You Are Who You Watch: Transportation and Identification Effects on
Temporary Self-Concept

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ABSTRACT
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Transportation and identification are believed to be major moderators in the impact of media consumption on its consumers. Two studies were conducted to examine the effects of transportation and identification on activation of media concepts in the real world lives of media consumers. Study 1 found evidence of strong, positive correlational relationships between transportation, character identification, and real-world media concept activation among frequent video game players. Study 2 indicated that under conditions of high identification, participants temporarily displayed increased activation of trait characteristics, displayed by a character in a film clip, within their self-concept. Supportive albeit inconsistent evidence of a similar role for transportation was also obtained. The sum of the research indicates that media concepts may often spill over into real world situations, and identification and transportation appear to play a significant role in such increased activation.
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INTRODUCTION

Among the most important societal shifts in the last few generations is the ubiquity of the mass media. From magazines to blogs, board games to video games, television to websites, media consumption comprises a massive chunk of the day-to-day lives of most people in the developed world. It allows us access to information, opinion, entertainment, and social connections on a scale and at a rate inconceivable by past generations, and there is no apparent end to the increasing presence of media in nearly every aspect of our lives.

With the steady growth of media has come a groundswell of theoretical and empirical research into the nature of our interactions with the media around us. This is particularly true of entertainment media, which is typically fictional or a dramatized version of factual events. Entertainment media is essentially a series of simulated situations, and a substantial part of the consumer’s enjoyment stems from his or her relative level of absorption into those situations. Nearly everyone has had the experience of a narrative that was so enjoyable or well-crafted that the situations depicted in that narrative began to feel as if they were actually occurring. Additionally, most have experienced characters within a narrative that seemed realistic to the point of, over time, seeming to have personality and tendencies that transcended what had been depicted within the scope of the work itself – in short, to have taken on a life of their own, at least in the mind of the viewer.

The primary aim of this research is to investigate whether consumption of media narratives can lead to an increase in the accessibility of characteristics of that narrative in the
mind of the viewer. In other words, do perceptions of the real world become shaped by the characteristics of the situations and people we see depicted in the media? Further, can these effects extend from abstract, general beliefs about the nature of the world to something as central as the viewer’s self-concept? In what domains and under what conditions is this most likely to occur? I believe two factors, transportation and character identification, to be primary moderators in the relationship between media consumption and activation of media characteristics. More specifically, I predict activation of media characteristics (e.g., attitudes or expected behaviors implied by a media narrative, traits of characters) in the minds of media consumers will be strengthened when transportation and/or identification occur.

**Transportation**

The state of feeling cognitively, emotionally, and imaginarily immersed in a narrative world has been labeled transportation by some media researchers (Gerrig, 1993; Green & Brock, 2000), or presence by others (Schubert, Regenbrecht, & Friedmann, 2000; Lee, 2004). Being highly transported has been compared to the experience of flow (Csikszentmihalyi, 1990) or to some media researchers’ conceptualizations of high involvement (Klimmt & Vorderer, 2003).

Transportation is believed to have an individual difference component, where some individuals are chronically more likely to become transported into a given narrative; however, most research has focused on situational influences. Perceived verisimilitude and familiarity of the situation have both been shown to increase transportation, whereas explicit instructions to focus on structural qualities of the narrative tend to reduce it (Green, 2004). In addition, feelings of processing fluency have also been found to increase transportation,
provided the feelings are attributed to the narrative itself (Vaughn, Petkova, Trudeau, Hesse, McCaffrey, Candeloro, & Smith, 2007).

Transportation is presumed to affect not only the perceived entertainment value of the media, but also the cognitive and emotional responses of the viewer. Individuals who are transported have been found to be more likely to process the messages of the narrative scenario or world via peripheral route processing (Escalas, 2007), with fewer negative cognitive responses and greater affective response (Green, Chatham, & Sestir, in preparation).

Importantly, transportation is also viewed as a strong moderator and mediator of the impact of narratives on attitudes (Green & Brock, 2000). As a reader or viewer of a narrative becomes more immersed in its events, the narrative world, its inhabitants, and its situations begin to feel more real, and the consumer responds both emotionally and cognitively as if they were. Thus, when a simulated world begins to feel “real”, so too do we treat the things that happen within it much as we do stimuli within the real world itself. Over time, we may eventually begin to see the real world through the filter of the media-created worlds into which we feel most transported. This general hypothesis is the linchpin of the proposed research.

If individuals are more likely to absorb the tendencies of the media they are transported into, it seems a reasonable leap of logic to infer that viewing media characters may also lead to an activation of the traits of those characters within the viewers’ own self-concepts. That is, viewers may come to see themselves (at least temporarily) as possessing the same traits as media characters. This can be seen as a more specific reformulation of the general hypothesis stated above. However, it is proposed that transportation alone is not
necessarily sufficient to generate these specific sorts of effects; this effect, I believe, would be increased or decreased by the degree to which identification with characters also occurs.

**Identification**

Identification with media characters, from a theoretical perspective, is something of a slippery term: while it’s fairly self-evident that identification involves a perceived connection between viewer and character, the actual definition of the term has varied from researcher to researcher. Identification has previously been conceptualized as being synonymous with liking (Cohen, 2001) and perceived similarity (Hoffner & Cantor, 1991). However, the most commonly used definition of identification is a process whereby viewers vicariously take the place of a media character and react to his or her experiences as if they were happening to the viewer (Horton & Wohl, 1956; Rosengren & Windahl, 1972). This is the definition that will be utilized for this paper.

Identification is typically viewed as temporary, and subject to fluctuations throughout the media viewing experience (Cohen, 2006). It is also seen as likely that increased identification leads to an increased likelihood of acquiring the behavioral tendencies of the identified character, possibly through increased message involvement and thus higher elaboration (Cohen, 2001), or through a simpler social learning-type mechanism (e.g. Bandura, 1977), where identification leads to greater vicarious impact of rewards experienced by the media character, and thus a greater likelihood of behavioral modeling by the viewer. Identification has also been shown to affect expectancies about behaviors, and through that their adoption: for example, research has shown that children who identified more strongly with characters in alcohol advertisements were more likely to have positive expectancies about drinking behavior, which later predicted actual drinking behavior (e.g. [Citation]).
Austin, Pinkelton, & Fujioka, 2000). Harrison (1997) found that identification with underweight media characters was correlated with a higher incidence of problem eating behaviors.

Identification overlaps conceptually with transportation to a degree: both involve an increase in perceived verisimilitude of some aspect or aspects of a media narrative, and each tends to be associated with increased attitude change. However, while similar, the two are conceptually distinct. Transportation involves a general sense of immersion in a mediated situation or environment, whereas identification is specific to a single character within the narrative. Theoretically, transportation can occur without identification being present (e.g. a strong feeling of immersion without specific character identification occurring), and identification can occur in the absence of transportation (e.g. an inability to “buy” a given narrative but a strong feeling of similarity or vicarious reaction to the actions of a single character). While the two are hardly orthogonal, and often are seen in concert, each operates in an independent manner within a given situation.

There are indications within the literature that transportation and identification are related processes. Schneider, Lang, Shin, and Bradley (2004) found that the addition of a narrative to a video game increased identification, transportation (referred to by the authors as “presence” (Lee, 2004)) and an increased emotional response to the game. Additionally, playing a game with another participant (actually a confederate) has been found to elevate both presence and character identification among game players (Lim & Lee, 2006). Lastly, a strong positive correlation between transportation and identification has been found using written narratives (Green, Garst, & Brock, 2004).
Therefore, there is some evidence of a connection between identification and transportation, but explicit demonstrations of that connection have been rare and somewhat restricted. It is the intent of this research to investigate this connection in both a correlational and experimental paradigm, and assess the role they may play in the activation of media-portrayed concepts within the viewer. It should be noted here as well that it is not believed that transportation and identification are, actually or effectively, synonymous; rather, while they conceptually involve similar feelings and experiences, transportation deals primarily with any sort of perceived immersion or presence, whereas identification specifically refers to immersion in the persona or role of a specific character. Thus, transportation can be present without identification, and identification without transportation, although the latter relationship is significantly less likely.

I additionally propose that identification and transportation serve as moderating factors for the tendency of media consumers to temporarily adopt the personality traits and characteristics of the characters they identify with. Such a connection stands on solid theoretical ground, albeit indirectly: a host of theories have delineated the means and mechanisms by which we learn “lessons” or behaviors through media exposure.

