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Self-Control Depletion and Narrative: Testing a Prediction of the TEBOTS Model

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This study tests propositions derived from the larger notion that entertainment narratives offer the individual a means by which to alleviate the psychological demands of the self. Specifically, individuals in a state of reduced self-control were expected to experience greater enjoyment, audience response, transportation, and identification during narrative exposure. After a manipulation that depleted self-control resources, participants were exposed to a short story. They then reported their enjoyment and response to the story, as well as their transportation and identification during reading. Results supported the predictions, as enjoyment, audience response, and transportation were significantly greater in the depleted group. Identification showed a nonsignificant difference. Additionally, transportation was found to be a mediator of self-control depletion's effect on enjoyment. Subsequent analyses ruled out alternative mood management and emotion regulation explanations, demonstrating that depleted self-control resources, rather than affect or story valence, accounted for greater narrative engagement.

Stories are a rewarding and vital part of communication behavior. What makes narrative storytelling and the consumption of those stories so important to people? One area of research into entertainment narratives seeks to

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explain how individuals experience narratives and, thus, why and how the narratives are consumed. The entertainment experience is often understood in terms of enjoyment—a concept that has received increased attention in terms of its relationship to media use (Oliver & Bartsch, 2010; Vorderer, Klimmt, & Ritterfeld, 2004). More specific to narrative entertainment, immersive phenomena characterized by terms such as absorption, transportation, and identification are understood to be critical aspects of how narratives are experienced and why individuals turn to mediated narrative experiences (Cohen, 2001; Green & Brock, 2000; Oatley, 1999; Slater, 1997).

The production and consumption of narratives is a fundamental facet of human life (Fisher, 1984). Narrative and other forms of entertainment have often been characterized in terms of their value as escape and distraction, an avoidant function that can be adaptive and serve important uses for the individual (Katz & Foulkes, 1962). Other research shows that certain types of narratives may be selected to manage or adjust mood states (Knobloch, 2003; Knobloch-Westervick, 2006; Zillmann, 1988). It is also clear that entertaining narratives have important psychological impacts, such as the potential to facilitate persuasion (Green & Brock, 2000; Slater & Rouner, 2002).

More recent theorizing suggests that a key and fundamental aspect of the entertainment experience is that it provides the individual with the opportunity for temporarily expanding the boundaries of the self (TEBOTS; Slater, Johnson, Cohen, Comello, & Ewoldsen, 2014). The *boundaries* of the self represent the demarcations between those mental representations that constitute the various components of the self-concept (as it is experienced by the individual) and all other mental representations that are not self-referential. By consuming narrative entertainment, the individual is able to momentarily transcend his or her personal self-concept and its inherent limitations. It allows them to experience being someone else, somewhere else. This immersive experience through narrative allows for a temporarily expanded experience of the personal and social self.

The TEBOTS perspective suggests that psychological processes involved with the self are inherently constraining, from a self-determination theory perspective (Slater et al., 2014). Agency, autonomy, and affiliation, three primary human motivators highlighted by self-determination theory (Deci & Ryan, 1990), are inevitably imperfectly realized for even the most successful individual. Therefore, the ability to step beyond those boundaries, if only temporarily, is appealing and rewarding to the individual. Narrative, which provides nearly endless possibilities for vicarious experience of action and relationship in any time and place, historical or imaginary, provides a means of vicariously expanding one's capacities for experiencing heightened agency, autonomy, and affiliation beyond what one's given self is capable of experiencing in social reality. While TEBOTS suggests this need for experiencing temporarily enhanced capacity for agency, autonomy, and affiliation is likely to be experienced by any human being given the constraints of being

an individual self, it also proposes that such vicarious experience should be particularly appealing when the psychological processes involved with the self are limiting or under strain. When the self faces these barriers, the need for satisfying intrinsic motivations can be met through narrative engagement that allows expansion of the self into satisfying experiences beyond these real-life restrictions.

This emphasis on self-expansion offers an account of why narratives are so vital to the human experience, consistent with but not confined to strategic use of narratives for managing or adjusting moods (Knobloch, 2003), or for exploring the meaning of life experiences (Oliver, 2008; Oliver & Bartsch, 2010). Expansion of the boundaries of the self is distinct from escapist media use (Katz & Foulkes, 1962) in that it is not driven by a need for distraction, or abandonment of the self, but rather by a temporary loosening of the restrictions and limitations of personhood and the self-concept. Such use may be escapist or eudemonic (Oliver, 2008); both forms of media consumption have in common the temporary expansion of the subjective experience of self. TEBOTS proposes a large number of situational factors, all of which involve restrictions or threats placed upon the self, by which self-expansion becomes desirable. As such, the model offers an overarching account of the motivations for consuming narratives, as well as for the subsequent effects of narrative consumption (Slater et al., 2014).

One scenario in which people might find themselves needing to expand the self's boundaries is when their self-control resources are depleted. Self-control refers to the aspect of the self that engages in volitional control of behavior and executive decision-making. Indeed, self-control is one of three proposed fundamental components of the self, along with self-presentation and self-esteem (Baumeister, 1998). Without a capacity to control activity, there is no self; the regulatory function of the self directs and restrains thought, emotion, and behavior, and it sets the boundaries of the self-concept. More specifically, Baumeister and colleagues (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister, Schmeichel, & Vohs, 2007) characterize the self-control system as a finite pool of energy resources that can be overextended when individuals exercise too much self-control. This resource pool becomes depleted with use and requires a period of rest for repair and restoration. Therefore, self-control is taxing on the self, so that relief from the self (and by extension, self-control) may be desired during the state of depletion. Narrative engagement provides an ideal means for this relief and repair process, as it permits individuals to expand the boundaries of their routine self-conception for a period of time, which allows for a relaxing of the self-control function and at least temporary relief from the stress on the self-system associated with depleted self-control. Furthermore, the satisfaction of intrinsic motivations (competence, relatedness, and autonomy) has been shown to restore self-control and related states of vitality (Ryan & Deci, 2008). It has also been linked to greater enjoyment of entertainment

media, such as video games (Reinecke et al., 2012; Tamborini et al., 2011). TEBOTS proposes that the vicarious satisfaction of these intrinsic needs—by means of expanding the self-concept through narrative engagement—will increase both the appeal and enjoyment of narratives, as entertainment would hold the potential to satisfy needs and restore self-control resources at least during the media consumption experience and possibly for some time thereafter.

