as only the degree of distraction caused by mobile device usage was only analyzed during the stimulus section of the examination.

Future Research

Mobile device use is so prevalent in our society, that there is much more to be done to fully understand how these devices play a role in our lives.

Performing a content analysis of what media the participants actually access while utilizing their mobile devices would prove useful in gaining insight to what role second-screening plays in distractibility. Previous research into multi-tasking may have to be reconsidered due to how attached today's youth are to their devices from such an early age. The mobile device could almost be considered a new appendage that may have new and different types of cognitive processing mechanisms to have developed in our brains. Tomorrow's research endeavors into these devices may not yield useful results, unless and until they are carried out in a multi-disciplinary manner. Psychological measures and bio-feedback instrumentation may be needed to fully understand how these devices have

have been incorporated into our daily routines.

Emergent virtual reality technologies have also made mediated experiences much more immersive. Mobile devices are now able to process virtual reality media by using a few relatively inexpensive accessories and downloadable applications. I will become important to study how users integrate this emergent technology into everyday usage, and how can this technology be used as learning tools as well as an entertainment option.

Mobile devices are here to stay, it is incumbent upon us as educators to learn effective ways to use these powerful tools to enhance our youths learning experience, because it is extremely unlikely that we could/or even should deter their use in schools and other learning environments.

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APPENDICES

Appendix A

Survey Instrument Pre-exposure Questionnaire

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please indicate on the scale below the extent to which you agree or disagree with the following statement:

3. I see myself as someone who...

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
is talkative.	○	○	○	○	○
is emotionally stable, not easily upset.	○	○	○	○	○
does a thorough job.	○	○	○	○	○
is depressed, blue.	○	○	○	○	○
is original, comes up with new ideas.	○	○	○	○	○
perseveres until the task is finished.	○	○	○	○	○
values artistic, aesthetic experiences.	○	○	○	○	○
is helpful and unselfish with others.	○	○	○	○	○
is relaxed, handles stress well.	○	○	○	○	○
is considerate and kind to almost everyone.	○	○	○	○	○
is full of energy.	○	○	○	○	○
starts quarrels with others.	○	○	○	○	○
is a reliable worker.	○	○	○	○	○
can be tense.	○	○	○	○	○
is ingenious, a deep thinker.	○	○	○	○	○
makes plans and follows through with them.	○	○	○	○	○
has a forgiving nature.	○	○	○	○	○
tends to be disorganized.	○	○	○	○	○
worries a lot.	○	○	○	○	○

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
likes to cooperate with others.	○	○	○	○	○
tends to be quiet.	○	○	○	○	○
is sophisticated in art, music, or literature.	○	○	○	○	○
is inventive.	○	○	○	○	○
tends to find fault with others.	○	○	○	○	○
tends to be lazy.	○	○	○	○	○
has an assertive personality.	○	○	○	○	○
can be cold and aloof.	○	○	○	○	○
is reserved.	○	○	○	○	○
can be somewhat careless.	○	○	○	○	○
can be moody.	○	○	○	○	○
is sometimes shy, inhibited.	○	○	○	○	○
is curious about many different things.	○	○	○	○	○
does things efficiently.	○	○	○	○	○
remains calm in tense situations.	○	○	○	○	○
prefers work that is routine.	○	○	○	○	○
is outgoing, sociable.	○	○	○	○	○
is sometimes rude to others.	○	○	○	○	○
generates a lot of enthusiasm.	○	○	○	○	○
gets nervous easily.	○	○	○	○	○
likes to reflect, play with ideas.	○	○	○	○	○
has few artistic interests.	○	○	○	○	○
has an active imagination.	○	○	○	○	○
is easily distracted.	○	○	○	○	○
is generally trusting.	○	○	○	○	○

Please indicate on the scale below your attitude towards each of these musical genres?