**Social Cognitive Theory**

Social cognitive theory (Bandura, 1986, 2001), an expansion of the well-known social learning theory (Bandura, 1977), holds that individuals tend to model the rewarded behaviors of relevant or salient others. A key change in social cognitive theory is the addition of the capacity for symbolization; social learning theory originally held that the only behaviors that were likely to be acquired through observation were those that were highly similar to the behaviors observed. Social cognitive theory has altered this to account for people’s inherent
ability for abstraction, and thus allows for a greater range of behaviors to be acquired from one observed behavior.

According to social cognitive theory, there are four steps to the symbolic acquisition of behavior. First, the observer must be paying attention to the actor. Second, the observer constructs a cognitive representation of the style of behavior displayed by the actor. If information about the behavior is successfully restructured into symbolic behavioral rules and concepts, it becomes encoded into memory and can be translated into actual potential courses of action. Lastly, if motivation and perceived incentive is sufficient, a behavior modeled upon the encoded rules and concepts is likely to be enacted (Bandura, 2001).

While this theory, coming from the behaviorist tradition, doesn’t explicitly say much about the adoption of traits and characteristics, the “style of behavior” represented in the second step could easily be seen to reflect the general mannerisms and tendencies of the identified character. Additionally, increased identification is highly likely to increase the attention paid to the actor and his or her actions and tendencies, as detailed in the first step of the model. Thus, we see some preliminary support for the hypothesized mechanism in this model.

**Cultivation Theory**

Cultivation theory (Shrum, Burroughs, & Rindfleisch, 2005; Gerbner et al., 2002) also provides some support for these hypotheses. Cultivation theory essentially argues that media consumers come to internalize the messages from their preferred media and apply them to the real world, developing “values, attitudes, beliefs, and perceptions that are consistent with the world as it is portrayed…” within the media they view (Shrum et al., 2004, 183). In other words, we essentially are what we consume, symbolically converting
what we see depicted in media into hypotheses and expectancies about the world in which we live. For example, someone who is repeatedly exposed to violent media could come to develop what has been termed “mean world syndrome” (Gerbner, 1994), wherein the viewer comes to both believe that the world is a more violent and hostile place than it actually is, and perceive aggressive acts as reasonable or normal responses to hostility or conflict.

It is important to note, however, that cultivation theory as currently conceived does not see media consumers as passive sponges, simply thoughtlessly absorbing the lessons of the media they consume. Rather, it holds that media exposure simply reinforces and increases the accessibility of existing attitudes (Shrum, 1999). This implies that cultivated attitudes become “more heuristically available” (Shrum, 1997), and can be overridden or ignored when greater elaboration takes place.

Again, while this theory describes no explicit mechanism analogous to the one proposed here, it does provide indirect support for my hypotheses. Cultivation theory as originally defined relied on a simple mechanism and made little attempt to describe potential moderators, such as identification or transportation; however, a recent study (Shrum, Burroughs, & Rindfleisch, 2005) has indicated an association between transportation and increased television consumption, as well as increased cultivation of materialism among high need for cognition individuals. Cultivation theory essentially argues that people can absorb the worldview of the media world they encounter; this research attempts to detail when and why consumers absorb the characteristics of media characters.
Script Theory

Further support comes from script theory (Huesmann, 1986, 1999), also known as the social-cognitive information processing model. Script theory focuses on the role of cognitive scripts in shaping behavior. Scripts are sequences of behaviors and their expected outcomes; an example would be a typical pattern of interaction with a waitress or cashier, which tends to have the same basic elements across time and situations. Each individual has an idiographic set of scripts developed based on norms, expectations, and past experience (Huesmann, 1986); scripts that are more accessible in a given situation are more likely to be used in determining what behaviors to enact.

In addition to describing the nature of cognitive scripts, script theory also seeks to establish how they are created and what predicts their use. It is posited that scripts are acquired through direct and indirect social learning processes (e.g. Bandura, 1973), that is, through reinforcement and punishment of our own behavior, or observation of the same effects on the behavior of others. If we see others succeed through a given behavior, we are likely to encode behaviors of that sort as effective responses to that class of situation.

Of course, even if a given script is encoded and accessible, it may not be utilized if it is viewed as unacceptable behavior. This is largely shaped by normative beliefs, which are cognitive schemas about the typicality and appropriateness of a given behavior. Frequent exposure to enactment of a given behavioral sequence will typically lead to a perception of that script as normal, and a decreased inhibition to performing it, as well as the previously mentioned spike in accessibility.

Taking the tenets of this theory in conjunction with those of cultivation theory, it could be reasonably argued that repeated exposure to media will lead to a perception of the
ideas conveyed by that media being reflective of the world in general, which in turn would lead to increased accessibility and decreased inhibition toward enacting analogous scripts. It is clear that people do adopt scripts from their preferred media; anyone observing a group of children re-enacting fight sequences from the Mighty Morphing Power Rangers, or adults quoting The Simpsons or Seinfeld in response to day-to-day situations could be certain of that.

Again, though, we see little mention of potential moderators, but it is plausible to assume that transportation, which is presumed to increase the perceived verisimilitude of the media environment, would correspondingly increase the salience of the scripts being enacted. Identification, too, would likely lead to an increase in the salience and perceived appropriateness of the behaviors of the identified character, and correspondingly the underlying personality traits inferred from those behaviors.

**Identification and Self-Identification**

Importantly, much more empirical research has been done on the connection between identification and trait self-identification, defined as an increase, temporary or otherwise, in the belief that one possesses a given trait, in this case those traits displayed by a character the viewer identifies with (McDonald & Kim, 2001). Developmental research has repeatedly found strong, albeit correlational, evidence that children tend to identify strongly with media characters and describe themselves as being highly similar to the characters with whom they identify. These results have been found within the realms of radio (Cantril & Allport, 1971), television (Schramm, Lyle, & Parker, 1961), and video games (McDonald & Kim, 2001). However, there is little experimental evidence to support this relationship, and since all
relevant studies have been run with children, there are serious questions about the
generalizability of these findings to adults.

**Summary and Hypotheses**

In sum, there is considerable theoretical and empirical support for the general
test here: that media consumers, on some levels, view the media
environment as a realistic one, and as such draw inferences about the real world and
behavioral sequences for dealing with it. The specific research proposed here, however, has a
narrower focus and a dependent variable that is one step back (or, behaviorists would argue,
one step forward) from the behavioral responses detailed in the theories above. Instead of
looking at the general effect of media on modeled behavior, I am proposing to look at the
specific effects of perceived immersion and character identification on short-term self-
identification with modeled personality traits. Again, while there is little theoretically to
specifically predict these effects, there is substantial indirect support to logically derive these
hypotheses from what is contained in the literature.

Therefore, two studies were devised to test these hypotheses. First, a study was run to
assess the connection between transportation, identification, and trait acquisition in a real-
world setting. While such a design can only draw correlative conclusions, it will aid in
providing an initial indication that such connections exist among actual media consumers. It
was decided that for the first study the medium of choice would be video games. The
rationale behind this was that video games tend to be more immersive than more traditional
sorts of media, due to the added factor of the consumer controlling much of the action on
screen, and (usually) virtually all of the actions of the main character. I believe that, relative
to other classes of media, playing a video game would enable greater transportation and
identification, increasing the likelihood of obtaining supporting results, should the relationships hypothesized here exist.

Thus, if a sample of self-identified frequent gamers demonstrates significant positive correlations between transportation, identification, and activation of game scripts and characteristics, it will contribute significantly to the external validity of the later, experimental study. Additionally, I expected that participants who play video games more frequently and find them more exciting would also report higher levels of transportation, identification, and concept activation. Lastly, I expected that, due to higher immersiveness in a “behind-the-eyes” first-person setting, participants who play more games from a first-person perspective would experience more transportation and concept activation. However, such circumstances would not increase identification, relative to those who play more third-person games, due to decreased salience of the character caused by the inability to see the character act within a first-person view. This is not a central prediction, but relates to the general principle that greater first-person perspective will increase the perceived realism of the environment by decreasing the psychological distance between player and game.