This study seeks to test relevant predictions of the TEBOTS framework by examining self-control depletion as one possible impetus for engagement with narrative. An experiment was conducted to test the TEBOTS-derived propositions that such depletion would lead to greater enjoyment, audience response, transportation, and identification during a narrative experience.

NARRATIVE AND THE SELF

Characterized as the simulation of experience (Mar & Oatley, 2008), the consumption of narrative allows for a structured sensory experience, while dispensing with the individual's usual need for exerting control over their behavior and concern for real-world consequences. As a simulation, immersion in a narrative allows individuals to experience events that they are not experiencing firsthand. Reading can foster vivid mental perception of story worlds and characters' experiences, including visual and aural sensation (Klin & Drumm, 2010). Audiovisual media also provide rich opportunities for immersive narrative experiences (Lee, 2004). Narrative can allow readers to "experience some of the emotions they avoid in ordinary life" (Oatley, 1999, p. 451). Aversive or frustrating aspects of the self and the social environment can be encountered safely in narratives. On the other hand, the reader can also temporarily set aside those aversive aspects of the self in exchange for the fantastic concerns of a wholly removed narrative world (e.g., Gabriel & Young, 2011). The simulation of experience can offer both safe exploration of the possibilities of self and at least temporary relief from the limitations of the personal self, including limitation on the capacity for executive self-control.

Two important and distinct aspects of narrative immersion (Tal-Or & Cohen, 2010) are transportation (Green & Brock, 2000) and identification (Cohen, 2001). Green and Brock's (2000) conceptualization of transportation specifies that the individuals are often pulled "into" a narrative by imagining the story world, experiencing emotions related to characters and events, and focusing their attention on the narrative. Identification, in contrast, is the process of connecting with narrative characters by sharing empathy, thoughts, and goals with a character and by losing self-awareness as one is absorbed into the narrative and merges, to an extent, with the character (Cohen, 2001).

The TEBOTS framework is a recent effort to specify more fundamental motivations for narrative engagement as it relates to the self (Slater et al., 2014). TEBOTS argues that the self-concept is often inherently burdensome and limiting, from a self-determination theory perspective (Deci & Ryan, 1990), and that narrative provides a means of experiencing agency, autonomy, and affiliation free from the constraints of time, place, and life history for a given individual (cf. Tamborini, Bowman, Eden, Grizzard, & Organ, 2010). In particular, TEBOTS suggests that states of being which impinge on the self, including, but not limited to, periods of developmental transition, reduced self-esteem, social threats, self-discrepancies, self-control depletion, or negative mood, will facilitate a drive to temporarily move focus away from these pressures on the self through immersion in narrative worlds. For example, a survey by Greenwood (2008) examined psychological predictors of television use, and found that both negative affect and lower levels of impulse control (as measured by the Adult Temperament Questionnaire; compare to self-control as described below) fostered greater parasocial interaction and transportation during television viewing. Anxiety was also found to increase transportation. These results offer some evidence to suggest that frustrations or undesirable states related to the self can drive entertainment use and affect the depth of the experience with the narrative.

Additionally, evidence on perspective taking, a line of work related to narrative immersion, provides support for the role of the self in narrative immersion's relationship to depletion of self-control resources. Findings indicate a negative link between the accessibility of the self-concept (which was either diminished by asking participants to refer to themselves by a participant code rather than their name, or heightened through the presence of a mirror) and experience-taking from a protagonist's perspective (Kaufman & Libby, 2012).

In addition to immersive effects, the consumption of narrative entertainment is also likely to generate enjoyment, to the extent that exposure to a given narrative is rewarding and satisfies self-expansion motivations. Enjoyment has been shown to follow from, or at least co-occur with, transportation (Hall & Zwarun, 2012; Tal-Or & Cohen, 2010), identification (Hefner, Klimmt, & Vorderer, 2007; Igartua, 2010; cf. Tal-Or & Cohen, 2010), and other forms of immersion into a narrative (Busselle & Bilandzic, 2009). Beyond enjoyment due to immersion, we might expect that a narrative's allowance for the expansion of the self would be enjoyable in its own right, as it provides release from the self when a self-focus is taxing or unwanted, such as when a person has been involved in extensive self-control (Slater et al., 2014). In addition, enjoyment is also theorized as stemming from satisfaction of intrinsic needs (Tamborini et al., 2010, 2011). TEBOTS specifically proposes that expanding the boundaries of the self allows a greater capacity for the satisfaction of these needs. By simulating other realities and by experiencing

other, imagined selves, boundary expansion provides a unique route for satisfying intrinsic motivations that the real self (i.e., the self in its typical constraints of personal and social identity) cannot provide. Therefore, the intrinsic needs met by expanding the self through narrative engagement should manifest as enjoyment (Slater et al., 2014).

Although people may not always engage in deep experiences with narrative such as taking on the perspective of the protagonist or other story-world characters, they certainly engage in boundary expansion through perspective-taking when they are able and motivated to do so (Albrecht, O'Brien, Mason, & Myers, 1995; Brunyé, Ditman, Mahoney, Augustyn, & Taylor, 2009). TEBOTS specifies that the pressures associated with the self-concept are a key motivation for the consumption of narratives. Of the issues involved in the self-concept, one possible impetus for absorption into and enjoyment of a narrative is fluctuation in an individual's self-control resources.

Self-Control

The *self-control* component of the self refers to an executive function in controlling and regulating the individual's behavior, affect, and cognition (Baumeister, 1998; Baumeister et al., 2007). Self-control is that volitional self-regulation that allows a person to exercise change in their responses to situations, so that they may enact desired behaviors or avoid problematic behaviors in keeping with their goals or obligations (Muraven & Baumeister, 2000).