4. How much do you favor each of these musical genres?

	NOT AT ALL	FAVORS A LITTLE	NEITHER LIKES NOR DISLIKES	FAVORS A LOT	FAVORS STRONGLY	I DO NOT KNOW WHAT THIS MUSICAL STYLE IS
Hip Hop	○	○	○	○	○	○
Folk	○	○	○	○	○	○
Rock	○	○	○	○	○	○
Jazz	○	○	○	○	○	○
Country	○	○	○	○	○	○
Soul	○	○	○	○	○	○
Rap	○	○	○	○	○	○
Easy Listening	○	○	○	○	○	○
R&B	○	○	○	○	○	○
Techno	○	○	○	○	○	○
Classical	○	○	○	○	○	○
Reggae	○	○	○	○	○	○
Pop	○	○	○	○	○	○
Big Band	○	○	○	○	○	○
House	○	○	○	○	○	○
Religious	○	○	○	○	○	○

Other (please specify)

Please indicate on the scale below the extent to which you agree or disagree with the following statement:

5. My mobile device is very important to me because…

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
I can feel that I am in control.	○	○	○	○	○
I can use it to connect with others	○	○	○	○	○
It is like communicating face-to-face.	○	○	○	○	○

It allows me to build social capital.	○	○	○	○	○
It allows me to surf the internet for things that I am interested in.	○	○	○	○	○
It allows me to expand my social network.	○	○	○	○	○
I can use it to enjoy escaping into a different world.	○	○	○	○	○
I am able to control my interaction with the interface.	○	○	○	○	○
The device is easy to use and explore.	○	○	○	○	○
It can anticipate my needs.	○	○	○	○	○
I get to do a lot of things on it.	○	○	○	○	○
Once I use it, I feel like it is mine.	○	○	○	○	○
I can perform a number of tasks.	○	○	○	○	○
I am able to influence how it looks.	○	○	○	○	○
It allows me to review opinions of others before I make decisions.	○	○	○	○	○
I feel active when I use it.	○	○	○	○	○

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
It allows me to set my preferences.	○	○	○	○	○
It allows me to sort through information and share it with others.	○	○	○	○	○
It is stylish.	○	○	○	○	○
It creates the experience of being present in distant environments.	○	○	○	○	○
I can avoid viewing things that I do not want to see.	○	○	○	○	○
I expect to interact with the system.	○	○	○	○	○
The experience is unusual.	○	○	○	○	○
It helps me immerse myself in places that I cannot physically experience.	○	○	○	○	○

I can specify my needs and preferences on an ongoing basis.	○	○	○	○	○
It allows me to obtain a wide variety of information.	○	○	○	○	○
I know that the content is real and not made up.	○	○	○	○	○
It helps me to skim and check out various links.	○	○	○	○	○
It allows me to link to other pieces of information.	○	○	○	○	○
It responds well to my requests.	○	○	○	○	○
It lets me broadcast my thoughts.	○	○	○	○	○
It allows me to browse freely.	○	○	○	○	○
It is fun to explore.	○	○	○	○	○
It will double-check with me before performing a risky transaction.	○	○	○	○	○

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
It is not a passive interaction.	○	○	○	○	○
It allows me to be in charge.	○	○	○	○	○
It allows me to customize so that I can make it my own.	○	○	○	○	○
It lets me play.	○	○	○	○	○
I am able to influence how it works.	○	○	○	○	○
It allows me to have my say.	○	○	○	○	○
The interface is different.	○	○	○	○	○
It allows me to assert my identity.	○	○	○	○	○
It is new.	○	○	○	○	○
It makes me realize that I am a part of a community	○	○	○	○	○
It is distinctive.	○	○	○	○	○
It is responsive to my commands.	○	○	○	○	○

It gives me comfort to know the thoughts and opinions of others.	○	○	○	○	○
It lets me see things for myself.	○	○	○	○	○
It gives me the power to broadcast to my followers.	○	○	○	○	○
It lets me compare my opinions with those of others.	○	○	○	○	○
It is unique.	○	○	○	○	○
The technology is innovative.	○	○	○	○	○
It features content that is a true reflection of myself.	○	○	○	○	○

	DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
It offers a number of visual aids for more effective use.	○	○	○	○	○
The interface helps me every step of the way.	○	○	○	○	○
I feel like I am able to experience things without actually being there.	○	○	○	○	○
The experience is very much like real life.	○	○	○	○	○

Please indicate on the scale below your attitude towards each of these musical artists?