Study 1, then, dealt only with self-identified frequent gamers. Recruitment was done within the UNC Participant Pool. Transportation, identification, activation of in-game concepts, typical reactions to video game play, and basic personality traits were assessed through a series of short questionnaires.
Study 1

METHODS

Participants. Participants were 74 self-selected frequent video game players. Participants were recruited the Participant Pool at the University of North Carolina at Chapel Hill, and participated in exchange for course credit.

Materials

Media Use Questionnaire. The Media Use Questionnaire is a short questionnaire to identify frequently played games and their characteristics. Participants were first asked to list the five video games they play most frequently. Then, for each game, they were asked to rate how often they play the game, whether the game is typically played from a first- or third-person perspective, and how exciting their subjective game experience tends to be. Each item is rated on a 1-5 or 1-7 Likert-type scale: for perspective, 1 represented “ Entirely first-person perspective”, 3 “Equally first- and third-person perspective” and 5 “Entirely third-person perspective”.

Video Game Questionnaire. This questionnaire consists of 24 questions pertaining to the individual game player’s subjective game experiences, and consisted of subscales of items relating to transportation, identification, and real-world activation of game constructs, as well as several items dealing with emotional response to game play.

Transportation was measured by six items, such as “When you play video games, how natural do your interactions with the video game “world” feel?” Identification was
assessed through six items, such as “When you play video games, how often do you feel or react as if the experiences of the character(s) you control are happening to you?” Game concept activation was measured through eight items, including “Have you ever started visualizing actions or scenes from a video game in a real world situation?” All items were rated on a 1-7 Likert-type scale, save for the emotion item, which consisted of a checklist of experienced emotions.

*Big Five Personality Inventory.* The Big Five Personality Inventory (BFI; John, Donahue, & Kentle, 1991) consists of 44 short personality statements, which the participant rates on a 1-7 scale with 1 representing “Strongly Disagree” and 7 “Strongly Agree”. The BFI is intended to provide a short, self-report measure of the Big Five personality traits.

**Participants.**

Participants were 74 students enrolled in an introductory psychology course at the University of North Carolina at Chapel Hill. All participants received course credit in exchange for their participation.

**Procedure**

When participants arrived at the lab, they were greeted by the experimenter and asked to fill out an informed consent form. Upon completion of the form, they were given a packet consisting of the Media Use Questionnaire, the Video Game Questionnaire, and the Big Five Personality Inventory (labeled the Personality Inventory in the study), and asked to fill them out. Upon completion of the questionnaire, they were given a debriefing form, thanked for their time, and excused.
RESULTS

Four participants failed to properly complete the Big 5 Personality Inventory questionnaire, and were dropped from those analyses, leaving 70 usable participants for that measure. All participants completed all other measures.

Significant correlations were found between Transportation and Identification, $r(74) = .53$, Transportation and Activation, $r(74) = .47$, and Identification and Activation, $r(74) = .53$, all $p < .001$. Additionally, significant correlations were found between Frequency of Play and Transportation, $r(74) = .39$, Identification, $r(74) = .38$, and Activation, $r(74) = .25$, all $p < .05$. Excitement also was significantly correlated with Transportation, $r(74) = .38$, Identification, $r(74) = .31$, and Activation, $r(74) = .34$, all $p < .01$. However, Gameplay Perspective (lower scores equate to more first-person play) did not show the predicted significant negative correlations with Transportation, $r(74) = -.158$, $p = .180$, or Activation, $r(74) = -.175$, $p = .136$; Perspective also showed no relationship with Identification, $r(74) = .006$, $p = .962$.

Correlational analyses were run between Big 5 personality trait scores and transportation, identification, and activation, in order to investigate whether major personality traits might be associated with these variables. However, none of the personality traits were significantly correlated with any of the main variables, all $p > .05$. 
DISCUSSION

On the whole, results were very supportive of the initial hypotheses: a strong correlational connection was obtained between transportation, identification, and real-world activation of in-game concepts, indicating a connection between the three variables in actual game consumers. Unsurprisingly, but still notably, participants who played games more frequently displayed higher levels of transportation, identification, and concept activation. While causality is of course impossible to ascertain, this provides an initial indication that frequent media consumers are more likely to see the real world as similar to the media they consume. A positive correlation between game-related excitement and all three variables of interest was also obtained, indicating that there may be an arousal component to the effects of media consumption. Lastly, while no evidence was obtained for a connection between first-person perspective games and higher levels of transportation and concept activation, there was a directional indication of the posited effects, leaving open the possibility that the current paradigm lacked sufficient power to obtain an existing effect. This remains in the realm of supposition, however.

This is of course a correlational study; and as such any indication of a connection between the relevant variables is tenuous at best, subject to any number of pre-existing confounds. It is also important to note that many of the items measuring activation of game concepts in the questionnaires are somewhat broader than the conception proposed in the initial hypotheses. This was done to increase the likelihood of uncovering what significant relationships might exist between the general variables, in the interest of later demonstrating
more specific connections in a more controlled paradigm. However, results were promising, and this leads to the next logical step: to attempt to obtain convergent results in an experimental setting. If a randomly assigned, controlled paradigm can demonstrate that inducing higher levels of transportation or identification will lead to activation of character-relevant personality traits, then much stronger conclusions can be drawn.

Study 2

For the second experimental study, film clips were utilized to measure the effects of interest. This was done for both theoretical and pragmatic reasons. First, the effects proposed are believed to be general to all media to the extent that the media produces transportation and identification; if the effects seen in Study 1 for video game players can be replicated in Study 2 with movie viewers, it will provide greater support for the generality of the effect. Pragmatically, after investigating conventional video games, it was discovered that most current video games either contain little content that indicates character traits, or contain a great deal of personality-based character content, but leave that content open-ended, with the player making nearly all of the behavioral choices that display trait behaviors. This means that the character’s personality is both highly plastic and heavily yoked to the choices of players, an unacceptable confound for this paradigm.

With this in mind, Study 2 was designed. In Study 2, participants watched one of several video clips; each clip had been pre-screened to ensure it was seen as containing one primary character who displayed multiple clear personality traits. Trait activation was measured through a pre- and post-stimulus administration of a task designed to assess trait self-identification. The primary independent variables were explicit instructions designed to
induce higher (or lower) levels of transportation and identification in participants. After the clip and all primary dependent measures were completed, participants filled out manipulation checks to assess the success of the transportation and identification manipulations. Activation of character traits was measured through a pre- post- administration of a “Me Not-Me” type task. A Me Not-Me task asks participants to view a series of trait words on a computer screen and press one of two keyboard keys to identify that trait as a “Me” trait – one that describes them as a person – or a “Not-Me” trait – one that does not describe them. Participants are instructed to do so as quickly as possible; the primary variable of interest on this task is the categorization of the trait, and reaction time for each item.

On the Me Not-Me task, main effects for transportation and identification are expected, such that participants in the high-transportation and high-identification conditions are expected to display responses consistent with the temporary accessibility of character traits: namely, significantly quicker responses for character traits identified as Me traits, and significantly slower reaction time for character traits identified as Not-Me traits, relative to the pretest scores. These effects should occur only for traits seen as central to the character’s personality, and not for traits viewed as not being possessed or displayed by the character. Alternately, in some cases character traits may shift from the Not-Me to Me category, but this is expected to be a small proportion of cases. A transportation x identification interaction could potentially occur, but is not a primary prediction of this study, as transportation and identification are expected to likely have only independent effects on the data.
METHODS

Participants

One hundred and twenty-seven undergraduates, enrolled in an introductory psychology class at UNC-Chapel Hill, took part in this study.

Materials

*Me/Not-Me Task.* The Me/Not Me task is primarily a reaction time task, wherein the participant is shown a series of 19 trait words and asked to press one key for traits they believe describe them, and another for traits they believe do not describe them. The variables of interest are the classification of each item, and the speed at which it is chosen. This is the primary dependent measure for Study 2.

*Transportation/Identification Instructions.* Transportation and identification were manipulated by means of explicit written instructions. Participants were asked, while viewing a movie clip, to either focus on the color scheme used in the movie clip (low transportation) or to imagine themselves to be a part of the clip itself (high transportation). The instructions additionally stated that participants should imagine themselves to be either the main character of the clip (high identification) or an extraneous observer (low identification). Please see Appendix A for the scripts that comprised this manipulation.