One theory that has been advanced to explain the nature of self-control is the strength model of self-control (Baumeister et al., 1998; Baumeister et al., 2007). This model relies on two key metaphors, as it suggests that (a) self-control resources are a finite reserve, an energy, which fluctuates with use and can be temporarily depleted, and (b) this energetic resource pool also works like a muscle, in that it can be strengthened through repeated use.

Studies have examined both state and trait self-control, but the strength model's predominant experimental paradigm has demonstrated that the depletion of self-control resources through a variety of inductions has powerful but temporary effects on the subsequent ability to exert self-control. For example, study participants who had their self-control depleted through an experimental manipulation spent dramatically less time (8 minutes) and made fewer attempts (19) on an unsolvable puzzle than did participants in the control condition (19–21 minutes; 33–34 attempts; Baumeister et al., 1998). Inductions designed to deplete self-control resources increase participants' self-reported fatigue and intentions to quit on subsequent tasks, but research has generally found that these manipulations do not affect mood (Baumeister et al., 1998; Bruyneel, Dewitte, Franses, & Dekimpe, 2009;

Muraven, Tice, & Baumeister, 1998). However, several studies have indicated mood effects, and a meta-analysis of self-control depletion research (Hagger, Wood, Stiff, & Chatzisarantis, 2010) suggests a small but significant effect of self-control depletion on negative mood.

Self-Control and Narrative Entertainment

Narrative experiences can change the states and even the traits of the individual, and these transformative properties account for some of the appeal of reading, viewing, or listening to narratives (Bartsch, Mangold, Viehoff, & Vorderer, 2006; Mar, Oatley, Djikic, & Mullin, 2011). For example, narrative consumption can alter mood in the short term (Knobloch-Westerwick, 2006; Zillmann, 1988) or enhance social skills in the long term (Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006; Mar, Oatley, & Peterson, 2009).

Self-control, however, is a relatively unexamined factor in the consumption of narrative (Derrick, 2013; Reinecke, Klatt, & Krämer, 2011). It does, however, speak to the fundamental relationship between the self and narrative consumption proposed by TEBOTS. As one of several core functions of the self, along with self-esteem and self-presentation (Baumeister, 1998), self-control is a vital component of the experienced self. If the limited resources available for self-control are depleted, then the experience of being a self is constrained and the individual will at least temporarily seek release from this felt constraint (Slater et al., 2014). A depleted pool of self-control resources is constraining because it restrains the individual from exercising executive control over their behavior, affect, and cognition, and may also hinder the ability to meet intrinsic needs. However, finding an alternative route to satisfy intrinsic motivation and transcend the constraints of the depleted self would provide relief to this state. We propose that an attraction to narrative and a greater level of immersion should follow, as individuals seek to temporarily expand their constraining boundaries. By engaging more deeply with narrative and vicariously satisfying the need for competence, relatedness, and autonomy through simulation, the individual can find need satisfaction and enjoyment (cf. Ryan & Deci, 2008; Tamborini et al., 2011).

The TEBOTS framework is unique in specifying the particular appeal of narrative entertainment and its relationship to the self. A mechanism of boundary expansion connects restrictions on the self to narrative experiences that can alleviate limitations and impediments to individual needs. Research on interpersonal relationships has examined a similar concept of *self-expansion*, in which the individual is motivated to form relationships because they allow for personal growth and the acquisition of new capabilities (Mattingly & Lewandowski, 2014). This experience of self-expansion was also shown to occur during novel experiences (Mattingly & Lewandowski, 2013) and reading about fictional characters (Shedlosky-Shoemaker, Costabile, &

Arkin, 2014), but was not yet proposed or documented as a motivational factor in entertainment.

Given the considerations presented above, we argue that TEBOTS-derived predictions regarding self-control depletion's effects on narrative engagement (Slater et al., 2014) are particularly relevant tests for the initial assessment of underlying relationships between the self, boundary expansion, and narrative outcomes as outlined by the TEBOTS framework.

CURRENT STUDY

If individuals are able to expand the boundaries of the self, that is, transcend the core concerns of the self-concept when it is aversive, through engagement with a narrative, and if depleted self-control presents the kind of state that strains the self and subsequently encourages temporarily expanding the boundaries of the self through narrative experiences, it is to be expected that momentarily depleted individuals will experience more engagement with fictional narratives. Therefore, from the TEBOTS perspective, the state of depleted self-control is one that is expected to increase narrative immersion and enjoyment, through the mechanism of a need for self-expansion. When there is a greater need for boundary expansion, narrative engagement should be more attractive and rewarding to the individual, so that their motivated self-expansion and the associated satisfaction of intrinsic needs will subsequently result in heightened levels of enjoyment, appreciation, transportation, and identification.

Additionally, recent research has extended the understanding of engagement with narrative and entertainment media beyond mere enjoyment. Other, less hedonically driven and more meaningful responses to media are an important part of entertainment reception (Oliver, 2008), and add needed nuance to the conceptualization of how audiences respond to and experience narratives and other media. Oliver and Bartsch (2010) developed an audience response scale with four subscales that capture how fun, moving, and suspenseful a narrative is, and how much it leaves a lasting impression. In keeping with this refinement of how audience responses are conceptualized, it would be expected that:

- H1: Individuals in a state of depleted self-control will report greater enjoyment after reading a short story than will non-depleted individuals.
- H2: Individuals in a state of depleted self-control will report a story they read is more (a) fun, (b) moving, (c) lasting in its impression, and (d) suspenseful than will non-depleted individuals.

Furthermore, narrative's immersive capacity for transportation and identification suggests that narrative consumption does not simply consist of

positive responses to the characters and storyline, but also “being there” and even becoming others. Indeed, this entails expanding the self. Narrative readers can place themselves in the perspective of others, whether as an onlooker participant in the narrative world, or even taking on the protagonist’s perspective (Brunyé et al., 2009; Brunyé, Ditman, Mahoney, & Taylor, 2011). *TEBOTS* suggests that the narrative experience involves becoming caught up in the narrative world and taking the perspective of onlooker or protagonist, and that it is this extension of the self into the narrative world and heightened capacity for meeting intrinsic needs that enables the self to rebuild its resources. Therefore, both transportation into the narrative world and identification with its protagonist should increase when the individual is in a state of depletion.