6. How much do you favor each of these musical artists?

	NOT AT ALL	FAVORS A LITTLE	NEITHER LIKES NOR DISLIKES	FAVORS A LOT	FAVORS STRONGLY	DON'T KNOW THIS ARTIST OR GROUP
Willie Nelson	○	○	○	○	○	○
Mariah Carey	○	○	○	○	○	○
André Rieu	○	○	○	○	○	○
Frank Sinatra	○	○	○	○	○	○
Public Enemy	○	○	○	○	○	○

The Unthanks	○	○	○	○	○	○
Crazy Frog	○	○	○	○	○	○
Sting	○	○	○	○	○	○
Kid Rock	○	○	○	○	○	○
Diana Krall	○	○	○	○	○	○
Metallica	○	○	○	○	○	○
Miley Cyrus	○	○	○	○	○	○
Duran Duran	○	○	○	○	○	○
The Beatles	○	○	○	○	○	○
Enya	○	○	○	○	○	○
R. Kelly	○	○	○	○	○	○
Underworld	○	○	○	○	○	○
Dolly Parton	○	○	○	○	○	○
Steely Dan	○	○	○	○	○	○
Faith Hill	○	○	○	○	○	○
Ginuwine	○	○	○	○	○	○
Snoop Dogg	○	○	○	○	○	○
U2	○	○	○	○	○	○

	NOT AT ALL	FAVORS A LITTLE	NEITHER LIKES NOR DISLIKES	FAVORS A LOT	FAVORS STRONGLY	DON'T KNOW THIS ARTIST OR GROUP
Sizzla	○	○	○	○	○	○
Green Day	○	○	○	○	○	○
Tori Amos	○	○	○	○	○	○
Arthur & Yu	○	○	○	○	○	○
Taylor Swift	○	○	○	○	○	○
Carlos Santana	○	○	○	○	○	○
Outkast	○	○	○	○	○	○
Findlay Napier	○	○	○	○	○	○
The 3 Tenors	○	○	○	○	○	○
Elton John	○	○	○	○	○	○
Madonna	○	○	○	○	○	○
Fiona Apple	○	○	○	○	○	○
Sade	○	○	○	○	○	○
NSYNC	○	○	○	○	○	○
Prince	○	○	○	○	○	○

Van Halen	○	○	○	○	○	○
Kenny G	○	○	○	○	○	○
Culture Club	○	○	○	○	○	○
Shaggy	○	○	○	○	○	○
Moby	○	○	○	○	○	○
Pendulum	○	○	○	○	○	○
Keyshia Cole	○	○	○	○	○	○
Johnny Cash	○	○	○	○	○	○
Amy Winehouse	○	○	○	○	○	○
Kenny Chesney	○	○	○	○	○	○
Whitney Houston	○	○	○	○	○	○
Eminem	○	○	○	○	○	○
Michael Jackson	○	○	○	○	○	○
Ray Charles	○	○	○	○	○	○
Boyz II Men	○	○	○	○	○	○
Christina Aguilera	○	○	○	○	○	○
No Doubt	○	○	○	○	○	○
Barbara Streisand	○	○	○	○	○	○
Spice Girls	○	○	○	○	○	○
Beyonce	○	○	○	○	○	○
The Rippingtons	○	○	○	○	○	○
Pink Floyd	○	○	○	○	○	○
Naughty by Nature	○	○	○	○	○	○
Maria Guinand	○	○	○	○	○	○

Other (please specify)

Please indicate on the scale below the extent to which you agree or disagree with the following statements:

7. I am socially somewhat awkward.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

8. I like to be with people..

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

9. When conversing, I worry about saying something dumb.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

10. I am often uncomfortable at parties and other social functions.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

11. I welcome the opportunity to mix socially with people.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

12. I'd be unhappy if I were prevented from making many social contacts.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

13. I feel inhibited in social situations.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

14. I don't find it hard to talk to strangers.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

15. I am more shy with members of the opposite sex.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

16. I find people more stimulating than anything else.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

17. I have trouble looking someone right in the eye.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

18. I feel nervous when speaking to someone in authority.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

19. I prefer working with others rather than alone.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

20. I feel tense when I'm with people that I don't know well.

DISAGREE STRONGLY	DISAGREE A LITTLE	NEITHER AGREE OR DISAGREE	AGREE A LITTLE	AGREE STRONGLY
○	○	○	○	○

Please indicate on the scale below your attitude towards each of these musical mediums?