*First Manipulation Check.* At the end of the Transportation/Identification Instructions, participants were asked to verify that they had read and understood the instructions by reading a short summary of the requested viewing focus and circling “Yes” to state that they understood. For example, in the high transportation/high identification
conditions, this item stated, “I understand that my job today is to watch the events of the movie clip as if I was the main character of the clip (circle one)”.

**Movie Questionnaire.** The Movie Questionnaire was designed to assess individual reactions to the film clip, as well as serving as a manipulation check. It consists of 21 questions assessing transportation, identification, and perceived moral valence of the character. Eight items assessed transportation, such as “I could picture myself in the scene of the events shown in the movie.”, and “While I was watching the movie, activity going on in the room around me was on my mind” (reverse scored). These items had a Cronbach’s alpha of .620. Three items, such as “When watching the movie clip, I wanted (Character name) to succeed in achieving his/her goals.” were used to assess character identification. These items had a Cronbach’s alpha of .794. Additionally, the questionnaire contained two dummy items addressing the “low transportation” conditions – these items asked participants about their perceptions of the “color scheme” of the clip. A final item asked participants if they had previously seen the clip, or the movie it was from. Each item was rated on a 1-7 Likert-type scale, with the exception of the “previously seen” item, which was a simple yes or no response. Anchor points on the Likert-type items varied from item to item; the full questionnaire is appended for further reference.

**Character Trait Questionnaire.** This questionnaire consisted of 19 items, matching the 19 items used for the Me/Not-Me Task. Participants were asked to what extent they believed the main character of the clip possessed each trait. Traits were rated on a 1-7 Likert-type scale, with 1 being “Not at All”, 4 being “Somewhat”, and 7 being “Very Much”. The full questionnaire is appended for further reference.
For the purposes of analysis, traits for each clip with a mean pretest rating of 4.5 or higher were classified as Character-Relevant Traits; traits rated as 3.0 or lower were classified as Character-Irrelevant Traits (Note: the range for Character-Relevant Traits is slightly broader due to a general positive skew in trait ratings overall, and several traits falling just below the 5.0 cutoff originally used). Traits with average ratings between 3.0 and 4.5 were discarded from later analyses. Each clip had between 3 and 7 traits in each category. The mean number of Relevant Traits for each clip was 4.0, and 4.5 for Irrelevant Traits.

*Film clips.* Four film clips were used as stimuli in this experiment. Clips were pretested to determine whom viewers believe to be the primary character in each clip, as well as the traits displayed by each character and the valence of his or her personality. The clips used for this study were from the movies “Fight Club”, “City of Angels”, “American Psycho”, and “There’s Something About Mary”. Each clip was between 7 and 10 minutes long, and a single character was the focus of each. Summaries of each clip are included in Appendix D.

The traits rated as character-relevant for the “American Psycho” clip were Arrogant, Intelligent, and Selfish. For the “Fight Club” clip, the relevant character traits were Friendly, Helpful, Intelligent, Loving, Pleasant, and Trustworthy. The primary character in the “City of Angels” clip was seen as Friendly, Helpful, Humorous, Intelligent, and Loving. The relevant character traits for the “There’s Something about Mary” clip were Friendly, Intelligent, and Outgoing.
Procedure

Prior to each experimental session, condition was randomized by means of a coin flip procedure. Upon arrival at the lab, participants were greeted by the experimenter and given an informed consent form to read and sign. They then were escorted to a laboratory booth where they were given instructions on the Me/Not-Me task. The experimenter additionally gave a verbal explanation of the nature of the task. After 16 practice trials dealing with basic physical characteristics (i.e., “tall”) and behavioral tendencies (i.e., “punctual”), participants were left alone to complete the task.

When the initial administration of the Me/Not-Me task was complete, participants were given one form of the transportation/identification instructions to read. They were then given the first manipulation check, to ensure that they understood the directions and the perspective they were asked to take. Participants were then left alone to view the movie clip.

Following the clip, participants were administered the Me/Not-Me task again, with a brief practice period to ensure they recalled how to perform the task. Upon completion of the second Me/Not-Me task, participants were given the Movie Questionnaire to complete. Once this was complete, participants were debriefed, thanked for their time, and excused from the lab.
RESULTS

Participants. Nine participants were dropped from analyses due to extreme data responses or equipment failure. Of these, 7 had more than 50% “crossover” items (rated as Me on one administration and Not-Me on the other), indicating either random responses, inattentiveness to stimuli, or deliberate alteration of response from pre- to post-stimulus administration (to compare, the remainder of the sample had approximately 6% crossover items). 2 participants experienced technical difficulties and could view but not hear the movie clips. Thus, 118 participants were included in the final analyses.

Manipulation check. Results from the Movie Questionnaire supported the effectiveness of the Clip Viewing Instructions in inducing transportation and/or identification. Participants in the transportation-inducing conditions reported significantly higher levels of transportation ($M = 5.43; SD = .64$) than participants who were not ($M = 5.15; SD = .75$), $F(1,114) = 4.63, p = .033$. Participants in the identification-inducing conditions reported significantly higher levels of identification ($M = 5.13; SD = 1.04$) than those who were not ($M = 4.29; SD = 1.42$), $F(1,114) = 12.65, p = .001$. Neither manipulation had a significant effect on the other variable’s scale, and there was no significant transportation x identification interaction on either scale.

Me/Not-Me Task. As the hypotheses predicted significant effects only on traits possessed by viewed characters, trait data was used to classify and evaluate scores on the Me/Not Me Task. There were two primary sources of such data: pretest trait rating averages for each clip, and individual trait ratings obtained from each participant after completing the
primary tasks. To obtain a more comprehensive look at the results, each method was used to separately analyze the data, and will be discussed in turn.

**Primary Analyses.** As predicted, there was a main effect for Identification on reaction time changes in Character-Relevant Traits; this was true both for Relevant Traits rated as Me traits, $F(1, 111) = 11.027, p < .001$, and Relevant Traits rated as Not Me traits, $F(1, 31) = 7.064, p = .012$. The pattern of effects matched predictions: participants in the high Identification condition showed faster reaction times on Character-Relevant Me traits, relative to those in the low Identification condition ($Ms = -166.94$ ms; SD = 217.83, -9.13 ms; SD = 274.38, respectively). For Character-Relevant Not Me traits, high Identification participants became slower to rate those traits from pre- to post-test, relative to those in the low Identification condition ($Ms = 145.71$ ms; SD = 327.62, -214.67 ms; SD = 397.14, respectively). All cell means for this analysis are displayed in Tables 1 and 2. Analogous effects were not present for Character-Irrelevant Traits rated as Me traits, $F(1,33) = .018, p = .895$, or for Irrelevant Traits rated as Not-Me traits, $F(1,113) = .124, p = .725$.

The prediction of a main effect for Transportation was not supported by the data: Transportation had no significant effect on Character-Relevant Me traits, $F(1,111) = .710, p = .401$, or Character-Relevant Not-Me traits, $F(1,31) = 2.291, p = .140$. The pattern of means for Transportation also did not fully match the predicted pattern: while high Transportation participants became quicker to identify Character-Relevant Me traits relative to low Transportation participants ($Ms = -104.80$ ms; SD = 225.55, -64.21 ms; SD = 288.72, respectively), they also became quicker to identify Character-Relevant Not-Me traits, relative to low Transportation participants ($Ms = -168.63$ ms; SD = 262.98, 12.11 ms; SD = 489.88, respectively). There was also no effect of Transportation on either Character-Irrelevant Me
traits, $F(1,33) = .247, p = .622$, or Character-Irrelevant Not-Me traits, $F(1,113) = 1.919, p = .170$.

There was no significant Transportation x Identification interaction for either Character-Relevant Me traits, $F(1,111) = 1.219, p = .272$, or Character-Relevant Not-Me traits, $F(1,31) = 1.124, p = .297$.

*Idiographic Trait Ratings.* A separate battery of analyses was run using each individual participant’s ratings of character trait data for the movie clip they watched. Traits rated as a 6 or 7 on the 1-7 rating scale were classified as Character-Relevant Traits; those rated as 1 or 2 were classified as Character-Irrelevant Traits.