- H3: Individuals in a state of depleted self-control will report greater transportation after reading a short story than will non-depleted individuals.
 H4: Individuals in a state of depleted self-control will report greater identification with characters in a story after reading a short story than will non-depleted individuals.

Because the literature on narrative immersion suggests that responses such as transportation and identification are mechanisms that lead to subsequent media enjoyment (Busselle & Bilandzic, 2009; Green, Brock, & Kaufman, 2004; Hefner et al., 2007; Tal-Or & Cohen, 2010) and audience response (Hall & Zwarun, 2012), we also examined the following research question:

- RQ1: Will transportation or identification mediate the relationship between self-control depletion and enjoyment and audience response?

Finally, several alternative explanations could account for a relationship between self-control depletion and responses to narrative. Depletion might indirectly influence mood, such that mood management processes instead account for differences in narrative engagement (Knobloch-Westerwick, 2006). Next, the reduction in self-control could lead to reduced capacity for emotion regulation, so that individuals are simply more reactive to stimuli (Wagner & Heatherton, 2013) rather than more motivated to engage with narratives. Last, parasocial processes with familiar or beloved media characters might indicate that simulation of social interaction (Derrick, 2013), rather than expansion of boundaries of the self, could account for increased narrative response. To rule out these alternative accounts, we included measures of mood and perceptions of narrative valence. We also made use of narrative stimuli that varied in terms of valence and that presented unfamiliar characters. Post hoc analyses were used to test the possible influence of mood and narrative valence on the outcomes of interest.

METHOD

Participants and Procedure

Participants ($N = 128$) were recruited from a participant pool of communication undergraduate students, in which they received course credit in return for their involvement. The sample consisted of 70 males (54.7%) and 58 females (45.3%). The average age was 20.65 ($SD = 4.46$), and the sample was 64.8% White, 12.5% Asian, 7.8% Black, 6.3% Hispanic or Latino, 1.6% Pacific Islander, 2.3% multiracial, and 4.7% other.

The experiment made use of a randomly assigned manipulation designed to deplete self-control resources, followed by exposure to a short story and then a questionnaire. Participants were recruited to attend a 30-minute lab session to complete the study. Up to 12 individuals participated in each session, with each participant seated at a computer workstation with privacy screens. The experiment was conducted under the premise of being a sensory perception and memory investigation. Participants were told that they would be encountering various sensory stimuli and then completing questionnaires. After providing informed consent, participants began the first task.

The first task consisted of a manipulation (presented as a sensory and memory task) in which participants copyedited two pages of text, one at a time. Sixty-five of the participants were randomly assigned to the depletion (treatment) condition, and sixty-three were assigned to the control condition. Next, every participant was told to move on to another sensory and memory task, this one involving reading text on a laptop computer. This task began immediately with exposure to one of six randomly assigned short stories. Stories were presented on a series of four pages, with a prominent header featuring the story's title and author. Participants were able to click back to previous pages in the story if they wished.

After reading the short story, participants answered a questionnaire that included scales that measured enjoyment, audience response, transportation, and identification experienced during the reading, along with measures of mood, perceived story valence, story familiarity, and demographics. Upon completion, participants were informed that the study was at its end, debriefed as to the true nature of the study, and thanked for their involvement.

Manipulation

Self-control depletion was manipulated through a procedure developed and used in tests of the strength model of self-control (Baumeister et al., 1998; DeWall, Baumeister, Stillman, & Gailliot, 2007), in which participants are asked to copyedit a page of dense text from a statistics textbook. Initially, all participants are instructed to simply cross out all instances of the letter e on

the page. Then, participants are presented with a second page for copyediting. For the control group, the page is similar and the instructions are the same, so that the task requires time and effort, but not self-control. For the treatment group, however, the text on the second page has been lightened to make reading more difficult, and they are given a new set of instructions, which are more difficult and require self-control to learn and apply. They are told to cross out the letter e, but not to do so if the e is followed by another vowel or if a vowel precedes the e by two letters. Among the self-control depletion procedures developed and tested by Baumeister and colleagues (1998; DeWall et al., 2007), this manipulation is especially efficacious in inducing self-reported depletion and the effects predicted to follow from depletion.

Reading Task

Six short stories were used to avoid case-category confound (Jackson, 1992) and to present a range of story valence. Participants were randomly assigned to read just one story. The stories, “The Sniper” by Liam O’Flaherty, “The Death of a Clerk” by Anton Chekhov, “Doctor Know-All” by Jacob and Wilhelm Grimm, “Jorinde and Joringel” by Jacob and Wilhelm Grimm, “One of These Days” by Gabriel García Márquez, and “Two Were Left” by Hugh B. Cave, were all of similar word count ($M = 876.5$, $SD = 153.37$) and Flesch reading ease ($M = 81.97$, $SD = 5.24$). The O’Flaherty and Chekhov stories were pretested as have negative tones and negative endings, each Grimm story was pretested as having a positive tone and positive ending, and the García Márquez and Cave stories both scored as relatively moderate in their tones and endings. We balanced valence of tone and endings because we wished to demonstrate that enjoyment, audience response, transportation, and identification after self-control depletion were not dependent on the impact of the story upon mood. Finally, the amount of time spent reading the short story was measured by the survey software ($M = 255.34$ s, $SD = 96.90$).

Measures

Survey measurements for capturing enjoyment and audience response following exposure to the short story were the five-item version (McAuley, Duncan, & Tammen, 1989) of the interest-enjoyment subscale of the intrinsic motivation inventory (INT-ENJ; Ryan, 1982; sample item: “I enjoyed this story very much”), and the audience response scale, which uses 12 items to capture four dimensions of entertainment (fun, moving or thought provoking, lasting impression, and suspense; Oliver & Bartsch, 2010; sample items: “It was fun for me to read this story,” “I found this story to be very meaningful,” “This story will stick with me for a long time,” “I was at the edge of my seat

while reading this story”). The INT-ENJ formed a reliable scale, $\alpha = .91$. Likewise, the three items for each dimension of the audience response scale formed a reliable subscale: fun, $\alpha = .92$; moving or thought provoking, $\alpha = .84$; lasting impression, $\alpha = .89$; and suspense, $\alpha = .87$.