21. How much do you favor each of these musical mediums?

	NOT AT ALL	FAVORS A LITTLE	NEITHER LIKES NOR DISLIKES	FAVORS A LOT	FAVORS STRONGLY
FM Radio	○	○	○	○	○
MP3 Player	○	○	○	○	○
Laptop	○	○	○	○	○
Live at Concert Venue	○	○	○	○	○
CD Player	○	○	○	○	○
Cassette Tape	○	○	○	○	○
Vinyl Record	○	○	○	○	○
AM Radio	○	○	○	○	○
Desktop Computer	○	○	○	○	○
Cable TV Music Channel	○	○	○	○	○
Live by Instrument Player	○	○	○	○	○
Subscription Music Channel	○	○	○	○	○

Other (please specify)

Please inform the investigator that you have completed this section of the study.

Survey Instrument Post-exposure Questionnaire

Here are a number of multiple choice questions that pertain to the videos that you have just viewed. Please answer each question to the best of your ability; please answer every question. If none of the options are correct, f you do not remember, or if you don't know use the answer 'N/A':

* 1. Please enter the three digit response ID# that the researcher gave you:

2. In what city was the video *One* shot?

- Berlin
- Paris
- Los Angeles
- N/A

3. Which Spice Girl appeared first in their video *Say You'll Be There*?

- Melanie B. A.K.A. "Scary Spice"
- Victoria Beckham A.K.A. "Posh Spice"
- Melanie C. A.K.A. "Sporty Spice"
- N/A

4. What color was the 1st car in *Say You'll Be There*?

- Olive green
- Blue with white stripes
- Red with white stripes
- N/A

5. Why did Janet write the song, according to a pop-up in the video *Together Again*?

- As a tribute to her brother Michael
- As a tribute to friends that died from AIDS
- As a tribute to her husband
- N/A

6. What family member of U2's lead singer Bono appeared in the *One* video?

- Sister
- Dad
- Mom
- N/A

7. In the *Together Again* video, how were people kept safe from the animals?

- By inserting the animals digitally in editing
- By keeping the animal trainers close by
- By making sure that the animals were fed properly before shooting
- N/A

8. According to a pop-up in the video *One*, who painted the cars?

- An artist named Trabants
- The band's drummer
- The director of the video
- N/A

9. In *Say You'll Be There*, what was the name of the desert where the video was shot?

- The Sahara
- The Mojave
- The Gobi
- N/A

10. What nickname did the dancers give to Janet in the *Together Again* video?

- Mama
- Penny
- Booty
- N/A

11. In the *One* video, why did band member "The Edge" dress in drag, according to a pop-up?

- Because he is a transvestite
- To show the sexual duality inside all of us
- Because no women were available on that day of the shoot
- N/A

12. In the *Say You'll Be There* video, what kind of military vehicle interrupted the shoot?

- A jeep
- A helicopter
- A tank
- N/A

13. According to a *Say You'll Be There* pop-up, what kind of classes did the band take to prep for the video?

- Boxing classes
- Dancing classes
- Martial arts classes
- N/A

14. What was the primary concept of the video*One*, according to a pop-up?

- East and West Berlin can reunite to become one
- Parts coming together as one to form a whole
- One person alone is unbalanced
- N/A

15. In the *Together Again* video, what kind of pet did Janet take with her on her 1989 tour?

- A black panther
- A lion
- A monkey
- N/A

16. What 2 types of weapons do the Spice Girls use in the video*Say You'll Be There*?

- Machine guns and spears
- Rockets and grenades
- Throwing knives and a blaster
- N/A

17. What does the see-saw shown in the video*One* represent, according to a pop-up?

- That we all go through ups and downs in life
- That life can be a playground of fun
- That people are unbalanced when alone
- N/A

18. What was the color of Janet's head covering in the *Together Again* video?

- Blue
- Maroon
- Green
- N/A

19. What kind of seedy place did a pop-up say that U2's*One* video was shot in?

- A gambling parlor
- A drug den
- A brothel
- N/A

20. How many Spice Girls are there, as seen dancing in the*Say You'll Be There* video?

- Four
- Five
- Six
- N/A

21. Where was the *Together Again* video shot, according to a pop-up in the video?

- Southern California
- Tanzania's Serengeti Plains
- On a set in New York City
- N/A