*Primary Analyses.* As predicted, there was a main effect for Identification on reaction time changes in Character-Relevant Traits; this was true both for Relevant Traits rated as Me traits, $F(1, 99) = 4.523, p = .036$, and Relevant Traits rated as Not Me traits, $F(1, 55) = 4.008, p = .050$. The pattern of effects matched predictions: participants in the high Identification condition showed faster reaction times on Character-Relevant Me traits, relative to those in the low Identification condition ($Ms = -135.81$ ms; SD = 220.24, -21.05 ms; SD = 306.09, respectively). For Character-Relevant Not Me traits, high Identification participants became slower to rate those traits from pre- to post-test, relative to those in the low Identification condition ($Ms = 119.35$ ms; SD = 402.41, -106.25 ms; SD = 453.27, respectively). All cell means for this analysis are available in Tables 3 and 4. Analogous effects were not present for Character-Irrelevant Traits rated as Me traits, $F(1, 76) = .186, p = .667$, or for Irrelevant Traits rated as Not-Me traits, $F(1,102) = .000, p = .997$.

The prediction of a main effect for Transportation was partially supported by the data: Transportation had no significant effect on Character-Relevant Me traits, $F(1,99) = .000, p = .
.997, but did have a significant effect on Character-Relevant Not-Me traits, $F(1,55) = 4.757$, $p = .033$. The pattern of means for Transportation did not fully match the predicted pattern: while high Transportation participants became slower to identify Character-Relevant Not-Me traits relative to low Transportation participants ($Ms = 126.90$ ms; $SD = 464.18$, $-120.34$ ms; $SD = 391.91$, respectively), they became only very slightly quicker to identify Character-Relevant Me traits, relative to low Transportation participants ($Ms = -78.80$ ms; $SD = 292.76$, $-72.67$ ms; $SD = 256.89$, respectively). There was also no effect of Transportation on either Character-Irrelevant Me traits, $F(1,76) = .110$, $p = .741$, or Character-Irrelevant Not-Me traits, $F(1,102) = .445$, $p = .506$.

There was no significant Transportation x Identification interaction for Character-Relevant Not-Me traits, $F(1,76) = .758$, $p = .387$. The interaction for Character-Relevant Me traits approached, but did not reach, significance, $F(1,99) = 3.857$, $p = .052$. This interaction appears to be driven by the low transportation/low identification ($M = 28.74$ ms; $SD = 223.13$), and low transportation/high identification ($M = -186.25$ ms; $SD = 248.06$) cells. Scores within the high transportation cells were roughly equal, but identification had a much stronger effect within the low transportation cells.

A separate univariate analysis of variance was conducted under each methodology to assess the impact of Movie Clip as a factor. There was no significant main effect between Movie Clip and any dependent variable under either method of analysis. There was, however, a significant Movie x Transportation interaction for Character-Relevant Traits using pretest information, such that high transportation had a substantially larger effect on reaction times for the “American Psycho” and “Fight Club” clips, relative to the “City of Angels” and
“There’s Something About Mary” clips. This may help explain why transportation was not a significant main effect on this variable.

Crossover Items. A small proportion of the total items were “crossover” items, where participants rated a trait as “Me” on one administration, and “Not Me” on the other. A secondary prediction of this study was that, when under high transportation and/or identification, participants would crossover from “Not Me” to “Me” for Character-Relevant Traits more often than the reverse. To test this, a chi-square test was run on crossover items for Character-Relevant, and for comparison purposes, Character-Irrelevant traits. Idiographic data were used for all crossover item analyses.

For Character-Relevant Traits, identification led to a significantly greater proportion of Not-Me to Me crossover items: under low identification, 7 out of 17 items (41.2%) crossed in this direction, and under high identification, 13 out of 17 items (76.5%). As predicted, the chi-square test for Identification was significant, $x^2 (1) = 4.37, p = .037$. This test was not significant for Character-Irrelevant Traits, $x^2 (1) = 3.46, p = .063$. While this result approaches significance, it is worth noting that the majority of crossovers went from Me to Not-Me items – under low identification, 12 out of 22 items (54.5%) crossed from Not-Me to Me, whereas under high identification only 8 out of 28 items (28.6%) crossed in this direction.

The same effects held true for transportation: low transportation participants crossed over from Not-Me to Me on 6 out of 16 total items (37.5%). High transportation participants crossed over from Not-Me to Me on 14 out of 18 items (77.8%). As predicted, a chi-square test for Transportation was significant, $x^2 (1) = 5.67, p = .017$. This test was not significant for Character-Irrelevant Traits, $x^2 (1) = 1.39, p = .239$. 
DISCUSSION

The results of Study 1 indicated strong correlational relationships between transportation, identification, and activation of real-world concepts in frequent media consumers. Study 2 attempted to focus these results into a narrower area of inquiry: the potential causal effects of transportation and identification on temporary activation of traits displayed by characters in a media narrative. Results were overall supportive for identification, but mixed for transportation. Identification showed a strong causal relationship with trait activation: participants who received instructions to identify with a primary character became quicker to identify “Me” traits, but slower to identify “Not-Me” traits, relative to those not given such directions.

The effects of transportation, however, appeared much weaker – in 3 of the 4 tests of interest, receiving transportation-inducing instructions was not a significant predictor of trait activation. Further, the pattern of means in the one test that did achieve significance – Character-Relevant Not-Me traits using idiographic data – was the opposite of the mean pattern for the analogous test using pretest data. This may be attributable to a lack of overlap between pretest and idiographic rating data (63.9% of trait items rated as Character-Relevant by individual participants were not part of the group collectively rated as Character-Relevant during the pretest), transportation instructions affecting the traits seen as character-relevant, or any number of competing explanations. Coupled with the real possibility of alpha inflation with multiple tests, like those run here, the most prudent conclusion is to assume no definitive relationship exists in this paradigm.
A moment should be taken to discuss perhaps the most curious finding of Study 2: the nearly significant Transportation x Identification interaction for Character-Relevant Me traits using idiographic data. While the interaction term was not significant, it was extremely close to the .05 threshold, and merits a closer look. Again, the cells that appear to drive this interaction are the low transportation/low identification ($M = 28.74$ ms (223.13)), and low transportation/high identification ($M = -186.25$ ms (248.06)) cells. This seems to be indicative of a strong effect for identification within the low transportation condition - again, however, this differs from the pattern of means using pretest data, where no such effect was discernable and the interaction term did not approach significance. Additionally, no such effect was apparent for any of the other variables of interest.

Finally, although the sample size was considerably smaller, evidence was found to indicate that transportation and identification each increase the likelihood of a shift in trait ratings from Not- Ме to Ме items. If this finding is replicable, it strengthens the previous results by indicating that, in some cases, exposure to media characters may not only affect trait activation in terms of faster or slower accessibility, it may temporarily change the categorization of some traits in the self-concept. This is a finding with substantial implications; however, additional study of the existence and extent of this effect is necessary before any further conclusions can be drawn.
GENERAL DISCUSSION

The research described here helps to fill in an important gap in existing research on media effects. While many major theories relevant to media consumption have implied that consumers might, at least temporarily, come to adopt the perceived characteristics and traits of admired and identified characters, the specific question has yet to be answered in an empirical framework. This research has provided an initial demonstration of these effects, and can provide initial support to the general hypothesis of media trait activation, as well as beginning to delineate a mechanism by which such trait activation can take place.

This research has sought to ascertain connections between transportation, character identification, and the activation of media characteristics in media consumers. For the most part, results were supportive. Study 1 demonstrated strong positive correlations between transportation, identification, and real-world activation of game concepts in frequent video game players, as well as a strong positive relationship between frequency of play and all three. Game-related excitement also was a strong predictor of transportation, identification, and activation of game concepts, indicating a potential arousal component as well.

While results from Study 2, as discussed above, are mixed, the findings appear to overall be strongly supportive of a causal connection between identification and character trait activation. This provides a promising initial indication of circumstances under which media characteristics can be activated in viewers. While identification has been shown to promote the perception of similarity between character and viewer (Hoffner & Cantor, 1991),
this research establishes that the perception of similarity is at least temporarily accompanied by a shift in self-concept toward the traits of the character.

This finding opens up a potentially fruitful line of inquiry: if, at least in some cases, media characteristics are activated in something as central as the self-concept of viewers, it is possible that media effects could manifest themselves in nearly any conceivable realm of psychological function.