Additionally, participants completed the narrative transportation scale (Green & Brock, 2000; sample item: “While I was reading the story, I could easily picture the events in it taking place”) and the identification scale (Cohen, 2001; sample item: “While reading the story, I felt I could really get inside [the protagonist’s] head”). Each of these was customized to refer to characters and locations in the specific story a respondent was assigned to read, as the 15-item transportation scale allows for 4 customized items that refer to the protagonist, antagonist, setting, and a secondary character, while the identification scale allows eight of its 10 items to make reference to the protagonist. Both transportation, $\alpha = .81$, and identification, $\alpha = .91$, were reliable scales.

The display order of the INT-ENJ, audience response, narrative transportation, and identification scales was fully randomized, and the order of items within each scale was randomized, too. All items made use of 7-point response scales with the response anchors of 1 being *strongly disagree* to 7 being *strongly agree* (INT-ENJ, audience response) or 1 being *not at all* to 7 being *very much* (transportation and identification).

Afterward, participants reported their current mood with the positive affect negative affect schedule (PANAS; Watson, Clark, & Tellegen, 1988), which consists of ten positive (e.g., “excited” and “enthusiastic”) and ten negative (e.g., “distressed” and “upset”) adjectives and how much they are felt at the moment, ranging from 1 (*very slightly/not at all*) to 5 (*extremely*). Participants were also asked to rate the valence of their short story’s tone and ending (“the story had a happy ending,” “the story had an unhappy ending,” “the story was cheerful,” and “the story was depressing,” from 1 [*strongly disagree*] to 7 [*strongly agree*], with items 2 and 4 reverse coded). For mood, the positive, $\alpha = .77$, and negative, $\alpha = .82$, subscales of the PANAS were reliable, as was the scale for story valence, $\alpha = .86$. With regard to perceived story valence, significant variability was demonstrated by an analysis of variance (ANOVA) with story as a between-subjects factor and perceived valence as outcome, $F(5, 122) = 41.90, p < .001, \eta_p^2 = .63$. Indeed, half of the stories (“One of These Days,” “Two Were Left,” and “The Death of a Clerk”) were rated below 3.5 (below the midpoint for the scale) for story valence, and the other half (“The Sniper” and the Grimm tales) rated above 5.

Finally, participants indicated if they were familiar with the story or the author prior to the study. Four participants reported having read “The Sniper” before, and a single respondent each reported that they had read “One of These Days,” “Two Were Left,” and “The Death of a Clerk.” No respondent reported having read the Grimm stories, but nearly a third had heard of those

authors. The other four authors were less well-known by respondents, $\leq 20\%$. This suggests that these short stories were novel to most participants, and were by no means familiar or beloved stories. Furthermore, the characters were not reoccurring personas present in other narrative works.

RESULTS

To compare engagement with and response to narrative entertainment of the treatment group, which experienced self-control depletion, with that of the experimental control group, an independent samples t test was conducted for each outcome variable. With regard to the first hypothesis, regarding enjoyment, the self-control depletion condition demonstrated greater enjoyment than the control group, $t(126) = 2.25$, $p = .026$, $d = 0.40$. When the resources of the self were depleted, reading a narrative was reported as more enjoyable. All dependent variables' means are presented in Figure 1.

Next, the effects of depletion on the four dimensions of the audience response scale (Oliver & Bartsch, 2010) were tested. The treatment group reported the stories they read as more moving or thought provoking, $t(126) = 2.71$, $p = .008$, $d = 0.48$, as leaving more of a lasting impression, $t(126) = 2.64$, $p = .009$, $d = 0.47$, and as more suspenseful, $t(126) = 2.83$, $p = .005$, $d = 0.50$, compared to the control group. However, stories were not rated as significantly more fun by those in a state of self-control depletion, $t(126) = 1.33$, $p = .19$, $d = 0.24$.

In addition to greater enjoyment and appreciation, participants whose self-control resources were depleted also experienced greater transportation

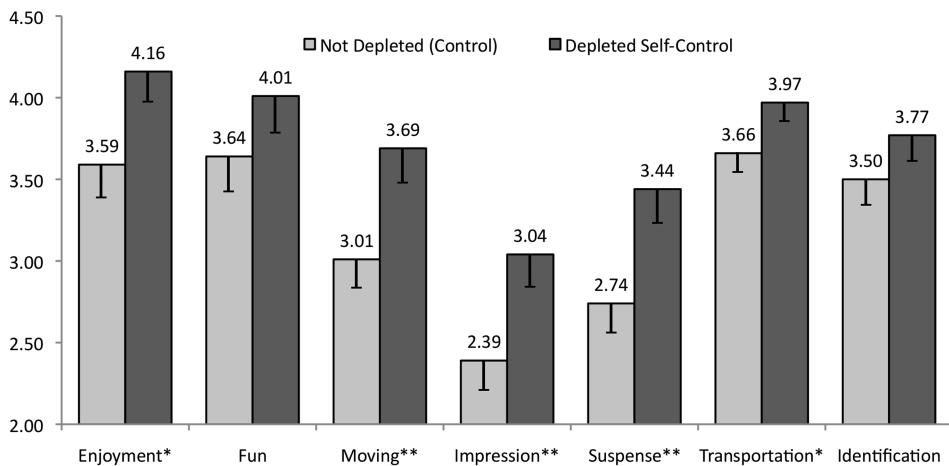


FIGURE 1 Effect of depletion of self-control resources on narrative enjoyment, audience response subscales, transportation, and identification, with group means and standard error bars. * $p < .05$, ** $p < .01$.

into the narrative, $t(126) = 2.12, p = .036, d = 0.38$. And, while identification was greater in the treatment group, it was not a significant difference from the control group, $t(126) = 1.28, p = .20, d = 0.23$.¹