22. Who portrayed the character 'Penny' according to a pop-up in the video*Together Again*?

- Michael Jackson
- Janet Jackson
- LaToya Jackson
- N/A

23. According to a *Say You'll Be There* pop-up, who came up with the alter ego names for The Girls used in the video?

- The Girls themselves
- The video's producer
- The video's director
- N/A

24. What kind of research were the proceeds of the song*One* donated to, according to a pop-up in the video?

- ◯ Suicide prevention
- ◯ Sexual abuse
- ◯ AIDS
- ◯ N/A

25. According to a *Together Again* video pop-up, where was Janet to meet her friends again?

- ◯ In heaven
- ◯ At a zoo
- ◯ At a park
- ◯ N/A

26. Please indicate which video you preferred most:
1 = Most preferred 2 = Somewhat preferred
3 = Least preferred 4 = Didn't prefer any of the videos

- ☐ Janet Jackson: *Together Again*
- ☐ The Spice Girls: *Say You'll Be There*
- ☐ U2: *One*
- ☐ Didn't like any of the videos

27. Please indicate your how well your opinion is represented in regards to Janet Jackson's video*Together Again.*

	VERY MUCH	SOMEWHAT	N/A	NOT SO MUCH	VERY MUCH NOT
While I was viewing the video, activity going on in the room around me was on my mind.	◯	◯	◯	◯	◯
I could picture myself in the scene of the events depicted in the video.	◯	◯	◯	◯	◯
I was mentally involved in the video while viewing it.	◯	◯	◯	◯	◯
After the video ended, I found it easy to put it out of my mind.	◯	◯	◯	◯	◯
The video affected me emotionally.	◯	◯	◯	◯	◯
I found myself thinking of ways the video could have turned out differently.	◯	◯	◯	◯	◯

I found my mind wandering while viewing the video.	○	○	○	○	○
The events depicted in the video are relevant to my everyday life.	○	○	○	○	○
The events depicted in the video have changed my life.	○	○	○	○	○
I still have a vivid mental image of Janet Jackson.	○	○	○	○	○

Demographic Info

28. Enter your age in years

29. How do you prefer to identify in regard to sex?

- ○ Male
- ○ Female
- ○ Prefer to not identify
- ○ Other (please specify)

30. Which of the following categories best describes your employment status?

- ○ Employed, working full-time
- ○ Employed, working part-time
- ○ Employed at a college work study position
- ○ Not employed, looking for work
- ○ Not employed, NOT looking for work
- ○ Retired
- ○ Disabled, not able to work

31. How much total combined money did all members of your HOUSEHOLD earn last year?

- ○ $0 to $9,999
- ○ $10,000 to $24,999
- ○ $25,000 to $49,999
- ○ $50,000 to $74,999

- ◯ $75,000 to $99,999
- ◯ $100,000 to $124,999
- ◯ $125,000 to $149,999
- ◯ $150,000 to $174,999
- ◯ $175,000 to $199,999
- ◯ $200,000 and up
- ◯ Prefer not to answer

32. Ethnic origin (Race): Please specify how you prefer to identify your ethnicity.

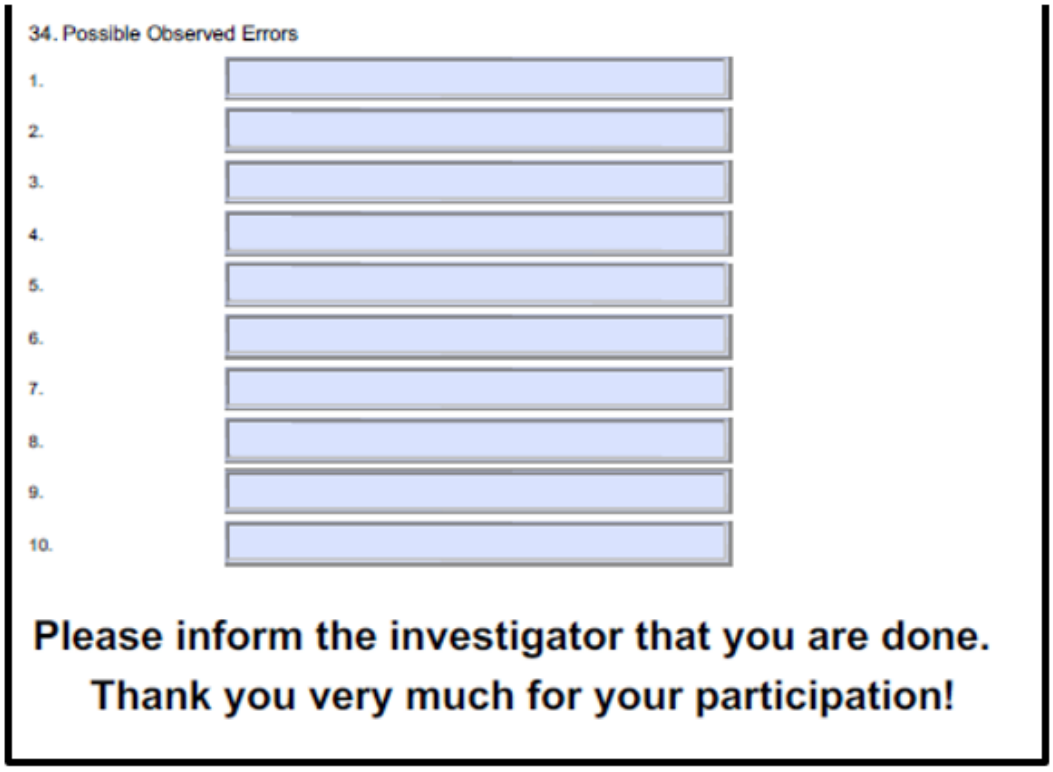
- ◯ White
- ◯ Black or African-American
- ◯ American Indian or Alaskan Native
- ◯ Asian
- ◯ Native Hawaiian or other Pacific Islander
- ◯ From multiple races
- ◯ Prefer not to identify
- ◯ Some other race (please specify)