Transportation did not consistently show such a relationship. This null effect may be attributable to some combination of several potential explanations. The first and most obvious is that transportation has no independent effect on character trait activation. This is a distinct possibility: the only clear evidence for such a connection within this research is the correlational results of Study 1, which used a much broader class of dependent variable. It may be that transportation’s influence on that broader class does not translate specifically to character trait activation. Transportation is typically seen as a general cognitive state (Green & Brock, 2000), whereas identification is generally more character specific (Rosengren & Windahl, 1972). It may well be that the nature of the dependent measures was simply more conducive to eliciting identification effects than transportation effects.

Additionally, it is possible that the instructions for transportation may have seemed confusing or vague to participants, leading to a focus that did not elicit the same pattern of response as the identification instructions. The transportation instructions were general to the clip as a whole, whereas the identification instructions were specific to the character. While the manipulation check did support the effectiveness of the instructions at inducing transportation, it is possible that the ambiguity of the manipulation, relative to the clearer identification manipulation, led to transportation instructions causing less focus on the
character, and therefore less activation of character traits. Followup research to investigate the independent effects of transportation on trait activation with a different manipulation could be useful in understanding if the effect is in fact apparent or not.

Limitations

The findings that have been obtained by the research are not without their caveats. First, questions may be raised about the generalizability of effects. The hypotheses of this document purport to apply to media consumption of all sorts, yet the actual paradigm studied only two media modalities, one based solely on self-report, and the other consumed in a controlled laboratory environment that differs from real-world consumption. Obviously, findings that arise from such a setup may suffer from a variety of confounds that cast doubt on their applicability to other media products or domains.

This objection is, of course, a legitimate one; external validity of the stimulus is a major concern within media research, as media comprises a greater range of products, genres, and modalities than ever before. Further research across a variety of modalities is necessary before conclusions of any certainty can be drawn. Also, as mentioned in the introduction, it is believed these effects will be largest within more interactive types of media such as video games. However, I believe the mechanisms found herein to be general and to be likely to manifest under any circumstances where transportation or identification occurs in the viewer. Again, a definitive conclusion on the generalizability of the findings is beyond the scope of this research, but what has been found is a promising indicator within the realms to which it is restricted.
Future Directions

These results not only aid our understanding of the mechanism by which individuals may temporarily assume the traits of media characterizations, but also open the door to a vast, untapped area of research. If transportation and identification are indeed the major media moderators that they are presumed to be, it is likely that they can be linked to virtually any major media effect, from script and behavioral acquisition to cultivation-type attitudes to media-based aggression research. The array of potential followup studies to ascertain the breadth and depth of transportation effects is virtually limitless.

More pertinent to the hypotheses of this paper, further studies can and should be run to delineate the size and breadth of trait activation effects as well. First and foremost, the external validity question should be addressed, through a series of studies examining trait acquisition in different genres of video games and different types of media entirely. While it is posited here that video games are the media modality in which trait acquisition is most likely, it is believed that the same effects should hold in other sorts of media as well, albeit to a lesser degree. Different forms of dependent variables and manipulations should be utilized as well, especially given the possibility of issues with the transportation manipulation in Study 2.

The arousal component described in Study 1 also provides a fruitful avenue for additional research. Correlationally, it appears that media-induced excitement promotes transportation, identification, and the activation of character traits; theoretically, arousal could causally promote each of these as well. Further research would be needed to fully investigate this question.
Next, while the research described here attempts to measure temporary activation of traits, it is possible that repeated exposure to a favorite identified character could lead to chronic activation of those same traits, leading to a deep-seated change in the overall self-concept. Longitudinal research would contribute to answering this question.

In addition, one of the most intriguing aspects of video games and other sorts of “new media” is that as the sophistication and technological resources of media creators increases, typical levels of transportation could become higher and higher. A recent study has found that newer, more graphically sophisticated video games produce higher levels of presence, involvement, and arousal than analogous, less technologically sophisticated older games (Ivory & Kalyanaraman, 2007). Further, while anecdotal stories of individuals “losing themselves” in a game have existed since the dawning of the medium, newer games are immersing their players to a point heretofore unseen, to the point that a phenomenon labeled “video game addiction” is becoming increasingly used and accepted by legitimate researchers and practitioners (Marney & Gentile, 2003). While the accuracy of such a diagnosis is questionable, it is obvious that the likelihood and degree of immersion in newer games has increased substantially. Thus, the effects of extremely high levels of transportation can provide a rich vein of potential research. For instance, while evidence is again largely anecdotal, it appears that many avid players of popular online games play the games to the exclusion of much or, in extreme cases, nearly all of their extra-game lives. It may well be that to the player, the game world appears so rich and vivid that transportation is near-total; as such, the real world may appear dull and mundane by comparison. If this is the case, extreme levels of assimilation of game and character traits and characteristics may in fact lead to contrast-type effects, where the game begins to seem more real than reality itself.
Conclusion

In short, while transportation and identification are conceptually a large piece of the media effects puzzle, empirically very little has been done to link them to these media effects. This research has attempted to begin to fill in those blanks by examining the impact of transportation and character identification on the temporary activation of character traits within the self-concept of media consumers. While the implications of these two studies unto themselves are limited in scope, they can, if successful, open the door to a fruitful area of research and a deeper understanding of the mechanism by which we can become what we consume.
Appendix A: Transportation/Identification Manipulation for Study 2

Low Trans x Low ID

**Movie Interpretation: Visual Perception**

Many types of visual media, including movies, use different color schemes to enhance the story or the mood they are trying to create. We are interested in how well individuals can perceive the color schemes of a movie clip and what effects that might have on their opinion of themselves.

Today, we are asking you to watch a short movie clip, and while watching it, focus on the types of color schemes and patterns used by the filmmakers. These color schemes could be in the background, in the characters’ clothing, or in the general “tinge” of a scene.

Your job, while you are viewing, is to think carefully about the sort of color scheme used by the filmmakers and how it might be being used in the narrative.

Please verify that you understand your task by answering the question below:

I understand that my job today is to focus on the color scheme used in the movie clip and focus on how the filmmakers might be using it to enhance the narrative (circle one):

YES  NO

If you answered YES, please go on to the next page. If you answered NO, please read the instructions again. If you still have questions, please raise your hand and wait for the experimenter to come to you to answer your question.
Movie Interpretation: Perceiving Realism

Many types of visual media, including movies, use vivid characters with strong personalities to try to create a sense of “being there” for the viewer. We are interested in how well individuals can place themselves into a narrative, viewing the events as if they were an observer within the movie itself.

Today, we are asking you to watch a short movie clip, and while watching it, focus on the events that occur as if you were an observer inside the movie itself. Imagine yourself as a “fly on the wall”, watching all the characters interact with one another.

Your job, while you are viewing, is to carefully watch the events that occur as if you were an independent observer of the narrative.

Please verify that you understand your task by answering the question below:

I understand that my job today is to watch the events of the movie clip as if I was watching the events from within the movie itself (circle one):

YES  NO

If you answered YES, please go on to the next page. If you answered NO, please read the instructions again. If you still have questions, please raise your hand and wait for the experimenter to come to you to answer your question.
Low Trans x High ID

**Movie Interpretation: Visual Perception**

Many types of visual media, including movies, use different color schemes to enhance the story or the mood they are trying to create. We are interested in how well individuals can perceive the color schemes of a movie clip and what effects they believe those schemes might have had on characters within that movie clip.

Today, we are asking you to watch a short movie clip, and while watching it, focus on the effect the color schemes and patterns used by the filmmakers might have on characters within the clip. These color schemes could be in the background, in the characters’ clothing, or in the general “tint” of a scene. Try to put yourself in the place of the main character from the narrative and think about how the color scheme of the surrounding environment could affect his or her thoughts, emotions, and actions.

Your job, while you are viewing, is to imagine yourself to be the main character in the clip. Think carefully about the sort of color scheme used by the filmmakers, and how the scheme could affect the main character in the clip.

Please verify that you understand your task by answering the question below:

I understand that my job today is to imagine I am the main character in the clip, focus on the color scheme used in the clip and think about how it might affect the main character (circle one):

YES  NO

If you answered YES, please go on to the next page. If you answered NO, please read the instructions again. If you still have questions, please raise your hand and wait for the experimenter to come to you to answer your question.
Movie Interpretation: Perceiving Realism

Many types of visual media, including movies, use vivid characters with strong personalities to try to create a sense of “being there” for the viewer. We are interested in how well individuals can place themselves into a narrative, viewing the events as if they were the main character within the movie itself.