Followup analyses examined whether transportation and identification mediated the effects of self-control depletion on enjoyment and audience response. Indirect effects were tested through bootstrap sampling, using the PROCESS macro for SPSS (Hayes, 2013), by simultaneously including both transportation and identification as parallel mediators. Results demonstrated indirect effects via transportation for enjoyment and all audience response dimensions, as indicated by confidence intervals above zero. Figure 2 illustrates this mediation for the dependent variable of enjoyment. Similar indirect effects via transportation were obtained for the outcomes of moving or thought provoking, $b = 0.21, SE = 0.10, 95\% CI [0.04, 0.45]$, model $R^2 = .52$; lasting-impression, $b = 0.10, SE = 0.07, 95\% CI [0.004, 0.30]$, model $R^2 = .39$; suspense, $b = 0.18, SE = 0.10, 95\% CI [0.03, 0.42]$, model $R^2 = .43$; and fun,² $b = 0.23, SE = 0.12, 95\% CI [0.03, 0.50]$, model $R^2 = .46$. In contrast, all tests of identification as a mediator produced confidence intervals that included zero. Thus, transportation appeared to be a very consistent mediator of enjoyment and audience response, whereas identification did not mediate this relationship.

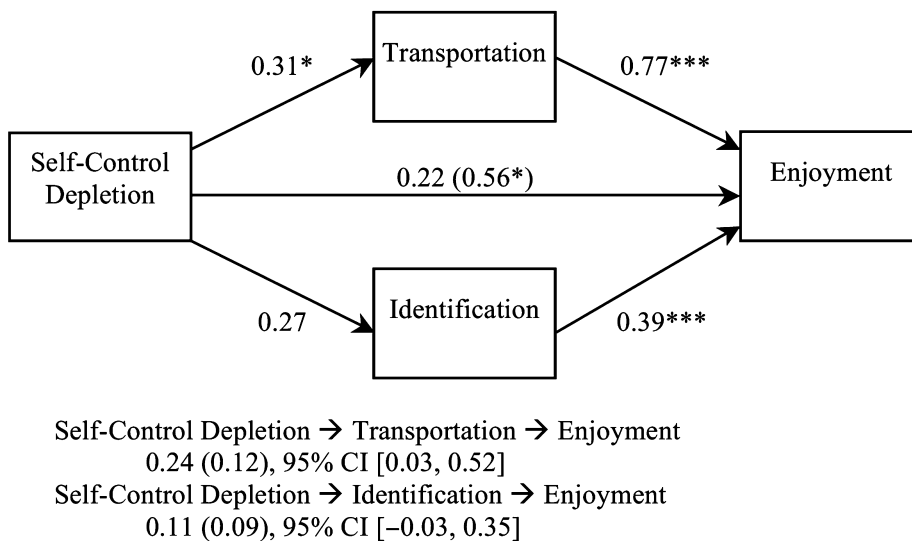


FIGURE 2 Mediation of self-control depletion on enjoyment via transportation and identification. Indirect point estimates (standard errors in parentheses) with bias corrected confidence intervals were created with 1,000 bootstrap samples. For enjoyment, overall model $R^2 = .53$, $F(3, 124) = 45.88, p < .001$. All paths are labeled with unstandardized coefficients, plus total effect in parentheses. * $p < .05$, *** $p < .001$.

With regard to alternative explanations of mood management or emotion regulation of responses to the stimulus, several analyses were conducted to account for these possibilities. As expected, independent samples *t*-tests showed that there were no significant differences between experimental groups in positive affect, $t(126) = 0.48, p = .63, d = 0.09$, or negative affect, $t(126) = 1.04, p = .30, d = 0.19$, indicating no differences in mood due to self-control depletion or subsequent narrative consumption. Independent samples *t* tests also showed no significant differences between conditions in the perceived valence of stories, $t(126) = 0.66, p = .51, d = 0.12$, or the extremity of perceived valence (i.e., either very negative or very positive, using a folded measure of valence), $t(126) = -1.11, p = .27, d = 0.20$. This demonstrates that while self-control depletion increased the measures of narrative engagement, it did not influence perceptions of how positively or negatively valenced a short story was. Next, a series of 2×6 (Condition \times Story) between-subjects ANOVAs demonstrated that there was also no moderating influence of the individual story read on self-control depletion's effect on enjoyment, $F(5, 116) = 0.42, p = .83, \eta_p^2 = .02$, audience response dimensions, all $F(5, 116) < 1.61, ps > .16, \eta_p^2 < .07$, transportation, $F(5, 116) = 0.70, p = .62, \eta_p^2 = .03$, or identification, $F(5, 116) = 0.56, p = .73, \eta_p^2 = .02$. This provides additional evidence against an alternative explanation of mood management, because stories differed strongly in their valence (see description in method), and would have thus been more or less enjoyable due to their hedonic properties if the experimental effects were due to the management of mood. Additionally, using the same 2×6 ANOVA design, experimental condition did not interact with story title to influence these perceived differences between stories in valence, $F(5, 116) = 0.73, p = .60, \eta_p^2 = .03$, or extremity of valence, $F(5, 116) = 0.38, p = .86, \eta_p^2 = .02$. This provides additional evidence against an alternative explanation of simple inability to regulate emotional responses to stories due to depleted self-control (cf. Wagner & Heatherton, 2013).

Furthermore, if mood management (Zillmann, 1988) or mood adjustment (Knobloch, 2003) processes accounted for the increased enjoyment under self-control depletion, the influence of depletion on narrative response should be greater when the story was positively valenced (Zillmann & Bryant, 1985). This alternative explanation was also ruled out by means of hierarchical multiple regression models design to test the possibility of an interaction between perceived story valence and depletion. Valence was not a significant moderator of experimental condition for any dependent variable, $|b^*|s < .31, ps > .22, \Delta R^2 \leq .01$. Additionally, the same procedures found no moderating effects of participant sex, $F(1, 124) < 1.27, ps > .26, \eta_p^2 \leq .01$, or time spent reading, $|b^*|s < .45, ps > .11, \Delta R^2 < .02$, on enjoyment, audience response, or transportation. Time spent reading did, however, interact with condition to predict reduced identification, $b^* = -.78, p = .007, \Delta R^2 = .057$. The treatment group spent more time reading on average ($M = 267.23$

seconds, $SD = 107.44$) than the control group ($M = 243.82$ seconds, $SD = 84.71$), but this was a nonsignificant difference, $t(126) = 1.37$, $p = .17$, $d = 0.24$.