33. Education level: Please indicate the college class which currently applies to you.

- ◯ Freshman
- ◯ Sophomore
- ◯ Junior
- ◯ Senior
- ◯ Graduate student
- ◯ Other (please specify)

Error Assessment

In each video, there may or may not have been **BLATANT** observable errors in regards to matters pertaining to content, continuity, or production value. For example, the main character may have appeared in the opening scene wearing a scarf, but in subsequent shots (within the same scene), the scarf may have disappeared and then reappeared: this would be an example of a continuity error whereby the script supervisor overlooked this detail. These types of errors are commonly called 'bloopers'. These videos were derived from VHS recordings and there may be minor tracking artifacts visible: these **do not count** as errors to be documented.



Appendix B

Tables

Table 13

Uses & Gratifications Rotated Structure Matrix for PCA with Varimax Rotation (Three Component Solution)

Rotated Component Coefficients					
				Communalities (Three Factors)	Hypothetical Communalities (xxx Factors)
Item/Label	Component 1	Component 2	Component 3		
UGMD29/INFO LINKABLE	**.791**	.147	.001	.647	1.000
UGMD26/VARIETY OF INFO	**.779**	.013	.023	.608	1.000
UGMD28/SKIMS LINKS	**.753**	.224	.041	.618	1.000
UGMD32/BROWSABLE	**.720**	.202	.163	.586	1.000
UGMD5/SURF INTERNET	**.692**	-.149	.372	.640	1.000
UGMD54/VISUAL AIDS	**.647**	.241	.204	.518	1.000
UGMD50/COMPARE OPINIONS	**.622**	.349	.281	.588	1.000
UGMD48/SEE FOR SELF	**.620**	.367	.273	.594	1.000
UGMD13/UTILE	**.618**	-.002	.290	.466	1.000

UGMD33/FUN	**.595**	.294	.345	.559	1.000
UGMD30/RESPONSIVE	**.592**	.406	.184	.549	1.000
UGMD46/RESPOND COMMAND	**.587**	.481	.061	.580	1.000
UGMD52/INNOVATIVE TECH	**.586**	.404	.012	.507	1.000
UGMD18/SHARABLE	**.571**	.177	.380	.501	1.000
UGMD38/PLAYABLE	**.565**	.196	.183	.390	1.000
UGMD11/VERSATILE	**.556**	.184	.221	.392	1.000
UGMD31/BROADCASTABLE	**.524**	.176	.489	.545	1.000
UGMD51/UNIQUE	.312	**.681**	.169	.591	1.000
UGMD41/INTERFACE DIFFERS	.301	**.668**	.137	.556	1.000
UGMD45/DISTINCTIVE	.305	**.644**	.031	.509	1.000
UGMD27/REAL CONTENT	-.025	**.620**	.094	.394	1.000
UGMD55/INTERFACE HELPS	.309	**.589**	.245	.503	1.000
UGMD34 DOUBLECHECKS	.177	**.586**	.227	.427	1.000
UGMD23/ODD EXPERIENCE	-.139	**.576**	.309	.447	1.000
UGMD44/COMMUNITY REAL	.282	**.571**	.460	.618	1.000