Today, we are asking you to watch a short movie clip, and while watching it, focus on the events that occur as if you were the main character inside the movie itself. Imagine yourself to be that main character, experiencing the situation and interacting with the other characters as that person.

Your job, while you are viewing, is to carefully watch the events that occur as if you were the main character of the narrative.

Please verify that you understand your task by answering the question below:

I understand that my job today is to watch the events of the movie clip as if I was the main character of the clip (circle one):

YES  NO

If you answered YES, please go on to the next page. If you answered NO, please read the instructions again. If you still have questions, please raise your hand and wait for the experimenter to come to you to answer your question.
Appendix B: Questionnaires from Study 1

Media Use Questionnaire

Please name the five video games you currently play most often. If you play less than five games regularly, list as many as you do regularly play.

1.) __________________________________________
2.) __________________________________________
3.) __________________________________________
4.) __________________________________________
5.) __________________________________________

For each of the questions below, please circle the number on the scale that best represents your response.

Please write the name of the video game you listed in slot #1:

___________________________________________

1.) How often have you played this game over the past three months? (Extremely often means several hours a day every day or two, on average)

1                  2                  3                  4                  5                  6                  7
Rarely               Extremely
Often

2.) Is this game typically played from a first-person (you see the game through the eyes of the character you control) or a third-person (you see the game and the characters from a camera angle above or behind them) perspective?

1 2 3 4 5
Entirely       Equally First-       Entirely
First-Person   and Third-Person   Third-Person
3.) How exciting do you find this game to be?

1 2 3 4 5 6 7
Not at all Exciting Extremely
Exciting

Please write the name of the video game you listed in slot #2:

___________________________________________

1.) How often have you played this game over the past three months? (Extremely often means several hours a day every day or two, on average)

1 2 3 4 5 6 7
Rarely Extremely
Often

2.) Is this game typically played from a first-person (you see the game through the eyes of the character you control) or a third-person (you see the game and the characters from a camera angle above or behind them) perspective?

1 2 3 4 5
Entirely Equally First- Entirely
First-Person and Third-Person Third-Person

3.) How exciting do you find this game to be?

1 2 3 4 5 6 7
Not at all Exciting Extremely
Exciting

Please write the name of the video game you listed in slot #3:

___________________________________________

1.) How often have you played this game over the past three months? (Extremely often means several hours a day every day or two, on average)

1 2 3 4 5 6 7
Rarely Extremely
Often
2.) Is this game typically played from a first-person (you see the game through the eyes of the character you control) or a third-person (you see the game and the characters from a camera angle above or behind them) perspective?

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<tbody>
<tr>
<td>Entirely First-Person</td>
<td>Equally First- and Third-Person</td>
<td>Entirely Third-Person</td>
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3.) How exciting do you find this game to be?

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<tr>
<td>Not at all Exciting</td>
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<td></td>
<td>Extremely Exciting</td>
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**Please write the name of the video game you listed in slot #4:**

___________________________________________

1.) How often have you played this game over the past three months? (Extremely often means several hours a day every day or two, on average)

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<tr>
<td>Rarely</td>
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<td>Extremely Often</td>
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2.) Is this game typically played from a first-person (you see the game through the eyes of the character you control) or a third-person (you see the game and the characters from a camera angle above or behind them) perspective?

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<tr>
<td>Entirely First-Person</td>
<td>Equally First- and Third-Person</td>
<td>Entirely Third-Person</td>
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3.) How exciting do you find this game to be?

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<tr>
<td>Not at all Exciting</td>
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<td>Extremely Exciting</td>
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</table>
Please write the name of the video game you listed in slot #5:

___________________________________________

1.) How often have you played this game over the past three months? (Extremely often means several hours a day every day or two, on average)

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<tr>
<td>Rarely</td>
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<td>Often</td>
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2.) Is this game typically played from a first-person (you see the game through the eyes of the character you control) or a third-person (you see the game and the characters from a camera angle above or behind them) perspective?

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<tbody>
<tr>
<td>Entirely First-Person</td>
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</tr>
<tr>
<td>Equally First- and Third-Person</td>
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<tr>
<td>Entirely Third-Person</td>
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</tbody>
</table>

3.) How exciting do you find this game to be?

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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely</td>
</tr>
<tr>
<td>Exciting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Exciting</td>
</tr>
</tbody>
</table>

43
Video Game Questionnaire

For each item, please circle the number that is closest to your experience with the video games you typically play.

1. When you play video games, how aware are you of events occurring in the real world around you?

   1  2  3  4  5  6  7
   Not at all Aware Extremely Aware

2. When you play video games, how natural do your interactions with the video game “world” feel?

   1  2  3  4  5  6  7
   Not at all Natural Extremely Natural

3. When my favorite video game character is successful, I feel happy, but when he/she/it fails, I feel sad

   1  2  3  4  5  6  7
   Strongly Disagree Strongly Agree

4. Do you ever feel confused or disoriented when you play video games for a long period of time and then stop?

   1  2  3  4  5  6  7
   Never Always

5. How often do you imagine yourself to be a character in a video game when you aren’t playing that game (or any game)?

   1  2  3  4  5  6  7
   Rarely Often Extremely Often

6. Have you ever been so into playing a game that you lost track of time?

   1  2  3  4  5  6  7
   Never Always
7. How easily can you switch your attention from a task in which you are currently involved to a new task?

<table>
<thead>
<tr>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Easily</td>
<td>Extremely</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

8. When you play video games, how often do you feel or react as if the experiences of the character(s) you control are happening to you?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>Easily</td>
<td>Extremely</td>
<td>Often</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How well do you feel today?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Well</td>
<td>Extremely</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Have you ever felt depressed or down when you were unable to play your favorite video game(s)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Easily</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

11. Have you ever felt anxious or agitated when you were unable to play your favorite video game(s)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. When playing my favorite video game, I want the main character to succeed in achieving his/her/its goals.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly</td>
<td>Disagree</td>
<td>Strongly</td>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Does the real world ever seem boring or bleak compared to your favorite video game(s)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Extremely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. Do you ever become so involved in a video game that people have problems getting your attention?

   1   2   3   4   5   6   7
Never   Always

15. Do you ever become so involved in a video game that it feels as if you are inside the game instead of using a controller/keyboard and watching the screen?

   1   2   3   4   5   6   7
Never   Always

16. How often do you play video games? (“Extremely often” means several hours every day or every two days, on average)

   1   2   3   4   5   6   7
Rarely   Extremely Often

17. How often do feel that you act like or behave like the main characters in your favorite video games?

   1   2   3   4   5   6   7
Rarely   Extremely Often

18. Do you ever become so involved in things that you lose all track of time?

   1   2   3   4   5   6   7
Never   Always

19. Have you ever started visualizing actions or scenes from a video game in a real world situation?

   1   2   3   4   5   6   7
Never   Extremely Often

20. Do real world situations ever seem similar to situations from your favorite video game(s)?

   1   2   3   4   5   6   7
Never   Extremely Often
21. Do you ever wish real life was more like your favorite video game(s)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Extremely Often</td>
<td></td>
<td></td>
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</tbody>
</table>

22. Do you ever get distracted or stressed and accidentally begin viewing a real life situation like you would a situation in a video game?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Extremely Often</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

23. How similar is your personality to the main character of your favorite video game?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Extremely Similar</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

24. How good are you at blocking out external distractions when you are involved with something?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Extremely Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

25. Have video game experiences helped you deal with later real-life experiences?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Extremely Often</td>
<td></td>
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</tbody>
</table>

26. How much do you like or dislike the main character in your favorite video games?

<table>
<thead>
<tr>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly Dislike</td>
<td>No Opinion</td>
<td>Highly Like</td>
<td></td>
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</tr>
</tbody>
</table>
27. How much do you enjoy interacting with the character(s) from your favorite video games?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>Extremely Enjoy</td>
</tr>
</tbody>
</table>

28. Which of the following describe the emotions you frequently feel while playing your favorite video games (check all that apply)?

- Happy
- Excited
- Joy
- Irritable
- Sad
- Disgust
- Afraid
- Anxious
- Angry
- Pride
- Content
- Tired
- Depression
Appendix C: Questionnaires from Study 2

Movie Questionnaire

Circle the number under each item that best represents your opinion about the movie clip you just watched.