DISCUSSION

This study sought to test the proposition, derived from the TEBOTS framework, that people make use of narrative entertainment to seek respite from the demands of a self-concept strained by self-control, by temporarily expanding the boundaries of the self. Specifically, a state of depleted self-control was employed as a strain on the self that should generate a need to expand the self-concept. The strength model of self-control suggests that the part of the self that exercises self-control is an exhaustible resource that can be temporarily depleted and requires rest to rebuild. This state of self-control depletion provides an ideal setting where a need to step aside from taxing elements of the self and expand the self-concept results in greater engagement with and enjoyment from narratives.

After inducing a state of depleted self-control in randomly assigned lab participants, each was exposed to a short story. Depleted participants reported more enjoyment of the short story compared to control group participants, providing support for Hypothesis 1. Support was evident for Hypothesis 2 for three of four subscales of the audience response dependent measure, as depleted participants reported their stories as being more suspenseful, moving or thought provoking, and leaving a lasting impression.

There was no difference with the control condition for the amount of fun experienced during reading. This lack of a significant effect is surprising, given the especially high correlation between enjoyment and fun (see Table 1). Perhaps expansion of the self is likely to have less connection to a strictly hedonic dimension of narrative enjoyment such as fun, compared to other more eudaimonic or absorbing entertainment experiences (cf. Oliver, 2008). On the other hand, given that the data for this measure trend in

TABLE 1 Zero-Order Correlations Between Dependent Variables

	1	2	3	4	5	6
1. Enjoyment						
2. Fun	.868***					
3. Moving	.694***	.683***				
4. Impression	.606***	.610***	.797***			
5. Suspense	.608***	.589***	.804***	.706***		
6. Transportation	.679***	.626***	.658***	.514***	.590***	
7. Identification	.635***	.613***	.644***	.582***	.579***	.667***

Note. $N = 128$.

*** $p < .001$.

the same direction as other outcomes, the study may have lacked sufficient power to detect an effect on fun. Indeed, post hoc power analysis in G*Power 3.1 suggests that the sample only yielded 39.14% power to detect a small-sized effect of $d = .30$. In any case, any influence of self-control depletion on fun (and identification—see next paragraph) could possibly constitute an effect size on a smaller magnitude than other measures of narrative engagement.

Hypothesis 3 was also supported, as self-control depletion led to greater transportation. This suggests that expansion of the boundaries of the self led not only to more enjoyment of and response to narrative entertainment, but also to more immersion in the narrative world. However, the other aspect of narrative immersion, identification, did not demonstrate a significant difference (cf. distinct transportation and identification processes in Tal-Or & Cohen, 2010). While the direction of the means imply more identification may have occurred among the depleted group (perhaps a small effect requiring greater statistical power to detect, much like the fun dimension of audience response), the hypothesis was not supported.

With regard to the research question about whether transportation or identification would act as a mediator between self-control depletion and enjoyment, we found evidence that transportation did act as a mechanism that led to greater enjoyment and audience response. In contrast, no mediation by identification was found. This is in keeping with earlier research (Tal-Or & Cohen, 2010) demonstrating that while transportation and identification both involve narrative immersion, they are distinct processes, especially in that transportation mediates enjoyment effects whereas identification does not.

An alternative explanation for the results is suggested by a line of research that has also tested the relationship between self-control and narrative, but within a *social surrogacy* theoretical framework (Derrick, 2013; Derrick, Gabriel, & Hugenberg, 2009). This framework suggests that parasocial interactions, like social interactions, can be energizing and restore regulatory resources. A test of the social surrogacy perspective involved depleting self-control through a manipulation task, and then participants in a treatment condition were instructed to write an essay about their favorite television program (Derrick, 2013). The control group instead wrote a list of items visible in a room. The results indicated that thinking (and writing) about a favorite entertainment program was linked to an increase in the restoration of participants' depleted self-control, whereas the control group did not experience restoration. Derrick suggests that narrative characters are social surrogates, and that because social interaction is energizing and can restore self-control resources, narrative replenishes self-control through parasocial interaction with virtual friends. It is important to note, however, that this study did not make use of actual narrative engagement, although a followup diary study was used to triangulate the relationship between media use and self-control (Derrick, 2013).

However, if social surrogacy accounts for the observed effect of narrative on self-control restoration, only familiar and beloved characters and narratives should be immersive, enjoyable, and energizing because parasocial interaction is the mechanism by which narrative restores self-control. Novel stimuli or narratives that are less favored should not make a difference, according to the self-surrogacy account. In contrast, *TEBOTS* suggests that any narrative stimulus allowing for expansion of the self's boundaries would potentially make a difference for self-control, as it is narrative engagement and its relationship with the self—not interaction with beloved characters—that is sought when self-control resources are diminished. Accordingly, the immersive experiences of transportation and identification are indicative of placing one's self in the narrative world, in contrast to a phenomenon like parasocial interaction, where one engages with others who reside in the narrative world (Horton & Wohl, 1956).

The present evidence for immersion into the narrative (i.e., greater transportation), as well as the use in this study of relatively novel stimuli, suggests that it was not social surrogacy that accounted for the appeal and enjoyment of narrative among those with depleted self-control, but rather the need to alleviate the burdens of the self. However, we did expect clear effects for identification following self-control depletion, given that vicarious satisfaction of intrinsic motivations is key to boundary expansion, yet, these were not evident. It may be that identification is more idiosyncratically a function of the characters portrayed and of the individuals experiencing the narrative than is the experience of transportation into the time and place of a story, and of the various aspects of enjoyment of the story. In addition, perhaps identification draws too much from the resources of the self at a time when the self is depleted due to self-control. Consequently, identifying with a character when the self is already depleted may be difficult. Future research could examine these issues relevant to identification, investigate the role of parasocial interaction in temporarily expanding the boundaries of the self, and make use of both favored and unfavored narrative texts (cf. Derrick et al., 2009) to examine what role, if any, social surrogacy plays in the maintenance of self-control resources compared to boundary-expansion. Additionally, given the results of the power analysis, future research could employ larger sample sizes in order to attempt to detect relatively smaller effects, such as those that may occur for identification or fun.