UGMD40/SUBMISSIVE	.476	**.563**	.298	.633	1.000
UGMD36/OBEDIENT	.443	**.559**	.254	.573	1.000
UGMD35/NOT PASSIVE	.156	**.538**	.107	.326	1.000
UGMD53/REFLECTS SELF	.353	**.522**	.461	.609	1.000
UGMD4/SOCIAL CAPITAL	.150	.266	**.712**	.599	1.000
UGMD6/EXPANDS NETWORK	.215	.045	**.685**	.518	1.000
UGMD9/EXPLOREABLE	.426	-.088	**.616**	.568	1.000
UGMD1/CONTROL	.272	.155	**.616**	.477	1.000
UGMD7/ALLOWS ESCAPE	.216	.184	**.582**	.420	1.000
UGMD8/INTERACT INTERFACE	.451	.238	**.574**	.590	1.000
UGMD3/FACE TO FACE	-.217	.249	**.570**	.434	1.000
UGMD16/FEELS ACTIVE	.095	.370	**.555**	.453	1.000
UGMD57/LIFELIKE	-.094	.436	**.552**	.504	1.000
UGMD14/DECORATEABLE	.244	.177	**.532**	.374	1.000
Valid N (listwise)	120				

Note. Major loadings for items are bolded.

Appendix C

Figures

Figure 4

BFPI-44 Scale Item Details*

Variable Name	Items (Label)
BFPIEXT	BFPI1 (Talkative), BFPI11 (Energetic), REVEXTBF21 (Rev Quiet), BFPI26 (Assertive), REVEXTBF28 (Rev Reserved), REVEXTBF31 (Rev Stable), BFPI36 (Outgoing), BFPI38 (Enthusiastic)
BFPINEUR	REVNEURBF2 (Rev Stable), BFPI4 (Depressed), REVNEURBF9 (Rev Relaxed), BFPI14 (Tense), BFPI19 (Worrisome), BFPI30 (Moody), REVNEURBF34 (Rev Calm), BFPI39 (Nervous)
BFPICONSC	BFPI3 (Thorough), BFPI6 (Perseverant), BFPI13 (Reliable), BFPI16 (Planner), REVCONSCIBF18 (Rev Disorganized), REVCONSCIBF25 (Rev Lazy), REVCONSCIBF29 (Rev Careless), BFPI33 (Efficient), REVCONSCIBF43 (Rev Distractible)
BFPIOPEN	BFPI5 (Original), BFPI7 (Artistic), BFPI15 (Ingenious), BFPI22 (Sophisticated), BFPI23 (Inventive), BFPI32 (Curious), REVOPENBF35 (Rev Routine), BFPI40 (Reflective), REVOPENBF41 (Rev Inartistic), BFPI42 (Imaginative)
BFPIAGREE	BFPI8 (Helpful), BFPI10 (Kind), REVAGREEBF12 (Rev Quarrelsome), BFPI17 (Forgiving), BFPI20 (Cooperative), REVAGREEBF24 (Rev Judgmental), REVAGREEBF27 (Rev Aloof), REVAGREEBF37 (Rev Rude), BFPI42 (Imaginative)

Note. * Scale and items used as developed by Benet-Martinez and John (1998).

Figure 5. Multiple Regression Model Summary: DoD as DV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.402[a]	.161	-.019	2.48190	.161	.894	14	65	.569