1. While I was watching the movie, I could easily picture the events in it taking place.
   
   1 2 3 4 5 6 7
   not at all very much

2. While I was watching the movie, activity going on in the room around me was on my mind.
   
   1 2 3 4 5 6 7
   not at all very much

3. I could picture myself in the scene of the events shown in the movie.
   
   1 2 3 4 5 6 7
   not at all very much

4. I was mentally involved in the movie while watching it.
   
   1 2 3 4 5 6 7
   not at all very much

5. After the movie ended, I found it easy to put it out of my mind.
   
   1 2 3 4 5 6 7
   not at all very much

6. I wanted to learn how the movie ended.
   
   1 2 3 4 5 6 7
   not at all very much

7. The movie affected me emotionally.
   
   1 2 3 4 5 6 7
   not at all very much
8. I found myself thinking of ways the movie could have turned out differently.

1  2  3  4  5  6  7
not at all  very much

9. I found my mind wandering while watching the movie.

1  2  3  4  5  6  7
not at all  very much

10. The events in the movie are relevant to my everyday life.

1  2  3  4  5  6  7
not at all  very much

11. The events in the movie have changed my life.

1  2  3  4  5  6  7
not at all  very much

12. How much did you enjoy watching the clip?

1  2  3  4  5  6  7
not at all  very much

13. I had a vivid mental image of CHARACTER

1  2  3  4  5  6  7
Not at All  Very Much

14. When good things happened to CHARACTER, I felt happy, but when negative things happened to CHARACTER, I felt sad

1  2  3  4  5  6  7
Strongly Disagree  Strongly Agree

15. When you watched the clip, how often did you feel or react as if the experiences of CHARACTER were happening to you?

1  2  3  4  5  6  7
Rarely  Extremely Often

16. When watching the movie clip, I wanted CHARACTER to succeed in achieving his/her goals.
17. I believe CHARACTER to generally be

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<th>4</th>
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<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>An Extremely Good Person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>An Equally Good and Bad Person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>An Extremely Bad Person</td>
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</table>

18. My overall impression of CHARACTER was

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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Extremely Negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neither Negative Nor Positive</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Extremely Positive</td>
<td></td>
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</table>
Character Trait Questionnaire

For each of the following items, please circle the number that best indicates to what degree you believe that each personality trait describes CHARACTER as a person

<table>
<thead>
<tr>
<th>Trait</th>
<th>Not at All</th>
<th>Somewhat</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Arrogant</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Loving</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Aggressive</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cruel</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Quiet</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Reckless</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Humorous</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Humble</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Deceitful</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Foolish</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hateful</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Friendly</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Outgoing</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Unfriendly</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Selfish</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Helpful</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix D: Synopses of Clips used in Study 2

**American Psycho** - this clip follows a young, wealthy businessman named Patrick Bateman throughout a typical day in his life (the title of the film refers to the fact that Bateman is also a serial murderer, though this is not shown or mentioned in the clip used – participants also were not given the title of the film). Patrick awakens in his expensive apartment on the Upper East Side of Manhattan, and in a voiceover details his rigorous morning routine of exercise, bathing, and skin care as he is shown engaging in them. Patrick then arrives late at work, cancels several appointments, and criticizes his secretary’s appearance. Next, he is shown in a limousine, ignoring his fiancée in favor of the music on his portable cassette player. He arrives at an expensive restaurant, where, again via voiceover, he details that he is aware his fiancée is having an affair with his best friend, but that he is engaging in an affair with his co-worker’s fiancée as well. The clip ends with Bateman rebuking his guests for their ignorance of world affairs.

**City of Angels** – in this clip, a young, female doctor named Dr. Maggie Rice fights her way through a traffic jam to arrive at the hospital where she works. Upon arrival, she changes into scrubs and is immediately thrust into a hectic operating room where she conducts emergency heart surgery in an attempt to save a dying man. Midway through the surgery, we see a strange man leaning against the wall of the operating room and observing Dr. Rice, though no one appears to notice his presence. The operation is ultimately a failure, and the patient dies, leaving Dr. Rice to contemplate where she might have erred.

**Fight Club** – a nameless man, through a combination of short scenes and voiceovers, describes his struggle with insomnia that has left him unable to sleep. His search for a solution eventually leads him to a series of support groups for individuals with critical illnesses. Through joining these groups (despite having none of the maladies each group deals with), he comes to feel accepted and is eventually able to resume a normal sleeping pattern. However, one day a mysterious woman begins to attend the same groups as him, and obviously does not suffer from any illnesses either. Her presence reminds him of his own deceit, and at the end of the clip, his insomnia has resumed.

**There’s Something About Mary** – in this comedic clip, an awkward, homely high school student named Ted is discussing his plans for the prom with a group of friends and comments on the beauty of a fellow classmate named Mary who walks by. Shortly thereafter, a young mentally disabled man wanders by and is tricked into making a lewd comment to a large, athletic student and his girlfriend. The student becomes angry and attempts to pick a fight with the disabled man, but Ted jumps into the fray and disrupts the fight, though he is struck a few times in the process. Mary suddenly rushes into the circle and rescues both of them, revealing that the mentally disabled man is in fact her brother Warren. Grateful to Ted, she offers to be his prom date. The clip then cuts to prom night, where Ted arrives at her house and, after a brief moment of confusion, is greeted by her parents. While waiting for Mary, he decides to offer Warren a baseball as a gift; however, he
places the baseball near Warren’s sensitive ears, enraging Warren and causing him to throw Ted violently around the room. Mary and Warren’s parents shout at him and escort their daughter upstairs to repair her dress, which was damaged in the fracas.
Table 1.

*Reaction Time Changes in Milliseconds During the Me/Not-Me Task as a Function of Identification (Pretest Data).*

<table>
<thead>
<tr>
<th>Identification</th>
<th>Relevant Me Traits</th>
<th>Relevant Not-Me Traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Mean -9.19 SD 274.38 N 61</td>
<td>Mean -214.67 SD 397.14 N 21</td>
</tr>
<tr>
<td>High</td>
<td>Mean -166.94 SD 217.83 N 54</td>
<td>Mean 145.71 SD 327.62 N 14</td>
</tr>
</tbody>
</table>
Table 2.

*Reaction Time Changes in Milliseconds During the Me/Not-Me Task as a Function of Transportation (Pretest Data).*

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Relevant Me Traits</th>
<th>Relevant Not-Me Traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Mean: -64.21</td>
<td>Mean: 12.11</td>
</tr>
<tr>
<td></td>
<td>SD: 288.72</td>
<td>SD: 489.88</td>
</tr>
<tr>
<td></td>
<td>N: 61</td>
<td>N: 19</td>
</tr>
<tr>
<td>High</td>
<td>Mean: -104.80</td>
<td>Mean: -168.63</td>
</tr>
<tr>
<td></td>
<td>SD: 225.55</td>
<td>SD: 262.98</td>
</tr>
<tr>
<td></td>
<td>N: 54</td>
<td>N: 16</td>
</tr>
</tbody>
</table>
Table 3.

*Reaction Time Changes in Milliseconds During the Me/Not-Me Task as a Function of Identification (Idiographic Data).*

<table>
<thead>
<tr>
<th>Identification</th>
<th>Relevant Me Traits</th>
<th>Relevant Not-Me Traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Mean -21.05</td>
<td>Mean -106.25</td>
</tr>
<tr>
<td></td>
<td>SD 306.09</td>
<td>SD 453.27</td>
</tr>
<tr>
<td></td>
<td>N 54</td>
<td>N 32</td>
</tr>
<tr>
<td>High</td>
<td>Mean -135.81</td>
<td>Mean 119.35</td>
</tr>
<tr>
<td></td>
<td>SD 220.24</td>
<td>SD 402.41</td>
</tr>
<tr>
<td></td>
<td>N 49</td>
<td>N 27</td>
</tr>
</tbody>
</table>
Table 4.

*Reaction Time Changes in Milliseconds During the Me/Not-Me Task as a Function of Transportation (Idiographic Data).*

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Relevant Me Traits</th>
<th>Relevant Not-Me Traits</th>
</tr>
</thead>
<tbody>
<tr>
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References


Green, M. C. (2004). Transportation into narrative worlds: The role of prior knowledge and perceived realism. *Discourse Processes, 38*(2), 247-266.