Another alternative explanation besides mood management or self-surrogacy is that the depletion of self-control enhanced enjoyment, audience response, and transportation by reducing participants' ability to regulate their responses to these short stories. The absence of self-control resources might have led to heightened responses not because of greater motivation or need for narrative experience, but because depleted individuals had less control over their responses to the stimulus (Wagner & Heatherton, 2013). However, this should have also resulted in more extreme perceptions of story valence

when self-control was depleted. Yet, as reported above, perceptions of story valence were not any more extreme in the self-control depletion condition, and differences in perceived valence between stories were not moderated by condition. However, it may be that the measure of story valence, which focused on story tone and conclusion, may not have been the most direct test of emotional reactivity. Yet, this evidence, coupled with the finding that story valence did not moderate the effect of self-control depletion on any dependent variable, suggests that the rival explanation of emotional reactivity does not account for the effects of self-control depletion seen in the data. On the other hand, given evidence that emotional reactivity is an outcome of self-control depletion (Wagner & Heatherton, 2013), future work should reconcile its influence.

The present results have several implications for the strength model of self-control. By illustrating the proposed relationship between the self and narrative engagement, the results provide additional evidence that self-control is a key component of the self-concept, and that when it is diminished, motivations regarding the sense of self appear to arise (i.e., self-expansion). As such, depleted self-control should lead to behaviors that involve transcending the self, such as narrative consumption. However, narrative engagement may have variable consequences for whether self-control resources are efficiently restored, depending on the narrative experience. Hedonically rewarding or interactive media may replenish resources (Reinecke et al., 2011; Tice, Baumeister, Shmueli, & Muraven, 2007), while sad or negative content may hinder replenishment or even reduce self-control further (Muraven et al., 1998). Additionally, media use that is appraised as procrastination or undesirable can have counterproductive effects on restoration of self-control (Reinecke, Hartmann, & Eden, 2014).

With regard to TEBOTS, the present study tests one aspect of the model. While support for that aspect—increased enjoyment under conditions of self-control depletion—does increase our optimism about the utility of the model, much remains to be demonstrated. While future research should continue to examine self-control depletion within this paradigm—for example, how the extent of depletion impacts narrative responses, and under which conditions self-control may be restored (cf. Reinecke et al., 2011)—it should also examine other aspects of the self, such as fluctuations in self-esteem or threats to social identity, that are predicted to motivate narrative exposure. Additionally, future work can also examine other variants of depletion such as work strain (Reinecke, 2009) and whether they share the same relationship to the self and, thus, the same motivating mechanism of self-expansion. Perhaps work strain is more characterized by escapist motivations; empirically drawing these distinctions would be a fruitful path forward.

One limitation of the present study is that it did not directly measure the motivational mechanism of self-expansion. Future research should attempt to do so, to provide additional evidence that the tenets of the TEBOTS model

account for the effect of self-control depletion on responses to narratives. Similarly, the study did not employ a manipulation check of the experimental induction. However, an extensive body of work has validated this and related inductions of depletion, showing them to be efficacious manipulations of self-control resources with minimal impact on mood (Hagger et al., 2010). An additional limitation is the reliance on a finite set of stimuli, all short stories that could be read in a few minutes. A fairly diverse set of six stories, varying in their valence, were used and randomly assigned to participants. The fact that effects were found consistently across these diverse stories, with no moderating influence of specific story, suggests that narrative is especially appealing when self-expansion needs are brought on by self-control depletion, even when moods are not being managed (Zillmann, 1988) or adjusted (Knobloch, 2003) through selection of appropriate narrative content. Nonetheless, future research might employ stimuli of varying lengths and media. For example, the nature of the narrative may play an important role in how narrative absorption and enjoyment can actually aid in restoring self-control resources, or alleviating other types of strains on the self-concept. Reinecke et al. (2011) found that interactive media (a video game) facilitated more recovery from work strain than non-interactive media (a recording of the same game, or television) because the video game's greater potential for involvement (operationalized as immersion) and enjoyment facilitated greater recovery. Additionally, positively valenced media may enhance the recovery process, too (Tice et al., 2007).

While reading time did not moderate the main effects, the amount of time required to fully restore self-control resources may take longer than a few minutes, depending on the individual and the extent of their depletion. Future work into self-control depletion as one of the aspects of the self that leads to boundary expansion through narrative should also assess the velocity and success with which resources are replenished. While *TEBOTS* suggests that individuals who are constrained by the self will be drawn to narratives regardless of the valence or other properties of narrative, certain types of narratives may be more effective at restoring self-control resources (Slater et al., 2014), and some narratives may be ineffective or counterproductive with regard to post-viewing state: *TEBOTS* theorizes about temporary relief, not about lasting restoration. Additionally, recent survey work by Reinecke et al. (2014) suggests that, in hindsight, media users might appraise their media use following depletion (e.g., after a hard day's work) as procrastination or misbehavior, which leads to subsequent guilt that can ironically harm the enjoyment and recovery process that media use can facilitate. Yet, if narrative engagement allows for restoration of the self's resources, it seems likely that many people will turn to narrative entertainment when it allows for rest and recovery of the self. The increased enjoyment, audience response, and transportation that occur in a state of depleted self-control suggest that this is the case.

NOTES

1. Additionally, to account for alpha inflation, a multivariate analysis of variance was conducted with the seven outcome measures as dependent variables and with condition as the independent variable, Hostelling's Trace $\Lambda_{\text{LH}} = .108$, $F(7, 120) = 1.85$, $p = .08$, $\eta_p^2 = .10$. Despite this marginal overall statistic, the significant results for five of seven individual tests, as well as means in the predicted direction for the other two tests, suggest that the study results are not attributable to type I error.
2. Despite an indirect effect through transportation on the dimension of fun, there was still no statistically significant total or direct effect of self-control on fun, in keeping with the results of the prior t test.

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