a. Predictors: (Constant), PT TRANSPORTATION SCALE=MEAN(PT2,PT3,PT5,PT6,PT8,PT9,PT10,REVTRANSPT1,REVTRANSPT4,REVTRANSPT7), FEMALE, BFPI NEUROTICISM SCALE=MEAN(BFPI4,BFPI14,BFPI19,BFPI30,BFPI39,REVNEURBF2,REVNEURBF9,REVNEURBF34), BFPI OPENNESS SCALE=MEAN(BFPI5,BFPI7,BFPI15,BFPI22,BFPI23,BFPI32,BFPI40,BFPI42,REVOPENBF35,REVOPENBF41), SandS SOCIABLE SCALE=MEAN(SS2,SS5,SS6,SS10,SS13), YOUTHFUL= UNDER25, U&G REFLECTIVE OF SELF COMPUTE FAC2 = MEAN(UGMD51,UGMD41,UGMD45,UGMD27,UGMD55,UGMD34,UGMD23,UGMD44,UGMD40,UGMD36,UGMD35,UGMD53) (COMPUTE), BFPI EXTRAVERSION SCALE=MEAN(BFPI1,BFPI11,BFPI26,BFPI36,BFPI38,REVEXTBF21,REVEXTBF28,REVEXTBF31), BFPI AGREEABLENESS SCALE=MEAN(BFPI8,BFPI10,BFPI17,BFPI20,BFPI44,REVAGREEBF12,REVAGREEBF24,REVAGREEBF27,REVAGREEBF37), BFPI CONSCIENTIOUSNESS SCALE=MEAN(BFPI3,BFPI6,BFPI13,BFPI16,BFPI33,REVCONSCIBF18,REVCONSCIBF25,REVCONSCIBF29,REVCONSCIBF43), U&G NETWORKABLE COMPUTE FAC3 = MEAN(UGMD4,UGMD6,UGMD9,UGMD1,UGMD7,UGMD8,UGMD3,UGMD16,UGMD57,UGMD14) (COMPUTE), U&G UTILITY COMPUTE FAC1 = MEAN(UGMD5,UGMD11,UGMD13,UGMD18,UGMD28,UGMD29,UGMD30,UGMD33,UGMD31,UGMD32,UGMD50,UGMD38,UGMD46,UGMD... (COMPUTE), SandS SHYNESS SCALE=MEAN(SS1,SS3,SS4,SS7,SS9,SS11,SS12,SS14,SS8REV), ADULT = 26-40

Figure 6. Multiple Regression Model Summary: PAD as DV

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.586[a]	.343	.189	4.06348	.343	2.230	15	64	.014

a. Predictors: (Constant), STIMULUS DOD DURING STIMULUS, U&G REFLECTIVE OF SELF COMPUTE FAC2 = MEAN(UGMD51,UGMD41,UGMD45,UGMD27,UGMD55,UGMD34,UGMD23,UGMD44,UGMD40,UGMD36,UGMD35,UGMD53) (COMPUTE), BFPI EXTRAVERSION SCALE=MEAN(BFPI1,BFPI11,BFPI26,BFPI36,BFPI38,REVEXTBF21,REVEXTBF28,REVEXTBF31), BFPI AGREEABLENESS SCALE=MEAN(BFPI8,BFPI10,BFPI17,BFPI20,BFPI44,REVAGREEBF12,REVAGREEBF24,REVAGREEBF27,REVAGREEBF37), YOUTHFUL= UNDER25, PT TRANSPORTATION SCALE=MEAN(PT2,PT3,PT5,PT6,PT8,PT9,PT10,REVTRANSPT1,REVTRANSPT4,REVTRANSPT7), BFPI OPENNESS SCALE=MEAN(BFPI5,BFPI7,BFPI15,BFPI22,BFPI23,BFPI32,BFPI40,BFPI42,REVOPENBF35,REVOPENBF41), FEMALE, BFPI CONSCIENTIOUSNESS SCALE=MEAN(BFPI3,BFPI6,BFPI13,BFPI16,BFPI33,REVCONSCIBF18,REVCONSCIBF25,REVCONSCIBF29, REVCONSCIBF43), SandS SOCIABLE SCALE=MEAN(SS2,SS5,SS6,SS10,SS13), BFPI NEUROTICISM SCALE=MEAN(BFPI4,BFPI14,BFPI19,BFPI30,BFPI39,REVNEURBF2,REVNEURBF9,REVNEURBF34), U&G NETWORKABLE COMPUTE FAC3 = MEAN(UGMD4,UGMD6,UGMD9,UGMD1,UGMD7,UGMD8,UGMD3,UGMD16,UGMD57,UGMD14) (COMPUTE), U&G UTILITY COMPUTE FAC1 = MEAN(UGMD5,UGMD11,UGMD13,UGMD18,UGMD28,UGMD29,UGMD30,UGMD33,UGMD31,UGMD32,UGMD50,UGMD38, UGMD46,UGMD... (COMPUTE), SandS SHYNESS SCALE=MEAN(SS1,SS3,SS4,SS7,SS9,SS11,SS12,SS14,SS8REV), ADULT = 26-40

Figure 7. Intercoder Reliability Analysis: DoD STIMULUS